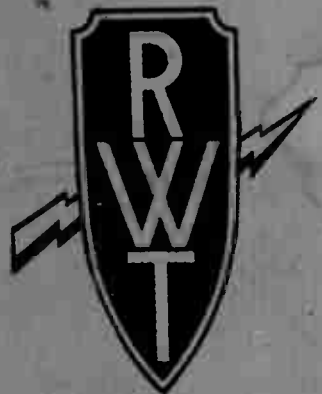


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*Safayette*

# Radio's MASTER

OFFICIAL MANUAL  
AND BUYING GUIDE  
OF ELECTRONIC AND  
RADIO EQUIPMENT



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# **RADIO'S MASTER**

FIFTEENTH EDITION

## **OFFICIAL PARTS and EQUIPMENT MANUAL**

of the

**RADIO, TELEVISION & ELECTRONIC INDUSTRY**

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***What to Buy and Where to Buy It***

- **ILLUSTRATIONS**
- **DESCRIPTIONS**
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- **PRICES**

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# RADIO'S MASTER

FIFTEENTH EDITION

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FIFTEENTH EDITION

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#### PILOT, DIAL LIGHTS AND ASSEMBLIES— INSTRUMENT FUSES— DRY DISC, INSTRUMENT RECTIFIERS

G-1 to 10.....	Dial Light Co. of America
G-11, 12.....	E. F. Johnson Company
G-13.....	General Electric Company
G-14, 15.....	Bussmann Manufacturing Co.
G-16.....	Federal Telephone & Radio Corp.
G-17 to 20.....	Littelfuse, Inc.
G-21.....	Conant Laboratories
G-22.....	Radio Receptor Co., Inc.
G-23.....	Schauer Mfg. Corp.
G-24.....	Bradley Laboratories, Inc.
G-25.....	International Rectifier Corp.

### SECTION H

#### BOOKS—MANUALS—RADIO DATA SERVICES

H-1 to 7.....	John F. Rider Publisher, Inc.
H-8.....	Howard W. Sams & Co., Inc.
H-9, 10.....	Murray Hill Books, Inc.
H-11, 12.....	American Radio Relay League
H-13.....	Boyce-Roche Book Co.
H-14.....	McGraw-Hill Book Co., Inc.
H-15, 16.....	Editors & Engineers, Ltd.
H-17.....	Radio Corporation of America
H-18.....	Oelrich Publications
H-19.....	P. R. Mallory & Co., Inc.

### SECTION J

#### COMMUNICATION RECEIVERS—TRANSMITTERS— AMATEUR EQUIPMENT AND ACCESSORIES— VARIABLE CAPACITORS—COILS—INSULATORS— METAL RACKS, CABINETS, PANELS, ETC.

J-1 to 4.....	The Hallicrafters Company
J-5.....	Harvey-Wells Electronics, Inc.
J-6 to 23.....	National Company, Inc.
J-24.....	Decimeter, Inc.
J-25 to 30.....	J. W. Miller Company
J-31, 32.....	Radio Mfg. Engineers, Inc.
J-33 to 42.....	E. F. Johnson Company
J-43.....	Stanwyck Winding Co.
J-44 to 50.....	James Millen Mfg. Co., Inc.
J-51 to 55.....	Allen D. Cardwell Mfg. Corp.
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J-57, 58.....	Barker & Williamson, Inc.
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### SECTION J (Con.)

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J-83 to 87.....	Insuline Corporation of America

### SECTION K

#### RECEIVER KITS—TELEVISION KITS— TELEVISION ACCESSORIES—CRYSTALS

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K-7.....	Philmore Mfg. Co., Inc.
K-8.....	Anchor Radio Corporation
K-9, 10.....	Tech-Master Products Co.
K-11, 12.....	Radio Corporation of America
K-13, 14.....	Radio Merchandise Sales, Inc.
K-15 to 17.....	The House of Television, Inc.
K-18.....	Hot Nails, Inc.
K-19.....	Standard Coil Products Co., Inc.
K-20 to 22.....	Petersen Radio Co., Inc.
K-23, 24.....	Bliley Electric Company

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#### SWITCHES—JACKS—PLUGS—RELAYS— PHOTO ELECTRIC UNITS— TELEGRAPH KEYS & PRACTICE SETS

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L-9, 10.....	Switchcraft, Inc.
L-11 to 14.....	Advance Electric & Relay Co.
L-15, 16.....	Guardian Electric Mfg. Co.
L-17, 18.....	Potter & Brumfield Sales Co.
L-19 to 22.....	Leach Relay Company
L-23, 24.....	Allied Control Co., Inc.
L-25.....	Amperite Company, Inc.
L-26.....	Standard Electrical Products Co.
L-27.....	General Control Company
L-28.....	Tech Laboratories, Inc.
L-29, 30.....	Micro Switch
L-31.....	Centralab Div. Globe-Union, Inc.
L-32.....	E. F. Johnson Co.
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### SECTION M

#### DRY BATTERIES—BATTERY ELIMINATORS, CHARGERS, POWER SUPPLIES—POWER CONVERSION EQUIPMENT—GENERATORS, CONVERTERS—VIBRATORS, PACKS—VARIABLE VOLTAGE TRANSFORMERS & CONTROLS

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M-11, 12.....	General Dry Batteries, Inc.
M-13.....	Radio Corporation of America
M-14.....	Perma-Power Company
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M-23.....	Cornell-Dubilier Electric Corp.
M-24.....	Electro Products Labs., Inc.
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M-35 to 40.....	American Television & Radio Co.
M-41 to 44.....	Radiant Corporation
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## Numerical Index of Manufacturers' Display Pages (Concl.)

### SECTION N

#### TRANSFORMERS, ALL TYPES—REACTORS—CHOKES

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N-17 to 24.....	Triad Transformer Mfg. Co.
N-25, 26.....	Halldorson Company
N-27 to 30.....	SNC Manufacturing Company
N-31 to 34.....	Thordarson Div., Maguire Industries
N-35 to 52.....	United Transformer Corporation
N-53.....	The Gramer Company
N-54 to 60.....	Freed Transformer Co., Inc.
N-61 to 66.....	Thermador Electrical Mfg. Co., Inc.
N-67 to 76.....	Merit Coil & Transformer Corp.
N-77 to 79.....	Standard Electrical Products Co.
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N-83, 84.....	Crest Transformer Corp.

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#### FIXED CAPACITORS, ALL TYPES— NOISE & INTERFERENCE FILTERS— CAPACITOR TEST INSTRUMENTS (See Section J for Variable Capacitors)

P-1 to 24.....	Cornell-Dubilier Electric Corp.
P-25 to 44.....	P. R. Mallory & Co., Inc.
P-47 to 66.....	Aerovox Corporation
P-67 to 80.....	Sprague Products Company
P-83 to 87.....	Industrial Condenser Corp.
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P-90.....	Chicago Condenser Corp.
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#### RESISTORS—VOLUME CONTROLS—BALLASTS— DECADES, BRIDGES—NOISE FILTERS & SUPPRESSORS —RHEOSTATS, POTENTIOMETERS, ATTENUATORS

R-1 to 8.....	Clarostat Mfg. Co., Inc.
R-9, 10.....	Lectrohm, Inc.
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R-14.....	Centralab, Div. Globe-Union, Inc.
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R-37, 38.....	Sprague Products Company
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#### WIRE AND CABLE, ALL TYPES— ANTENNAS FOR TELEVISION, FM, AM, AUTO— ANTENNA SYSTEMS—ANTENNA ACCESSORIES

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S-39 to 44.....	Technical Appliance Corp.
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#### CABLE CONNECTORS, RECEPTACLES, FITTINGS— MICROPHONE CONNECTORS, PLUGS— SOCKETS AND PLUGS—TERMINAL STRIPS

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T-13 to 18.....	Cannon Electric Development Co.
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#### TOOLS: SOLDERING IRONS, PLIERS, WRENCHES, SCREWDRIVERS, NUTDRIVERS, PUNCHES, CUTTING TOOLS, NEUTRALIZERS & ALIGNMENT TOOLS— CHEMICALS, OILS, PAINTS, ETC.— HARDWARE, SERVICE AIDS OF EVERY DESCRIPTION

U-1.....	American Electrical Heater Co.
U-2.....	Electric Soldering Iron Co., Inc.
U-3, 4.....	Drake Electric Works, Inc.
U-5, 6.....	General Electric Company
U-7, 8.....	Hexacon Electric Company
U-9.....	Kwikheat Mfg. Co.
U-10.....	Ungar Electric Tools, Inc.
U-11.....	Weller Manufacturing Co.
U-12.....	Kester Solder Co.
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U-17, 18.....	Utica Drop Forge and Tool Corp.
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U-23 to 26.....	Telegraph Apparatus Co.
U-27.....	Vaco Products Company
U-28.....	Harry Davies Molding Co.
U-29.....	Greenlee Tool Co.
U-30.....	Trimm, Inc.
U-31.....	Multicore Sales Corp.
U-32.....	Rogan Brothers
U-33 to 56.....	Walter L. Schott Co.
U-57 to 73.....	Insuline Corporation of America
U-74 to 78.....	J.F.D. Mfg. Co., Inc.
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(For Detailed General Index of Specific Items and Their Page Numbers, Refer to Back of Book)



# RECEIVING TYPES



metal  
glass  
miniature  
television picture

A receiving tube for every radio equipment need! General Electric's complete line offers you a wide selection of metal, miniature and glass types. The G-E monogram means tops in quality and performance. A few receiving types are listed below—Ask for complete prices and ratings!

Type	Price
1B3GT	\$2.65
1R5	2.00
1S5	1.80
1T4	2.00
1U4	2.00
3S4	2.00
3V4	2.00
5U4-G	1.50
5V4-G	2.40
5Y3-GT	1.05
6AG5	2.65
6AL5	2.00
6AQ5	2.00
6AU6	2.00
6AV6	1.50
6BA6	1.80
6BE6	1.80
6BC6G	4.80
6BJ6	2.00
6C4	1.65
6H6	1.65
6J5	1.50
6K6-GT	1.50
6L6-G	2.90

Type numbers of metal tubes are shown in bold-face type.

Type	Price
6SA7	\$1.65
6SC7	2.00
6SG7	2.00
6SJ7	1.65
6SK7	1.65
6SL7-GT	2.40

Television Picture Tubes	
Type	Price
5TP4	\$ 54.60
7JP4	22.50
8AP4	21.45
8AP4A	21.45
10BP4	31.00
10BP4A	31.00
10FP4	35.00
10FP4A	35.00
12KP4	37.00
12KP4A	37.00
12LP4	32.00
12LP4A	32.00
14CP4	35.00
16AP4	53.50
16AP4A	53.50
16GP4	45.00
16KP4	49.00
19AP4	100.00
19AP4A	100.00

Type	Price
6SN7-GT	\$2.20
6SQ7	1.50
6T8	2.90
6V6-GT	2.00
6X4	1.50
6X5-GT	1.50
12AT7	2.90
12AU6	2.00
12AU7	2.40
12AV6	1.50
12AX7	2.40
12BA6	1.80
12BE6	1.80
12SA7	1.65
12SG7	2.00
12SK7	1.65
12SQ7	1.50
19T8	2.90
35B5	2.00
35L6-GT	1.65
35W4	1.25
35Z5-GT	1.25
50B5	2.00
50L6-GT	1.65

Type numbers of miniature tubes are shown in italics

Prices and other data subject to change without notice.





# TRANSMITTING AND INDUSTRIAL ELECTRONIC TUBES

## PLIOTRONS—GRID-CONTROLLED HIGH-VACUUM TUBES FOR USE AS MODULATORS, AMPLIFIERS, OSCILLATORS



GL-813 Pliotron



GL-592 Pliotron



GL-7D21 Pliotron



GL-502A  
Midget Thyatron



FG-95 Thyatron

Type No.	Price	No. of Electrodes	CATHODE		PLATE				MAX. FREQ. MC.	
			Volts	Amp.	Max. Volts	Max. Amp.	Max. Input. Watts	Max. Dissipation. Watts	@ Max. Plate Input	@ 50% Max. Plate Input
2C39	\$41.50	3	6.3	1.1	600	0.100	15.8	4.8	500	.....
2C43	29.00	3	6.3	0.9	500	0.040	16.7	6.7	3370	.....
⊙GL-7D21	285.00	4	6.3	30.0	4000	1.0	3000	1200	110	.....
⊙GL-9C24	550.00	3	6.3	250	6500	2.0	12000	5000	220	.....
GL-592	27.50	3	10	5.0	3500	0.250	600	200	110	.....
GL-805	13.50	3	10	3.25	1500	0.210	315	125	30	80
GL-807	2.50	5	6.3*	0.90	600	0.100	60	25	60	125 @ 55%
					750	0.100	75	30		
GL-812-A	4.05	3	6.3	4.00	1250	0.125	155	40	60	100 @ 60%
					1500	0.150	225	55		
GL-813	16.00	5	10.0	5.00	2000	0.180	360	100	30	60 @ 75%
GL-814	14.25	5	10.0	3.25	1250	0.150	180	50	30	100
					1500	0.150	225	65		
⊙GL-833-A	49.50	3	10.0	10.0	4000	0.500	1800	400	30	75 @ 72%
					4000	0.500	2000	450		
⊙GL-862-A	1150.00	3	33	207.0	20000	10.00	20000	100000	1.6	.....
⊙GL-880	483.00	3	12.6	320.0	10500	6.0	60000	20000	25	100
⊙GL-889-A	210.50	3	11	125	8500	2.00	16000	5000	50	150
⊙GL-889-R-A ★	285.00	3	11	125	8500	2.00	16000	5000	25	.....
⊙GL-893-A	630.00	3	10§	61.0§	20000	4.00	70000	20000	5	40
⊙GL-893A-R ★	1150.00	3	10§	61.0§	20000	4.00	70000	20000	5	25
GL-8000	14.50	3	10	4.5	2250	0.275	620	150	30	100
⊙GL-8002	132.00	3	16	38	3500	1.00	3000	1200	150	300
⊙GL-8002-R	160.00	3	16	38	3500	1.00	3000	1200	120	200

Figures in bold type are ICAS ratings.  
 \*Heater-type cathode.  
 †Lower prices apply when new tube is purchased and radiator in good condition is returned prepaid, to Schenectady.  
 §Single-, three-, or six-phase filament. Voltage is per strand, current is per terminal.  
 ⊙Forced-air cooled type.  
 ⊙Water-cooled type.

## THYRATRONS— GRID-CONTROLLED GASEOUS-DISCHARGE-RECTIFIER TUBES

Type No.	Price	No. of Electrodes	CATHODE		ANODE			Starting Grid Voltage
			Volts	Amp	Peak Volts	Peak Amp	Avg Amp	
GL-3C23	\$12.50	3	2.5	7.0	1250	6.0	1.5	Neg
FG-27-A	21.00	3	5.0	4.5	1000	10.0	2.5	Neg
			5.0	10.0	2500	40.0	6.4	Var
FG-105	48.00	4	5.5	11.0	750	77.0	2.5	Var
			5.5	10.0	10000	16.0	4.0	Var
FG-172	65.00	4	5.0	10.0	2000	40.0	6.4	Var
			5.5	11.0	750	77.0	2.5	Var
GL-502-A	1.85	4	6.3	0.6	1300	0.500	0.100	Neg
			6.3	0.15	500	0.100	0.020	Neg
GL-5557/FG-17	7.00	3	2.5	5.0	5000	2.0	0.5	Neg
GL-5560/FG-95	23.00	4	5.0	4.5	1000	15.0	2.5	Var
			5.5	5.0	1000	40.0	0.5	Var

†These ratings apply only when the tube is used for ignitor firing.  
 ‡These ratings apply only when the tube is used in thyatron welding-control service.

Prices and other data subject to change without notice.

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

- Pliotrons
- Thyatrtons
- Phanotrons
- Kenotrons
- Ignitrons
- Phototubes
- Lighthouse Tubes
- Phasitron
- Ballast Tubes
- Cathode-Ray Tubes
- Glow Tubes
- Vacuum Capacitors
- Vacuum Switches

Ask for—ETX-10  
 For complete Prices, Descriptions and Ratings.





# TRANSMITTING AND INDUSTRIAL ELECTRONIC TUBES



FG-32 Phatron



GL-872A/872  
Phatron



GL-8020 Kenotron



FG-235-A Ignitron



FG-271 Ignitron

## PHANOTRONS— GASEOUS OR MERCURY-VAPOR RECTIFIER TUBES

Type No.	Price	No. of Electrodes	CATHODE		ANODE		
			Volts	Amp	Peak Volts	Peak Amp	Avg Amp
FG-280	\$ 56.00	2	5.0	10	2000	40	6.4
GL-866-A	1.95	2	2.5	5	10000	1	0.25
GL-869-B	132.00	2	5	18	20000 15000*	15	2.5 5.0*
GL-870-A	1300.00	2	5	65	16000	.....	75.0
GL-872-A/872	8.20	2	5	7.5	10000	5	1.25
GL-5558/FG-32	14.00	2	5.0	4.5	1000	15	2.5
GL-5561/FG-104	38.00	2	5.0	10	3000	40	6.4

\*Quadrature operation.

## KENOTRONS—HIGH-VACUUM RECTIFIER TUBES

Type No.	Price	No. of Electrodes	CATHODE		PLATE		
			Volts	Amp	Max. Inv. Volts	Max. Amp.	Average Amp.
GL-411	\$187.00	2	10	14.5	100000	0.750	.....
GL-836	9.00	2	2.5*	5.0	5000	1.0	0.25
GL-1641	2.75	3	5.0	3.0	2120	0.250	.....
GL-5025/KC4	225.00	2	20	24.5	150000	0.750	.....
GL-8013-A	10.30	2	2.5	5.0	40000	0.150	0.020
GL-8020	32.00	2	5.0	6.0	40000	0.750	0.100
			5.8△	.....	12500△	.....	.....

\*Heater-type cathode.  
△Surge-limiting diode operation.

## IGNITRONS—HIGH-PEAK CURRENT, POOL-CATHODE TUBES

Type No.	Price	Supply Volts	MAXIMUM RATINGS			
			Kva Demand	Corresponding Average Anode Current, Amps.	Maximum Average Anode Current, Amps.	Corresponding Kva Demand
GL-5550/GL-415*	\$ 44.00	250-600 rms	300	12.1	22.4	100
GL-5551/FG-271*	73.50	250-600 rms	600	30.2	56.0	200
GL-5552/FG-235-A*	110.00	250-600 rms	1200	75.6	140	400
GL-5553/FG-258-A*	241.00	250-600 rms	2400	192	355	800
GL-5554/FG-259-B†‡	173.00	2400 rms	1200	75	113	600
GL-5555/FG-238-B†‡	336.00	2400 rms	2400	135	207	1105

\*Ratings are for voltages of 600 volts rms and below. Ignitor requirements for all welding-control types are 200 volts and 30 amperes.

†Typical ignitor requirements for power-rectifier ignitrons are 75-125 volts, 15-20 amperes. Maximum

requirements are 150 volts, 40 amperes.

‡In addition to ratings given above for welder-control service the FG-238-B and FG-259-B may be used as power-rectifiers in the 125 to 900 d-c voltage fields (ratings will be supplied upon request).

Prices and other data subject to change without notice.

# OLDEST MANUFACTURER SPECIALIZING IN RADIO RECEIVING TUBES



SYMBOL  
OF QUALITY  
SINCE 1921

MAIN OFFICE: SALEM, MASSACHUSETTS  
**HYTRON RECEIVING TUBE PRICE LIST**  
EFFECTIVE JUNE 1, 1950

ORIGINATOR  
OF THE FAMOUS  
BANTAM GT

TYPE	LIST PRICE	TYPE	LIST PRICE	TYPE	LIST PRICE	TYPE	LIST PRICE	TYPE	LIST PRICE
OZ4	\$1.65	6AB7	\$3.20	6P5GT	\$2.40	7Z4	\$1.80	35/51	\$2.00
OZ4G	1.65	6AC5GT	2.90	6Q7	2.00	12A7	3.20	35A5	1.80
IA4P	3.90	6AC7	2.90	6Q7G	1.80	12A8GT	2.00	35B5	2.00
IA5GT	1.80	6AD7G	3.20	6Q7GT	1.80	12AH7GT	2.65	35C5	2.00
IA6	3.55	6AG5	2.65	6R7	2.65	12AL5	2.00	35L6GT	1.65
IA7GT	2.00	6AG7	3.20	6R7GT	2.65	12AT6	1.50	35W4	1.25
IB3GT	2.65	6AH6	3.90	6S4	1.65	12AT7	2.90	35Y4	1.80
IB4P	3.90	6AK5	3.90	6S7G	3.20	12AU6	2.00	35Z3	1.80
IB5/25S	3.20	6AK6	2.40	6S8GT	2.65	12AU7	2.40	35Z4GT	1.50
IC5GT	2.20	6AL5	2.00	6SA7	1.65	12AV6	1.50	35Z5GT	1.25
IC6	3.20	6AL7GT	2.65	6SA7GT	1.65	12AV7	2.90	36	2.65
IC7G	3.20	6AQ5	2.00	6SB7Y	2.40	12AW6	2.65	37	1.80
ID5GP	3.90	6AQ6	1.80	6SC7	2.00	12AX7	2.40	38	2.20
ID7G	3.20	6AQ7GT	2.40	6SD7GT	2.90	12BA6	1.80	39/44	2.65
ID8GT	3.90	6AR5	1.65	6SF5	1.65	12BA7	2.40	41	1.65
IF4	2.65	6AS5	2.00	6SF5GT	1.80	12BE6	1.80	42	1.65
IF5G	2.65	6AT6	1.50	6SF7	2.00	12BH7	2.40	43	1.65
IF6	3.90	6AU5GT	2.65	6SG7	2.00	12F5GT	1.80	45	1.65
IF7G	3.90	6AU6	2.00	6SH7	2.20	12J5GT	1.50	45Z3	1.80
IG4GT	2.65	6AV5GT	2.65	6SJ7	1.65	12J7GT	2.00	45Z5GT	1.80
IG6GT	2.65	6AV6	1.50	6SJ7GT	1.65	12K7GT	1.65	46	2.65
IH4G	2.20	6AW6	2.65	6SK7	1.65	12K8	2.40	47	2.40
IH5GT	1.65	6AX5GT	1.35	6SK7GT	1.65	12K8GT	2.40	50A5	2.20
IH6GT	3.20	6B4G	3.20	6SL7GT	2.40	12Q7GT	1.80	50B5	2.00
IJ6GT	3.20	6B5	3.20	6SN7GT	2.20	12SA7	1.65	50C5	2.00
IL4	2.00	6B6G	2.20	6SQ7	1.50	12SA7GT	1.65	50L6GT	1.65
ILA4	2.65	6B7	3.20	6SQ7GT	1.50	12SF5GT	2.00	50X6	2.20
ILA6	2.65	6B8G	3.20	6SR7	1.80	12SF7	2.00	50Y6GT	1.80
ILB4	2.65	6BA6	1.80	6SR7GT	1.80	12SF7GT	2.00	50Y7GT	2.00
ILC5	2.65	6BA7	2.40	6SS7	1.80	12SG7	2.00	53	2.65
ILC6	2.65	6BC5	2.00	6SV7	2.90	12SH7	2.20	56	1.80
ILD5	2.65	6BD6	1.80	6T7G	3.20	12SJ7	1.65	57	2.00
ILE3	2.65	6BE6	2.00	6T8	2.90	12S7GT	1.65	58	2.00
ILG5	2.65	6BG6G	4.80	6U4GT	2.40	12SK7	1.65	70L7GT	3.90
ILH4	2.65	6BH6	2.00	6U5	2.00	12SK7GT	1.65	71A	2.00
ILN5	2.65	6BJ6	2.00	6U7G	1.80	12SL7GT	2.40	75	1.65
IN5GT	2.00	6BQ6GT	3.20	6V6	3.20	12SN7GT	2.20	76	1.65
IP5GT	2.65	6C4	1.65	6V6GT	2.00	12SQ7GT	1.50	77	1.65
IQ5GT	2.65	6C5	1.65	6W4GT	1.80	12SQ7GT	1.50	78	1.65
IR4	2.65	6C5GT	1.65	6XA	1.50	12T7	1.50	80	1.15
IR5	2.00	6C6	2.00	6X5GT	1.50	12Z3	2.65	81	3.90
IS4	2.40	6C8G	3.20	6Y6G	2.40	14A4	2.65	82	2.65
IS5	1.80	6CB6	2.00	6ZY5G	2.20	14A7/12B7	2.20	83	2.65
IT4	2.00	6CD6G	6.00	7A4(XXL)	2.00	14AF7(XXD)	2.40	83V	3.20
						14B6	2.20	84/6Z4	1.80
IT5GT	2.65	6D6	1.65	7A5	2.20	14B6	2.20	85	2.20
IU4	2.00	6D8G	3.20	7A6	1.80	14B8	2.20	117L/M7GT	3.90
IU5	1.80	6E5	2.20	7A7	1.80	14C5	2.65	117N7GT	3.90
IV	2.20	6F5	1.65	7A8	1.80	14C7	2.40	117P7GT	3.90
IV2	1.50	6F5GT	1.65	7AD7	3.20	14E6	2.20	117Z3	1.50
IX2	2.65	6F6	2.00	7AF7	1.80	14E7	2.65	117Z4GT	2.90
2A3	3.20	6F6G	1.65	7AG7	2.20	14F7	2.20	117Z6GT	2.40
2A4G	4.80	6F6GT	1.65	7AH7	2.20	14F8	2.65	1273	2.65
2A5	2.20	6F8G	3.20	7B4	1.80	14H7	2.40	1280	2.65
2A6	2.65	6G6G	2.65	7B5	1.80	14J7	2.65		
2A7	2.65	6H6	1.65	7B6	1.80	14N7	2.65		
						14Q7	2.20		
3A8GT	4.80	6H6GT	1.65	7B7	1.80	14R7	2.65	SPECIAL PURPOSE TYPES	
3LF4	2.65	6J5	1.50	7B8	1.80	14S7	2.65	Type	List Price
3Q4	2.20	6J5GT	1.50	7C5	1.80	14W7	2.65	OA2	\$3.20
3Q5GT	2.40	6J6	2.90	7C6	1.80	14Y4	2.40	OA3	2.65
3S4	2.00	6J7	2.00	7C7	1.80	19	3.20	OB2	3.55
3V4	2.00	6J7G	2.00	7ES/1201	2.65	19B6G6	6.00	OB3	2.65
5U4G	1.50	6J7GT	2.00	7E6	2.20	19J6	3.20	OC3	2.65
5V4G	2.40	6J8G	3.20	7E7	2.65	19T8	2.90	OD3	2.65
5W4	1.65	6K5GT	2.40	7F7	2.20	24A	2.20	3A5	† 1.95
5W4GT	1.65	6K6GT	1.50	7F8	2.65	25AC5GT	3.90	5R4GY	† 1.50
5X4G	1.80	6K7	1.65	7G7/1232	2.65	25BQ6GT	3.20	6AS7G	† 6.75
								9001	† 3.10
5Y3G	1.05	6K7G	1.65	7H7	2.00	25L6GT	1.65	9002	† 2.50
5Y3GT	1.05	6K7GT	1.65	7J7	2.65	25W4GT	2.65		
5Y4G	1.50	6K8	2.40	7K7	2.65	25Y5	2.90	TV PICTURE TYPES	
5Z3	1.80	6K8GT	2.40	7L7	2.65	25Z5	2.65	Type	Suggested Retail
5Z4	2.65	6L5G	2.65	7N7	2.20	25Z6GT	1.35	7JP4	\$22.50
6A3	3.20	6L6	3.55	7Q7	1.80	26	1.80	108P4	31.00
6A6	2.65	6L6G	2.90	7R7	2.20	27	1.50	12LP4	32.00
6A7	2.00	6L7	2.40	7S7	2.65	30	2.00	16AP4	53.50
6A8	2.00	6L7G	2.90	7V7	2.65	32	3.55	16GP4	46.00
6A8G	2.00	6N6G	3.90	7W7	2.65	32L7GT	3.20	16RP4	53.00
6A8GT	2.00	6N7	2.40	7X7(XXFM)	2.65	33	3.20	16TP4	53.00
6AB4	2.00	6N7GT	2.40	7Y4	1.80	34	3.20		

# RCA ELECTRON TUBES REPLACEMENT DIRECTORY



for INDUSTRY • COMMUNICATIONS • BROADCASTING

## Direct Replacement Types

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

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

Type to be Replaced*	Replace by RCA Type	Type to be Replaced*	Replace by RCA Type	Type to be Replaced*	Replace by RCA Type
CE-1(A-D)	868, 918	R61A	930	832	832-A
1P32	937	FG-67	1904	833	833-A
2AP1	2AP1-A	VR75-30	OA3/VR75	C-833	833-A
2B4	885	FG-95	5566	857	857-B
2X2/879	2X2-A	FG-104	5561	862	862-A
3AP1	3AP1-A	VR105-30	OC3/VR105	866	866-A
3BP1	3BP1-A	VR150-30	OD3/VR150	866-A/866	866-A
4D21	4-125A/4D21	CE-226	4B26/2000	869-A	869-B
4-250A	4-250A/5D22	FG-235A	5552	872	872-A
5BP1	5BP1-A	FG-238B	5555	872-A/872	872-A
5CP1	5CP1-A	HK-257 (B)	4E27/8001	F-872B	872-A
5CP7	5CP7-A	FG-258A	5553	879	2X2-A
5FP7	5FP7-A	FG-259B	5554	889	889-A
5HP1-A	5BP1-A †	FG-271	5551	893	893-A
6Q5-G	884	WT-272	5557	902	902-A
7BP7	7BP7-A	WE-274B	5R4-GY	UE-905	805
7GP4	7JP4	WE-289A	4B26/2000	905	905-A
12DP7	12DP7-A	WT-294	OD3/VR150	906-P1	3AP1-A
PJ-8	5556	WE-295A	203-A	908	908-A
G-9	868	UE-303A	203-A	914	914-A
CE-11V (A-D)	917	WE-304B	834	931	931-A
RK-11	1623	F-307A	207	UE-938	838
FG-17	5557	CE-309	5557	UE-949	849
RK-20A	804	CE-311	3C23	UE-966A	866-A
CE-20	927	UE-311	211	UE-967	5557
CE-21 (A-D)	920	UE-311C	835	UE-972-A	872-A
CE-23 (A-D)	923	UE-317C	217C	UE-975-A	575-A
PJ-23	868	WE-322A	803	1642	2C21/1642
CE-25 (A-D)	927	UE-342B	211	1802-P1	5BP1-A
RK-25	802	375A	575-A	1803-P4	12AP4
RK-25B	802	WE-397A	2K56	1804-P4	9AP4
CE-28 (A-D)	928	FJ-401	1P29	1811-P1	7CP1
RK-28	803	GL-415	5550	1849	1850-A
RK-28A	803	GL-451	8020	1850	1850-A
CE-29 (A-D)	929, 1P39	WL-630	2050	2000	4B26/2000
CE-30 (A-D)	930, 1P40	WL-631	5559	2051	2050
RK-30	800	KU-634	677	2525A5	5BP1-A
FG-32	5558	WL-651/656	5552	5728	1904
RK-33	2C21/1642	WL-652/657	5551	8001	4E27/8001
RK-39	807	WL-653B	5555	8016	1B3-GT/8016
CE-41	921	WL-655/658	5553	189049	4B26/2000
CE-42	922	WL-679	5554	289416D	4B26/2000
RK-44	837	WL-681/686	5550		
RK-47	814	NL-715	5557		
R51A	927	WL-735	868		
FG-57	5559	672	672-A		
RK-57	805	801	801-A		
RK-58	838	812	812-A		
R59A	868, 918	829	829-B		
R60A	920	829-A	829-B		
HY-61/807	807				

See the reverse side of this page for a complete listing and suggested user's prices of more than 200 RCA Non-Receiving Tube Types.

For complete technical information on RCA Tubes for Industry and Communications see your RCA Distributor or write: Commercial Engineering, RCA Tube Department, Harrison, New Jersey.

† Except in high-altitude service.  
\* Where a "type to be replaced" carries a multiple designation incorporating a 5500-series number, that type can be directly replaced by the RCA type having the same 5500-series number. For example: the 5557/FG-17, as well as the FG-17, is directly replaceable by the RCA-5557. Likewise, the 5552/651/656, as well as the WL-651/656, is directly replaceable by the RCA-5552.



# RCA ELECTRON TUBES

for INDUSTRY • COMMUNICATIONS • BROADCASTING



Type	Sugg'd User Price	Type	Sugg'd User Price	Type	Sugg'd User Price	Type	Sugg'd User Price	Type	Sugg'd User Price
1C21	\$ 2.25	6SN7GTy(t)	\$ 1.40	838	\$ 13.75	1612(t)	\$ 3.00	5581	\$ 2.25
1P21	50.00	7BP7-A	48.50	841(t)	4.35	1613(t)	2.65	5582	2.65
1P22	14.75	7C24	159.50	842	4.05	1614(t)	2.05	5583	3.05
1P28	15.50	7CP1	30.75	843	2.60	1616	8.65	5584	3.95
1P29	2.95	7CP4	35.25	845	13.75	1619	2.50	5588	110.00
1P37	2.85	7MP7	39.50	846	250.00	1620(t)	6.60	5592*	1155.00
1P39	1.75	8D21	1300.00	849	138.00	1621(t)	2.15	5618	3.60
1P40	1.85	9C21	866.00	850	43.25	1622(t)	2.30	5651	3.30
1P41	2.80	9C22*	1225.00	851	253.00	1623	4.05	5652	6.55
1P42	5.70	9C25*	1058.00	857-B	209.00	1624	4.00	5655	1300.00
2AP1-A	10.55	10-Y(t)	1.95	858	500.00	1625	2.65	5671*	1225.00
2BP1	9.60	12DP7A	77.00	860	34.50	1626	1.85	5675(t)	21.00
2BP11	11.00	12K8-Y(t)	1.30	861	178.25	1629	1.40	5691	7.75
2C21/1642(t)	1.90	12L8GT(t)	2.25	862-A†	1150.00	1631(t)	2.50	5692	7.75
2C22(t)	1.60	12SW7(t)	1.10	864	1.80	1632(t)	3.10	5693	6.40
2C40(t)	29.00	12SX7GT(t)	1.40	865	11.50	1633(t)	1.95	5696	1.90
2C43(t)	29.00	12SY7(t)	1.30	866-A	1.95	1634(t)	1.40	5713	176.00
2D21	2.00	26A6(t)	2.20	868	2.50	1635(t)	2.15	5734	18.00
2E24	5.10	26A7-GT(t)	5.95	869-B	132.00	1644(t)	3.10	5762	170.00
2E26	3.85	26C6(t)	1.85	872-A	8.20	1654	4.55	5763	1.75
2F21	105.00	26D6(t)	2.00	874	3.10	1816-P4	47.00	5769	1200.00
2K26	192.00	89-Y	1.10	876	5.50	1848	500.00	5770	990.00
2K56	185.00	105	48.00	878	12.75	1850-A	540.00	5771	510.00
2P23	1200.00	172	65.00	880	510.00	1851(t)	3.10	5786	60.00
3A4	1.20	203-A	13.75	884	1.85	1904	23.00	5794	30.00
3A5	1.95	204-A	115.00	885	2.00	1945	109.25	5819	55.00
3AP1-A	14.25	207	242.00	886	4.60	1946	10.90	5820	1200.00
3B25	5.80	211	13.75	889-A	210.50	1947	8.40	5823	1.32
3BP1-A	16.50	217-C	21.50	889R-A*	285.00	1949	11.30	5825	13.00
3C23	12.50	304TH	55.00	891	223.00	1950	7.80	5826	1300.00
3C33	21.25	502-A	1.85	891-R*	362.00	2050	1.85	5879	1.75
3D22	15.00	559	5.35	892	223.00	5527	47.50	5890	20.00
3DP1-A	18.00	575-A	21.00	892-R*	362.00	5550	44.00	8000	14.50
3DP1-S2A	18.25	579-B	13.20	893-A	630.00	5551	73.50	8003	14.00
3E22	8.30	627	17.25	893A-R*	1150.00	5552	110.00	8005	7.40
3E29	20.25	629	10.00	898-A†	1150.80	5553	241.00	8008	8.20
3FP7A	23.00	672-A	26.50	902-A	12.50	5554	173.00	8012-A	15.50
3JP1	16.50	673	21.00	905-A	65.25	5555	336.00	8013-A	10.30
3JP7	21.00	676	48.00	908-A	16.50	5556	10.00	8020	22.00
3KP1	14.50	677	48.00	912	170.50	5557	7.00	8025-A	10.00
3KP11	16.50	715-C	70.00	913	15.50	5558	14.00	9001(t)	3.10
3RP1	14.50	800	11.50	914-A	93.50	5559	19.50	9002(t)	2.50
4B26/2000	11.30	801-A	4.30	917	3.50	5560	23.00	9003(t)	3.10
4C33	182.75	802	4.75	918	3.10	5561	38.00	9004(t)	2.30
4-65A	14.50	803	24.25	919	3.50	5563	40.00	9005(t)	3.45
4-125A/4D21	27.50	804	17.50	920	4.15	5563	40.00	9006(t)	1.60
4-250A/5D22	37.50	805	13.50	921	2.05	5558	14.00		
4E27/8001	24.50	806	34.25	922	1.95	5559	19.50		
4E27A/5-125B	32.50	807	2.50	923	2.05	5560	23.00		
4X150A	48.00	808	10.75	924	3.30	5561	38.00		
4X500A	110.00	809	4.00	925	2.40	5563	40.00		
5BP1-A	22.50	810	14.50	926	2.90				
5CP1-A	23.25	811	3.30	927	2.50				
5CP7-A	27.25	811-A	4.05	928	2.85				
5CP11-A	27.50	812-A	4.05	929	1.50				
5FP4-A	41.75	813	16.00	930	1.65				
5FP7-A	30.25	814	14.25	931-A	9.75				
5R4-GY(t)	1.50	815	6.90	934	3.40				
5UP1	17.75	816	1.65	935	\$ 7.80				
5UP7	20.25	826	12.50	954(t)	5.65				
5UP11	22.00	827-R	172.50	955(t)	3.60				
5WP11	70.00	828	13.75	956(t)	6.30				
5WP15	70.00	829-B	16.25	957(t)	3.75				
6AG7-Y(t)	1.75	830-B	11.50	958-A(t)	6.25				
6AS6	3.65	832-A	12.90	959(t)	6.25				
6C24	60.00	833-A	49.50	991	.75				
6F4(4)	6.40	834	14.50	1603(t)	7.40				
6J4(t)	8.05	835	19.50	1608	7.90				
6L4(t)	6.60	836	9.00	1609	8.60				
6SJ7-Y(t)	.85	837	5.80	1610(t)	2.50				

\* The following credits currently apply when radiators or crates are returned prepaid, in acceptable condition, to the address shown on our return authorization.

Tube Type	Radiator Credit	Crate Credit
9C22	65.00	35.00
9C25	65.00	35.00
889R-A	20.00	10.00
891-R	20.00	10.00
892-R	20.00	10.00
893A-R	110.00	40.00
5592	45.00	25.00
5671	65.00	35.00

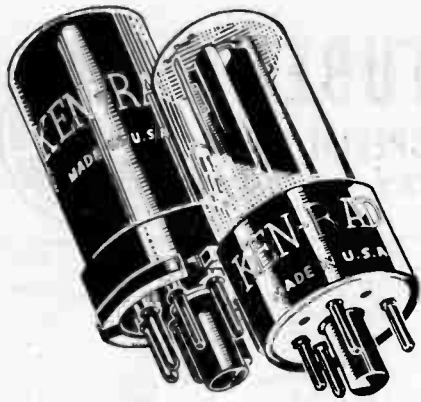
† \$5.00 credit allowed for prepaid return of shipping container and \$10.00 salvage credit allowed for prepaid return of 862-A and 898-A at time of new tube purchase, both to be in good condition.

Types marked with (t) are subject to Federal Excise Tax which is included, where applicable, in the prices shown above.

Prices in effect 5/1/50.







# KEN-RAD RADIO TUBES

metal-glass-miniature  
television picture  
ALL TYPES AND RATINGS

Ken-Rad's complete line of tubes is widely known and highly regarded by service men and owners of radio sets. Top quality means outstanding performance and long life. With Ken-Rad tubes your radio plays better! . . . Some of the many popular types in the Ken-Rad line are listed below: Ask for complete prices and ratings!

Type	Price	Type	Price	Type	Price
<b>1B3GT</b> .....	<b>\$2.65</b>	<i>6BJ6</i> .....	<b>\$2.00</b>	<i>12AT7</i> .....	<b>\$2.90</b>
<i>1R5</i> .....	2.00	<i>6C4</i> .....	1.65	<i>12A U6</i> .....	2.00
<i>1S5</i> .....	1.80	<i>6H6</i> .....	1.65	<i>12A U7</i> .....	2.40
<i>1T4</i> .....	2.00	<i>6J5</i> .....	1.50	<i>12AV6</i> .....	1.50
<i>1U4</i> .....	2.00	<b>6K6-GT</b> .....	1.50	<i>12A X7</i> .....	2.40
<i>3S4</i> .....	2.00	<i>6L6-G</i> .....	2.90	<i>12BA6</i> .....	1.80
<i>3V4</i> .....	2.00	<i>6SA7</i> .....	1.65	<i>12BE6</i> .....	1.80
<b>5U4-G</b> .....	1.50	<b>6SC7</b> .....	2.00	<b>12SA7</b> .....	1.65
<i>5V4-G</i> .....	2.40	<i>6SG7</i> .....	2.00	<b>12SC7</b> .....	2.00
<b>5Y3-GT</b> .....	1.05	<i>6SJ7</i> .....	1.65	<b>12SK7</b> .....	1.65
<i>6AG5</i> .....	2.65	<b>6SK7</b> .....	1.65	<b>12SQ7</b> .....	1.50
<i>6AL5</i> .....	2.00	<i>6SL7-GT</i> .....	2.40	<i>19T8</i> .....	2.90
<i>6AQ5</i> .....	2.00	<i>6SN7-GT</i> .....	2.20	<i>35B5</i> .....	2.00
<i>6A U6</i> .....	2.00	<b>6SQ7</b> .....	1.50	<b>35L6-GT</b> .....	1.65
<i>6AV6</i> .....	1.50	<i>6T8</i> .....	2.90	<i>35W4</i> .....	1.25
<i>6BA6</i> .....	1.80	<b>6V6-GT</b> .....	2.00	<b>35Z5-GT</b> .....	1.25
<i>6BE6</i> .....	1.80	<i>6X4</i> .....	1.50	<i>50B5</i> .....	2.00
<b>6BG6G</b> .....	4.80	<b>6X5-GT</b> .....	1.50	<b>50L6-GT</b> .....	1.65

Prices and other data subject to change without notice.

Type numbers of metal tubes are shown in bold-face type.

Type numbers of miniature tubes are shown in italics.

The  
Serviceman's  
Tube



## TELEVISION PICTURE TUBES

Type	Price
<b>5TP4</b> .....	<b>\$ 54.60</b>
<b>7JP4</b> .....	<b>22.50</b>
<b>8AP4</b> .....	<b>21.45</b>
<b>8AP4A</b> .....	<b>21.45</b>
<b>10BP4</b> .....	<b>31.00</b>
<b>10BP4A</b> .....	<b>31.00</b>
<b>10FP4</b> .....	<b>35.00</b>
<b>10FP4A</b> .....	<b>35.00</b>
<b>12KP4</b> .....	<b>37.00</b>
<b>12KP4A</b> .....	<b>37.00</b>
<b>12LP4</b> .....	<b>32.00</b>
<b>12LP4A</b> .....	<b>32.00</b>
<b>14CP4</b> .....	<b>35.00</b>
<b>16AP4</b> .....	<b>53.50</b>
<b>16AP4A</b> .....	<b>53.50</b>
<b>16CP4</b> .....	<b>45.00</b>
<b>16KP4</b> .....	<b>49.00</b>
<b>19AP4</b> .....	<b>100.00</b>
<b>19AP4A</b> .....	<b>100.00</b>

KEN-RAD TUBES ARE A PRODUCT OF GENERAL ELECTRIC COMPANY

# SYLVANIA RADIO RECEIVING TUBES

RADIO TUBE DIVISION, EMPORIUM, PA.



TYPE	RETAIL PRICE	TYPE	RETAIL PRICE	TYPE	RETAIL PRICE	TYPE	RETAIL PRICE
0Y4	\$4.80	1U5	\$1.80	6AR5	\$1.65	6K7	\$1.65
0Z4	1.65	1V	2.20	6AS5	2.00	6K7G	1.65
0Z4G	1.65	1V2	1.50	6AT6	1.50	6K7GT	1.65
1A3	2.20	1V5	2.20	6AU5GT	2.65	6K8	2.40
1A4P	3.90	1W4	2.65	6AU6	2.00	6K8GT	2.40
1A5GT	1.80	1W5	2.20	6AVEGT	2.65	6L5G	2.65
1A6	3.20	1X2	2.65	6AV6	1.50	6L6	3.55
1A7GT	2.00	2A3	3.20	6AX5GT	1.35	6L6G	2.90
1AB5	2.65	2A5	2.20	6B4G	3.20	6L6GA	2.90
1AC5	2.20	2A6	2.65	6B5	3.20	6L7	2.40
1AD5	2.20	2A7	2.65	6B6G	2.20	6L7G	2.90
1B3GT	2.65	2B7	2.65	6B7	3.20	6N6G	3.90
1B4P	3.90	2E5	2.65	6B8	3.20	6N7	2.40
1B5	3.20	3A8GT	4.80	6B8G	3.20	6N7GT	2.40
1B7GT	3.20	3B7	2.65	6BA6	1.80	6P5GT	2.40
1C3	2.65	3C6/XXB	3.20	6BA7	2.40	6Q7	2.00
1C5GT	2.20	3D6	2.65	6BC5	2.00	6Q7G	1.80
1C6	3.20	3E6	2.65	6BC7	2.20	6Q7GT	1.80
1C7G	3.20	3LF4	2.65	6BD5GT	3.20	6R7	2.65
1C8	2.20	3Q4	2.20	6BD6	2.00	6R7GT	2.65
1D5GP	3.90	3Q5GT	2.40	6BE6	1.80	6S4	1.65
1D7G	3.20	3S4	2.00	6BF6	1.65	6S7	2.65
1D8GT	3.90	3V4	2.00	6BF5	2.20	6S7G	3.20
1E5GP	3.90	5AZ4	1.35	6BG6G	4.80	6S8GT	2.65
1E7GT	3.90	5T4	3.90	6BH6	2.00	6SA7	1.65
1E8	2.20	5U4G	1.50	6BJ6	2.00	6SA7GT	1.65
1F4	2.65	5V4G	2.40	6BK6	1.50	6SB7Y	2.40
1F5G	2.65	5W4	1.65	6BN6	3.20	6SC7	2.00
1G4GT	2.65	5W4GT	1.65	6BQ6GT	3.20	6SD7GT	2.90
1G5G	2.65	5X4G	1.80	6BT6	1.50	6SF5	1.65
1G6GT	2.65	5Y3G	1.05	6BU6	1.65	6SF5GT	1.80
1H4G	2.20	5Y3GT	1.05	6C4	1.65	6SF7	2.00
1H5GT	1.65	5Y4G	1.50	6C5	1.65	6SG7	2.00
1H6GT	3.20	5Z3	1.80	6C5GT	1.65	6SH7	2.20
1J6GT	3.20	5Z4	2.65	6C6	2.00	6SH7GT	2.20
1L4	2.00	6A3	3.20	6C8G	3.20	6SJ7	1.65
1L6	2.65	6A4	3.20	6CB6	2.00	6SJ7GT	1.65
1LA4	2.65	6A5G	3.90	6CD6G	6.00	6SK7	1.65
1LA6	2.65	6A6	2.65	6D6	1.65	6SK7GT	1.65
1LB4	2.65	6A7	2.00	6D8G	3.20	6SL7GT	2.40
1LC5	2.65	6A8	2.00	6E5	2.20	6SN7GT	2.20
1LC6	2.65	6A8G	2.00	6F5	1.65	6SQ7	1.50
1LD5	2.65	6A8GT	2.00	6F5GT	1.65	6SQ7GT	1.50
1LE3	2.65	6AB4	2.00	6F6	2.00	6SR7	1.80
1LG5	2.65	6AB5	2.65	6F6G	1.65	6SR7GT	1.80
1LH4	2.65	6AB7	3.20	6F6GT	1.65	6SS7	1.80
1LN5	2.65	6AC5GT	2.90	6F7	3.20	6ST7	2.65
1N5GT	2.00	6AC7	2.90	6F8G	3.20	6SV7	2.90
1P5GT	2.65	6AD7G	3.20	6G6G	2.65	6T7G	3.20
1Q5GT	2.65	6AF6G	2.65	6H6	1.65	6T8	2.90
1Q6	2.20	6AG5	2.65	6H6GT	1.65	6U4GT	2.40
1R4	2.65	6AG7	3.20	6J5	1.50	6U5	2.00
1R5	2.00	6AH6	3.90	6J5GT	1.50	6U6GT	2.00
1S4	2.40	6AK5	3.90	6J6	2.90	6U7G	1.80
1S5	1.80	6AK6	2.40	6J7	2.00	6V6	3.20
1S6	2.20	6AL5	2.00	6J7G	2.00	6V6GT	2.00
1T4	2.00	6AL7GT	2.65	6J7GT	2.00	6W4GT	1.80
1T5GT	2.65	6AQ5	2.00	6J8G	3.20	6W6GT	1.80
1T6	2.20	6AQ6	1.80	6K5GT	2.40	6W7G	2.65
1U4	2.00	6AQ7GT	2.40	6K6GT	1.50	6X4	1.50

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(CONTINUED FROM PREVIOUS PAGE)

# SYLVANIA RADIO RECEIVING TUBES

TYPE	RETAIL PRICE	TYPE	RETAIL PRICE	TYPE	RETAIL PRICE	TYPE	RETAIL PRICE
6X5GT	\$1.50	12BA6	\$1.80	19BG6G	\$6.00	56	\$1.80
6Y6G	2.40	12BA7	2.40	19C8	3.20	57	2.00
6Z7G	3.90	12BD6	2.00	19J6	3.20	58	2.00
6ZY5G	2.20	12BE6	1.80	19T8	2.90	59	3.55
7A4/XXL	1.80	12BF6	1.65	22	3.20	70L7GT	3.90
7A5	2.20	12BK6	1.50	24A	2.20	71A	2.00
7A6	1.80	12BT6	1.50	25A6G	2.65	75	1.65
7A7	1.80	12BU6	1.50	25AC5GT	2.90	76	1.65
7A8	1.80	12C8	3.20	25AV5GT	2.65	77	1.65
7AD7	3.20	12F5GT	1.80	25BQ6GT	3.20	78	1.65
7AF7	1.80	12H6	1.80	25C6G	2.90	79	2.65
7AG7	2.20	12J5GT	1.50	25L6	3.20	80	1.15
7AH7	2.20	12J7GT	2.00	25L6GT	1.65	81	3.90
7AJ7	2.20	12K7G	2.00	25W4GT	2.00	82	2.65
7B4	1.80	12K7GT	1.65	25Y5	2.90	83	2.65
7B5	1.80	12K8	2.40	25Z5	1.50	83V	3.20
7B6	1.80	12K8GT	2.40	25Z6	2.20	84/6Z4	1.80
7B7	1.80	12Q7GT	1.80	25Z6GT	1.35	85	2.20
7B8	1.80	12S8GT	2.65	26	1.80	89	2.20
7C4	3.20	12SA7	1.65	26BK6	1.65	V99	3.20
7C5	1.80	12SA7GT	1.65	27	1.50	100-70	2.00
7C6	1.80	12SC7	2.20	30	2.00	100-77	2.00
7C7	1.80	12SF5	1.80	31	2.65	117L7GT	3.90
7E5	2.65	12SF5GT	2.00	32	3.55	117N7GT	3.90
7E6	2.20	12SF7	2.00	32L7GT	3.20	117P7GT	3.90
7E7	2.65	12SG7	2.00	33	3.20	117Z3	1.50
7F7	2.20	12SH7	2.20	34	3.20	117Z4GT	2.90
7F8	2.65	12SJ7	1.65	35/51	2.00	117Z6GT	2.40
7G7	2.65	12SJ7GT	1.65	35A5	1.80	FM-1000	3.20
7H7	2.00	12SK7	1.65	35B5	2.00	1273	2.65
7J7	2.65	12SK7GT	1.65	35C5	2.00	1280	2.65
7K7	2.65	12SL7GT	2.40	35L6GT	1.65	XXB (3C6/XXB)	3.20
7L7	2.65	12SN7GT	2.20	35W4	1.25	XXD (14AF7)	2.40
7N7	2.20	12SQ7	1.50	35Y4	1.80	XXFM (7X7)	2.65
7Q7	1.80	12SQ7GT	1.50	35Z3	1.80	XXL (7A4/XXL)	1.80
7R7	2.20	12SR7	2.20	35Z4GT	1.50		
7S7	2.65	12SR7GT	2.20	35Z5GT	1.25		
7V7	2.65	12Z3	2.65	36	2.65		
7W7	2.65	14A4	2.65	37	1.80		
7X6	2.20	14A5	3.90	38	2.20		
7X7	2.65	14A7	2.20	39/44	2.65		
7Y4	1.80	14AF7	2.40	41	1.65		
7Z4	1.80	14B6	2.20	42	1.65		
10	3.90	14B8	2.20	43	1.65		
12A6	2.90	14C5	2.65	45	1.65		
12A6GT	2.90	14C7	2.40	45Z5GT	1.80		
12A7	3.20	14E6	2.20	46	2.65		
12A8G	2.00	14E7	2.65	47	2.40		
12A8GT	2.00	14F7	2.20	49	2.65		
12AH7GT	2.65	14F8	2.65	50	3.90		
12AL5	2.00	14H7	2.40	50A5	2.20		
12AT6	1.50	14J7	2.65	50B5	2.00		
12AT7	2.90	14N7	2.65	50C5	2.00		
12AU6	2.00	14Q7	2.20	50C6G	2.90		
12AU7	2.40	14R7	2.65	50L6GT	1.65		
12AV6	1.50	14S7	2.65	50X6	2.20		
12AV7	2.65	14W7	2.65	50Y6GT	1.80		
12AW6	2.65	14X7	2.65	50Y7GT	2.00		
12AX7	2.40	14Y4	2.40	53	2.65		
12AY7	6.00	19	3.20	55	2.20		

Sylvania products  
are guaranteed  
against defects in  
workmanship  
and materials.

**RADIO TUBE DIVISION, EMPORIUM, PA.**



# SYLVANIA NON-RECEIVING TUBES

RADIO TUBE DIVISION, EMPORIUM, PA.

TYPE	SUGGESTED RESALE PRICE	TYPE	SUGGESTED RESALE PRICE
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## TELEVISION PICTURE TUBES

5BP4 .....	\$27.00	14CP4 .....	\$26.50
7JP4 .....	16.88	16AP4, A .....	40.00
8BP4 .....	20.85	16GP4 .....	34.00
10BP4, A .....	22.25	16JP4, A .....	34.00
10FP4 .....	26.80	16KP4 .....	37.00
10HP4 .....	48.50	16LP4, A .....	34.00
10MP4 .....	22.25	16RP4 .....	37.00
12KP4, A .....	28.50	16TP4 .....	37.00
12LP4 .....	24.00	19AP4, A .....	75.00
12VP4, A .....	24.00		

## GENERAL PURPOSE CATHODE RAY TUBES

3AP1 .....	14.25	5NP1 .....	24.00
3BP1 .....	16.50	7GP1 .....	22.08
5BP1 .....	22.50	7JP1 .....	22.08
5HP1 .....	23.50		

## TRANSMITTING TUBES

2E22 .....	6.00	812A .....	4.85
2E24 .....	5.10	813 .....	16.00
2E26 .....	3.85	815 .....	6.90
2E30 .....	2.45	816 .....	1.30
3D24 .....	12.50	829B .....	16.25
801A .....	3.75	832A .....	12.90
804 .....	17.50	837 .....	4.75
805 .....	13.50	841 .....	4.35
807 .....	2.50	866A .....	1.95
807W .....	6.40	872A .....	8.20
808 .....	10.75	1616 .....	8.65
809 .....	4.00	1625 .....	2.65
810 .....	14.50	1626 .....	1.85
811A .....	4.05	8005 .....	7.40

## SPECIAL PURPOSE TUBES

OA2 .....	1.65	26C6 .....	1.85
OA3 .....	1.35	26D6 .....	2.00
OA4G .....	1.35	28D7 .....	1.80
OB2 .....	1.80	28D7W .....	6.40
OB3 .....	1.40	EF50 .....	1.95
OC3 .....	1.35	864 .....	1.75
OD3 .....	1.35	884 .....	1.85
OZ4A .....	1.20	885 .....	2.00
2A4G .....	1.60	1229 .....	4.25
2C4 .....	2.85	1247 .....	3.00
2D21 .....	2.00	1629 .....	1.40
2V3G .....	3.15	2050 .....	1.85
2X2A .....	2.05	2051 .....	1.90
3A4 .....	1.20	5633 .....	6.50
3A5 .....	1.95	5634 .....	6.50
5R4GY .....	1.50	5635 .....	6.00
5U4WG .....	6.40	5637 .....	3.75
6AD4 .....	2.20	5638 .....	4.25
6AJ5 .....	3.50	5640 .....	6.50
6AN6 .....	3.50	5641 .....	6.00
6AS6 .....	3.80	5642 .....	4.85
6AS7G .....	6.75	5645 .....	5.50
6BA5 .....	2.85	5646 .....	5.50
6D4 .....	2.85	5647 .....	4.25
6J4 .....	8.05	5679 .....	2.65
6K4 .....	2.85	5645 .....	7.70
6K4A .....	4.85	5691 .....	7.75
6L6GA/Y .....	3.10	5692 .....	7.75
6L6WGA .....	6.40	5693 .....	6.40
6SL7WGT .....	2.85	5722 .....	6.40
6SN7WGT .....	2.85	5845 .....	5.25
6X5WGT .....	2.20	9001 .....	3.10
7AK7 .....	5.25	9002 .....	2.50
7F8W .....	6.40	9003 .....	3.10
7G8 .....	1.85	X6030 .....	3.50
25A7GT .....	4.00		

# SYLVANIA

ELECTRONICS DIVISION

ELECTRONIC PRODUCTS  
1740 BROADWAY, N. Y. 19, N. Y.



SUGGESTED  
TYPE DESCRIPTION RESALE PRICE

**FLASH TUBES**

R-4330	100 watt second Electroflash Tube	\$15.00*
R-4340	500 watt second Electroflash Tube	45.00*

**GAS PRESSURE MEASURING TUBES**

R1111	Pirani Tube	5.00
R1111M	Matched Pairs	
R1111		11.85

**GERMANIUM CRYSTAL DIODES**

1N34	General Purpose Diode	.85
1N34A	General Purpose Diode (Sealed in Glass)	.85
1N35	Twin Matched Diode	2.05
1N38	100-V Back Voltage	1.70
1N39	200-V Back Voltage	11.25
1N40	Varistor—Plug In	10.60
1N41	Varistor—Lug type	11.25
1N42	Varistor—Matched 1N38's	18.75
1N54	High Resistance Diode	.95
1N55	150-V Diode	3.15
1N56	High Conduction Diode	.95
1N57	80-V Diode	.95
1N58	100-V Diode	1.25
1N58A	100-V Diode (Sealed in Glass)	1.25
1N60	Detector Diode	.65

SUGGESTED  
TYPE DESCRIPTION RESALE PRICE

**GLOW MODULATOR TUBES**

R1130B	.055" Crater—(1B59)	\$14.35
R1131A	.093" Crater	14.35

**HYDROGEN THYRATRONS**

4C35	8KV, 90amp peak	25.00
5C22	15KV, 325amp peak	47.50

**SELENIUM RECTIFIERS**

NA-5	65 ma Rectifier	.66
NB-5	75 ma Rectifier	.78
NC-5	100 ma Rectifier	.96
ND-5	150 ma Rectifier	1.17
NE-5	200 ma Rectifier	1.35
NF-5	250 ma Rectifier	1.50
NH-5	350 ma Rectifier	2.15
NJ-5	450 ma Rectifier	2.64

**SILICON CRYSTAL DIODES**

1N21	3000 mc Converter	2.80
1N21A	3000 mc Converter	3.15
1N21B	3000 mc Converter	3.75
1N21C	3000 mc Converter	28.10
1N22	3000-10,000 mc—Instrument Rectifier	3.10
1N23	10,000 mc Converter	3.75
1N23A	10,000 mc Converter	4.40
1N23B	10,000 mc Converter	5.00
1N25	1000 mc High Burn-out Mixer	7.50

SUGGESTED  
TYPE DESCRIPTION RESALE PRICE

1N26	24,000 mc Converter	\$8.10
1N27	Obsolete—Use 1N32	
1N29	Obsolete—Use 1N21B	
1N30	Obsolete—Use 1N31	
1N31	10,000 mc Video Detector	8.10
1N32	3000 mc Video Detector	25.00
1N53	Converter for over 30,000 mc	37.50

**STROBOTRONS**

1D21/SN4	240 PPS V Neon Duo Grid	4.70
R-4350	Polychromatic Strobotron	10.00
SA-309	Small Polychromatic Strobotron	2.95
SN-5	60 PPS 350 V Neon Duo Grid	7.50

**MISCELLANEOUS**

OA5	Trigger Tube (Cold Cathode)	4.40
X-6090	Ionization Tube	2.00
SS501	1500-volt U-Discharge	13.10
1237	Full Wave Argon Rectifier	4.25
SD759A	Ramberg Accelerometer Tube	37.50

\*Includes Federal Excise Tax

## SYLVANIA PANEL LAMPS — Radio Tube Division, Emporium, Pa.

Especially designed for radio dials, tuning meters, flash-tuning arrangements, flashlights, auto panels, pin ball machines.

\*Types S47 and S49 are interchangeable with Types S40A and S49A in any other brand.

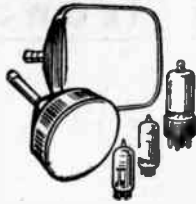
TYPE	VOLTS	AMPERE	BULB	BASE	BEAD
S40	6-8	0.15	T-3¼	Screw	Brown
S41	2.5	0.50	T-3¼	Screw	White
S42	3.2	0.35	T-3¼	Screw	Green
S43	2.5	0.50	T-3¼	Bayonet	White
S44	6-8	0.25	T-3¼	Bayonet	Blue
S45	3.2	0.35	T-3¼	Bayonet	White
S46	6-8	0.25	T-3¼	Screw	Blue
*S47	6-8	0.15	T-3¼	Bayonet	Brown
S48	2.0	0.06	T-3¼	Screw	Pink
*S49	2.0	0.06	T-3¼	Bayonet	Pink
S50	6-8	0.20	G-3½	Screw	White
S51	6-8	0.20	G-3½	Bayonet	White
S55	6-8	0.40	G-4½	Bayonet	White
S291	2.9	0.17	T-3¼	Bayonet	White
S292	2.9	0.17	T-3¼	Screw	White
S1455	18.0	0.25	G-5	Screw	Brown
S1456	18.0	0.25	G-5	Bayonet	Brown

## PRICE SCHEDULE

Net Price Per Carton of 10 Lamps Excluding Excise Tax

40% OFF LIST 10-40 Lamps	40-10% OFF LIST 50-190 Lamps	50% OFF LIST 200 Lamps or More
\$.60	\$.540	\$.50
.60	.540	.50
.72	.648	.60
.60	.540	.50
.60	.540	.50
.72	.648	.60
.60	.540	.50
.60	.540	.50
.90	.810	.75
.90	.810	.75
.60	.540	.50
.48	.432	.40
.48	.432	.40
.78	.702	.65
.78	.702	.65
.72	.648	.60
.72	.648	.60

# SYLVANIA ELECTRIC



# TUNG-SOL

## ELECTRON TUBES

REVISED JULY 1, 1950

This Price List Is Supplied For Your Convenience By The Tung-Sol Lamp Works Inc.

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

Type	Sugg'd Retail Price	Type	Sugg'd Retail Price	Type	Sugg'd Retail Price	Type	Sugg'd Retail Price
0Y4	\$4.80	8B7/1291 Loc.	\$2.65	6BF6 Min.	\$1.65	6SF7 Met.	\$2.00
0Z4 Met.	1.65	8C6/XXB Loc.	3.20	6BG6G	4.80	6SF7GT	1.80
0Z4G	1.65	8D6/1299 Loc.	2.65	6BH6 Min.	2.00	6SG7 Met.	2.00
01A	1.25	8E6 Loc.	2.65	6BJ6 Min.	2.00	6SG7GT	2.20
1A8	2.20	8LF4 Loc.	2.65	6BN6	2.90	6SH7GT	2.20
1A4P	3.90	304 Min.	2.20	6BQ6GT	3.20	6SJ7 Met.	1.65
1A5GT	1.80	3Q5GT	2.40	6C4 Min.	1.65	6SJ7GT	1.65
1A6	3.20	3S4 Min.	2.00	6C5 Met.	1.65	6SK7 Met.	1.65
1A7GT	2.00	3V4 Min.	2.00	6C5GT	1.65	6SK7GT	1.65
1AB5 Loc.	3.20	5AZ4 Loc.	1.35	606	2.00	6SL7GT	2.40
1B3GT	2.65	5T4	3.90	6C7	3.20	6SN7GT	2.20
1B4P (1B4/951)	3.90	5U4G	1.50	6C9G	3.20	6SQ7 Met.	1.50
1B5/25S	3.20	5V4G	2.40	6CB6	2.00	6SQ7GT	1.50
1B7GT	3.20	5W4 Met.	1.65	606	1.65	6SR7 Met.	1.50
1C5GT	2.20	5W4GT	1.65	6D8G	3.20	6SR7GT	1.80
1C6	3.20	5X4G	1.80	6E5	2.20	6SS7 Met.	1.80
1C7G	3.20	5Y3G	1.05	6F5 Met.	1.65	6ST7 Met.	2.65
1C8	2.20	5Y3GT	1.05	6F5GT	1.65	6SV7 Met.	2.90
1D5GP	3.90	5Y4G	1.50	6F6 Met.	2.00	6SZ7 Met.	2.20
1D7G	3.20	5Z3	1.80	6F6G	1.65	6T5	3.20
1D8GT	3.90	5Z4 Met.	2.65	6F6GT	1.65	6T7G (6Q6G)	3.20
1E5GP	3.90	6A8	3.20	6F7	3.20	6T8 Min.	2.90
1E7GT	3.90	6A4 (LA)	3.20	6F8G	3.20	6U5/6G5	2.00
1F4	2.65	6A5G	3.90	6G6G	2.65	6U6GT	2.00
1F5G	2.65	6A6	2.65	6H4GT	2.65	6U7G	1.80
1F6	3.90	6A7	2.00	6H6 Met.	1.65	6V6 Met.	3.20
1F7G	3.90	6A8 Met.	2.00	6H6GT	1.65	6V6GT	2.00
1G4GT	2.65	6A8G	2.00	6J5 Met.	1.50	6V7 Met.	3.20
1G5G	2.65	6A8GT	2.00	6J5GT	1.50	6V7G	1.80
1G6GT	2.65	6AB4	2.00	6J6 Min.	2.90	6W4GT	1.80
1H4G	2.20	6AB5/6N5	2.65	6J7 Met.	2.00	6W7G	2.65
1H5GT	1.65	6AB8G	3.20	6J7GT	2.00	6X4 Min.	1.50
1H6G	3.20	6AB7/1858 Met.	3.20	6J8G	3.20	6X5 Met.	2.65
1J5G	2.65	6AC6GT	2.90	6K5G	1.50	6X5GT	1.50
1J6GT	3.20	6AC8GT	1.50	6K5GT	2.40	6Y8G	3.90
1L4 Min.	2.00	6AC7/1852	2.90	6K6G	1.50	6Y8G	2.40
1LA4 Loc.	2.65	6AD6G	2.20	6K6GT	1.50	6Y7G	2.20
1LA6 Loc.	2.65	6AD7G	3.20	6E7 Met.	1.65	6Z5/12Z5	3.20
1LB4 Loc.	2.65	6AE6G	1.80	6E7G	1.65	6Z7G	3.90
1LC5 Loc.	2.65	6AE7GT	1.80	6K7GT	1.65	6ZY5G	2.20
1LC6 Loc.	2.65	6AF5G	1.80	6K8G	2.90	7A4/XXL Loc.	2.00
1LD5 Loc.	2.65	6AF6G	2.65	6K8GT	2.40	7A5 Loc.	2.20
1LE3 Loc.	2.65	6AG5 Min.	2.65	6L5G	2.65	7A6 Loc.	1.80
1LG5 Loc.	2.65	6AG7 Met.	3.20	6L6 Met.	3.55	7A7 Loc.	1.80
1LH4 Loc.	2.65	6AH6 Min.	3.90	6L6G	2.90	7A8 Loc.	1.80
1LN5 Loc.	2.65	6AH7GT	2.20	6L6GA	2.90	7AD7 Loc.	3.20
1NSGT	2.00	6AK5 Min.	3.90	6L7 Met.	2.40	7AF7 Loc.	1.80
1N6G	1.80	6AK6 Min.	2.40	6L7G	2.90	7AG7 Loc.	2.20
1P6GT	2.65	6AL5 Min.	2.00	6N6G	3.90	7AH7 Loc.	2.20
1Q5GT	2.65	6AL7GT	2.65	6N7 Met.	2.40	7B4 Loc.	1.80
1Q6	2.20	6AQ5 Min.	2.00	6N7GT	2.40	7B5 Loc.	1.80
1R5 Min.	2.00	6AQ6 Min.	1.80	6P5GT	2.40	7B6 Loc.	1.80
1S4 Min.	2.40	6AQ7GT	2.40	6P7G	3.20	7B7 Loc.	1.80
1S5 Min.	1.80	6AR5	1.65	6Q7 Met.	2.00	7B8 Loc.	1.80
1T4 Min.	2.00	6AT6 Min.	1.50	6Q7GT	1.80	7C4/1208 Loc.	2.65
1T6GT	2.65	6AS5	2.00	6R6G	3.90	7C5 Loc.	1.80
1U4 Min.	2.00	6AU6 Min.	1.80	6R7 Met.	2.65	7C6 Loc.	1.80
1U5 Min.	1.80	6AV6 Min.	1.50	6R7GT	2.65	7C7 Loc.	1.80
1V	2.20	6AX5GT	1.35	6S4	1.65	7E5/1201 Loc.	2.65
1V5 Min.	2.20	6B4G	3.20	6S7 Met.	2.65	7E6 Loc.	2.20
1X2	2.65	6B5	3.20	6S7G	3.20	7E7 Loc.	2.65
1W5 Min.	2.20	6B6G	2.20	6S8GT	2.65	7F7 Loc.	2.20
2A3	3.20	6B7	3.20	6SA7 Met.	1.65	7F8 Loc.	2.65
2A4G	3.20	6B8 Met.	3.20	6SA7GT	1.65	7G7/1232 Loc.	2.65
2A5	2.20	6B8G	3.20	6SB7Y	2.40	7H7 Loc.	2.00
2A6	2.65	6BA6 Min.	1.80	6SC7 Met.	2.00	7J7 Loc.	2.65
2A7	2.65	6BA7 Min.	2.40	6SC7GT	2.00	7K7 Loc.	2.65
2B7	2.65	6BC5	2.00	6SD7GT	2.90	7L7 Loc.	2.65
2E6	2.65	6BD6 Min.	2.00	6SF5 Met.	1.65	7N7 Loc.	2.20
8A8GT	4.80	6BE6 Min.	1.80	6SF5GT	1.65	7Q7 Loc.	1.80

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Bold Face Type — represent 86.5% of Demand

# TUNG-SOL ELECTRON TUBES (con.)

Type	Sugg'd Retail Price	Type	Sugg'd Retail Price	Type	Sugg'd Retail Price	Type	Sugg'd Retail Price
7R7 Loc.	\$2.20	12SR7GT	\$2.20	35Y4 Loc.	\$1.80	117Z6GT	\$2.40
7S7 Loc.	2.65	12Z3	2.65	35Z3 Loc.	1.80	488/183	2.65
7V7 Loc.	2.65	12Z6/6Z5	3.20	85Z4GT	1.50	485	2.65
7W7 Loc.	2.65	14A4 Loc.	2.65	35Z5GT	1.25	FM1000	3.20
7X6	2.20	14A5 Loc.	3.90	35Z6G	1.80	XXB/8C6	3.20
<b>7X7 Loc. (XXFM)</b>	<b>2.65</b>	<b>14A7/12B7 Loc.</b>	<b>2.20</b>	<b>35Z6GT</b>	<b>1.80</b>	<b>XXD/14AF7</b>	<b>2.20</b>
7Y4 Loc.	1.80	14AF7 Loc. (XXD)	2.40	86	2.65	XXFM/7X7	2.65
7Z4 Loc.	1.80	14B6 Loc.	2.20	87	1.80	XXL/7A4	1.80
10	3.90	14B8 Loc.	2.20	88	2.20		
12A5	3.20	14C5 Loc.	2.65	89/44	2.65		
<b>12A6 Met.</b>	<b>2.65</b>	<b>14C7 Loc.</b>	<b>2.40</b>	<b>41</b>	<b>1.65</b>		
12A6GT	2.90	14E6 Loc.	2.20	42	1.65		
12A7	3.20	14E7 Loc.	2.65	43	1.65		
12A8GT	2.00	14F7 Loc.	2.20	45	1.65		
12AH6GT	2.20	14F8 Loc.	2.65	45Z3 Min.	1.80		
<b>12AH7GT</b>	<b>2.65</b>	<b>14H7 Loc.</b>	<b>2.20</b>	<b>45Z5GT (40Z5GT)</b>	<b>1.80</b>		
12AL5 Min.	2.00	14J7 Loc.	2.65	46	2.65		
12AT6 Min.	1.50	14N7 Loc.	2.65	47	2.40		
12AT7 Min.	2.90	14Q7 Loc.	2.20	48	3.90		
12AU6 Min.	2.00	14R7 Loc.	2.65	49	2.65		
<b>12AU7 Min.</b>	<b>2.40</b>	<b>14S7 Loc.</b>	<b>2.65</b>	<b>50</b>	<b>3.90</b>		
12AV6 Min.	1.50	14W7 Loc.	2.65	50A5 Loc.	2.20		
12AX7 Min.	2.40	14Y4 Loc.	2.40	50B5 Min.	2.00		
12AW6 Min.	2.65	15	3.20	50C5 Min.	2.00		
12AY7	6.00	19	3.20	50C6G	2.90		
<b>12BA6 Min.</b>	<b>1.80</b>	<b>19BG6G</b>	<b>6.00</b>	<b>50L6GT</b>	<b>1.65</b>		
12BA7 Min.	2.40	19J6	3.20	50X6 Loc.	2.20		
12BD6 Min.	2.00	19T8 Min.	2.90	50Y6GT	1.80		
12BE6 Min.	1.80	22	3.20	50Y7GT	2.00		
12BF6 Min.	1.65	24A	2.20	50Z7G	1.80		
<b>12C8 Met.</b>	<b>3.20</b>	<b>25A6 Met.</b>	<b>3.20</b>	<b>52</b>	<b>3.90</b>		
12E5GT	2.20	25A6G	2.65	53	2.65		
12F5GT	1.80	25A6GT	2.65	55	2.20		
12H6 Met.	1.80	25AC5GT	2.90	56	1.80		
12J5GT	1.50	25B5	3.20	57	2.00		
<b>12J7GT</b>	<b>2.00</b>	<b>25B6G</b>	<b>4.80</b>	<b>58</b>	<b>2.00</b>		
12K7GT	1.65	25BQ6GT	3.20	59	3.55		
12K8 Met.	2.40	26C6G	2.90	70A7GT	3.90		
12K8GT	2.40	25L6 Met.	3.20	70L7GT	3.90		
12Q7GT	1.80	25L6GT	1.65	71A	2.00		
<b>12S8GT</b>	<b>2.65</b>	<b>25N6G</b>	<b>3.90</b>	<b>75</b>	<b>1.65</b>		
12SA7 Met.	1.65	25W4GT	2.00	76	1.65		
12SA7GT	1.65	25Y5	2.90	77	1.65		
12SC7 Met.	2.20	25Z5	1.50	78	1.65		
12SF6 Met.	1.80	25Z6 Met.	2.20	79	2.65		
<b>12SF5GT</b>	<b>2.00</b>	<b>25Z6GT</b>	<b>1.35</b>	<b>80</b>	<b>1.15</b>		
12SF7	2.00	26	1.80	81	3.90		
12SF7GT	2.00	27	1.50	82	2.65		
12SG7 Met.	2.00	30	2.00	83	2.65		
12SH7 Met.	2.20	31	2.65	83V	3.20		
<b>12SH7GT</b>	<b>2.20</b>	<b>32</b>	<b>3.55</b>	<b>84/6Z4</b>	<b>1.80</b>		
12SJ7 Met.	1.65	82L7GT	3.20	85	2.20		
12SJ7GT	1.65	83	3.20	89	2.20		
12SK7 Met.	1.65	84	3.20	99V	3.90		
12SK7GT	1.65	85/61	2.00	99X	3.90		
<b>12SL7GT</b>	<b>2.40</b>	<b>35A5 Loc.</b>	<b>1.80</b>	<b>117L7/M7GT</b>	<b>3.90</b>		
12SN7GT	2.20	35B5 Min.	2.00	117N7GT	3.90		
12SQ7 Met.	1.50	35C6 Min.	2.00	117P7GT	3.90		
12SQ7GT	1.50	35L6GT	1.65	117Z3 Min.	1.50		
12SR7 Met.	2.20	35W4 Min.	1.25	117Z4GT	2.90		

## CATHODE RAY PICTURE TUBES

7JP4	\$22.50
8BP4	27.75
10BP4	31.00
10BP4A	31.00
12LP4	32.00
12LP4A	32.00
14BP4	35.00
16AP4	53.50
16RP4	49.00
16TP4	49.00

## SPECIAL PURPOSE TUBES

OA2	\$3.20
OB2	3.55
OB3	1.35
OC3	1.35
OD3	1.30
2E22	6.00
2X2A	4.35
2V3G	3.15
3A4	1.20
3A5	1.95
5A6	5.50
5R4GY	2.25
5X3	3.50
6AJ5	3.50
6AN6	3.50
6AR6	5.75
6AS7G	6.75
6SU7GT	4.25
807	4.00
964	5.65
956	3.60
956	6.30
1808	7.40
1825	2.65
1826	1.85
1829	1.40
25A7GT	3.50
5687	6.00
9002	2.50
9003	3.10
9006	1.60

Bold Face Type — represent 86.5% of Demand

## TUNG-SOL RADIO DIAL LAMPS

Tung-Sol Lamp No.	Bulb Type	Base	Bead Color	Volts	Ampers	List Price
40	T-8 1/4	Miniature Screw	Brown	6-8	.15	\$0.10
41	T-8 1/4	Miniature Screw	White	2.5	.50	.10
42	T-8 1/4	Miniature Screw	Green	3.2	.50	.12
43	T-8 1/4	Miniature Bayonet	White	2.5	.50	.10
44	T-8 1/4	Miniature Bayonet	Blue	6-8	.25	.10
45	T-8 1/4	Miniature Bayonet	Green	3.2	.50	.12
46	T-8 1/4	Miniature Screw	Blue	6-8	.25	.10
47	T-8 1/4	Miniature Bayonet	Brown	6-8	.15	.10
48	T-8 1/4	Miniature Screw	Pink	2.0	.06	.15
49	T-8 1/4	Miniature Bayonet	Pink	2.0	.06	.15
50	G-8 1/2	Miniature Screw	White	6-8	.20	.10
51	G-8 1/2	Miniature Bayonet	White	6-8	.20	.08
55	G-4 1/2	Miniature Bayonet	White	6-8	.40	.08
291	T-8 1/4	Miniature Bayonet	White	2.9	.17	.13
292	T-8 1/4	Miniature Screw	White	2.9	.17	.13
416	G-4 1/2	Miniature Bayonet	Black	8.8	.60	.37
1490	T-8 1/4	Miniature Bayonet	White	8.2	.16	.11

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# NATIONAL UNION

# ELECTRON TUBES PANEL LAMPS

EFFECTIVE JULY 1, 1950

## "VIDEOTRONS" TV PICTURE TUBES

TYPE	DESCRIPTION	USER'S PRICE	TYPE	DESCRIPTION	USER'S PRICE
NU-16TP4	16" RECTANGULAR FACE Direct View	\$49.00	NU-14BP4	14" RECTANGULAR FACE Direct View	\$35.00
NU-16KP4	16" RECTANGULAR FACE Direct View	49.00	NU-12LP4A	12 1/2" CIRCULAR FACE Direct View	32.00
NU-16JP4A	16" CIRCULAR FACE Direct View	46.00	NU-10BP4A	10" CIRCULAR FACE Direct View	31.00
NU-16DP4A	16" CIRCULAR FACE Direct View	46.00	NU-8BP4	8 1/2" CIRCULAR FACE Direct View	27.75
NU-16AP4	16" CIRCULAR FACE Direct View	53.50	NU-7JP4	7" CIRCULAR FACE Direct View	22.50
NU-14CP4	14" RECTANGULAR FACE Direct View	35.00	NU-TP400A	4" CIRCULAR FACE Projection	63.00

## TRANSMITTING TUBES

TYPE	DESCRIPTION	SUGGESTED USER'S PRICE	TYPE	DESCRIPTION	SUGGESTED USER'S PRICE	TYPE	DESCRIPTION	SUGGESTED USER'S PRICE
2C34/RK34	Twin Triode Power Amp.	\$ 3.50	802	Power Amp. Pentode	\$ 4.75	832A	U.H.F. Beam Power Amp.	\$11.75
2E24	VHF Beam Power Amp.	5.10	803	Power Amp. Pentode	24.50	834	U.H.F. Power Amp. Triode	14.50
3B24	Diode Vacuum Rectifier	7.50	804	Power Amp. Pentode	17.50	836	H.W.-H.V. Rectifier	8.25
3B25	H.W. Gas Rectifier	6.40	805	Power Amp. Os. Triode	13.50	837	Power Amp. Pentode	4.75
3E29	U.H.F. Beam Power Amp.	20.25	806	Power Amp. Triode	34.25	838	Power Amp. Triode	13.75
HV18	Power Amp. Triode	25.00	807	Beam Power Amp.	2.50	843	Power Amp. Triode	2.30
KU23	Triode Amplifier	30.00	808	Power Amp. Osc. Triode	10.75	845	A.F. Power Amp. Triode	13.75
T55	Triode Amplifier	7.50	809	Power Amp. Mod. Triode	4.00	852	Power Amp. Triode	32.00
W700	Triode Amplifier	7.50	S10	Power Amp. Mod. Triode	14.50	865	Tetrode Amp.	11.50
UE100	Triode Amplifier Osc.	15.00	S11	High Mu Triode	3.50	866A	H.W.-M.V. Rectifier	1.95
100TH	High Mu Triode	16.65	S12	Low Mu Triode	3.30	866JR	H.W.-M.V. Rectifier	1.30
200	Power Amp. Triode	25.00	S12H	R.F. Amp. Osc. Mod. Triode	7.50	872A	H.W.-M.V. Rectifier	8.20
203A	Power Amp. Osc. Triode	13.75	S13	Beam Power Amp.	16.00	873	H.W.-M.V. Rectifier	17.25
211	Power Amp. Osc. Triode	13.75	S14	Beam Power Amp.	14.25	973	H.W.-M.V. Rectifier	17.25
217C	H.W.-H.V. Rectifier	21.50	S15	U.H.F. Beam Power Amp.	6.90	975A	Diode Gas Rectifier	25.00
Z225/866A	H.W.-H.V. Rectifier	1.95	S16	H.W. Mercury Vapor Rect.	1.30	1616	H.W.-H.V. Rectifier	8.65
300	Power Amp. Triode	29.50	S26	U.H.F. Med. Mu. Triode	12.50	1624	Beam Power Amp.	4.00
371B	H.W.-H.V. Rectifier	14.50	S28	Beam Power Amp.	13.75	1625	Beam Power Amp.	2.65
575A	H.W.-M.V. Rectifier	24.25	S29B	U.H.F. Beam Power Amp.	16.25	1626	Low Mu. Amp.	1.85
801A	Power Amp. Triode	3.75	S30B	Power Amp. Triode	11.50	8005	Power Amp. Triode	7.40
						8020	H.W.-H.V. Rectifier	22.00

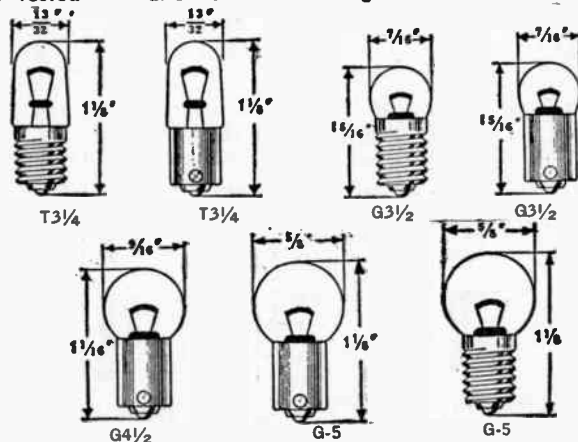
## SPECIAL PURPOSE TUBES

TYPE	DESCRIPTION	SUGGESTED USER'S PRICE	TYPE	DESCRIPTION	SUGGESTED USER'S PRICE	TYPE	DESCRIPTION	SUGGESTED USER'S PRICE
0A2	Cold Cth. Volt. Reg. (Min)	\$ 4.35	3D22	Grid Cont. Gas Rect.	\$13.25	884	Thyratron Triode	\$ 1.85
0A3/VR75	Diode Voltage Regulator	2.65	4B26/2000	H.W. Gas Rectifier	9.85	885	Grid Controlled Gas Rect.	2.00
0A4G	Cold Cath. Gas Triode	2.65	5R4GY	F.W. Hi. Vac. Rectifier	1.50	955	Triode Amplifier (Acn)	3.60
0B2	Voltage Regulator (Min)	4.35	6AK5	Sharp Cutoff R.F. Pent (Min)	3.90	967	Thyratron Triode	6.50
0B3/VR90	Diode Voltage Regulator	2.65	6AS7G	Twin Power Triode—Low Mu	6.75	R1038	Ionization Gauge	29.50
0C3/VR105	Diode Voltage Regulator	2.65	6D4	Thyratron (Min)	2.85	1620	Pentode Det. Amp.	6.60
0D3/VR150	Diode Voltage Regulator	2.65	6J4	UHF Triode Amp	8.05	1621	Power Amp. Pentode	2.50
0Z4A/1003	F.W. Gas Rectifier	1.20	6K4A	Gen. Purpose Triode (Sub Min)	4.25	1622	Beam Power Amp.	2.30
2A4G	Thyratron	4.80	12L8GT	Twin Pent. Power Amp.	2.25	1654	H.W.-H.V. Rectifier	4.55
2C53	High Mu Triode Amp.	12.00	FG17	Thyratron Triode	6.50	2050	Grid Cont. Gas Rect.	1.85
2D21	Thyratron Gas (Min)	2.00	25A7GT	Pwr. Pent. and H.W. Rect.	3.50	2051	Grid Cont. Gas Rect.	1.90
2V3G	Half Wave Rectifier	3.15	28D7	Twin Beam Power Amp.	1.80	9001	U.H.F. Pent. Det. Amp. (Min)	3.10
2X2A	High Volt H.W. Rect.	4.35	311CH	High Voltage Triode	19.00	9002	U.H.F. Triode (Min)	2.50
3A4	Power Amp. Pent. (Min)	1.20	878	H.W. High Vac. Rectifier	12.75	9003	U.H.F. Pent. Remote C.O. (Min)	3.10
						9006	U.H.F. Diode Rect. (Min)	1.60

Tubes here listed represent the faster moving types and are maintained for prompt delivery. This list is continually being supplemented and inquiries are therefore invited on any types not shown.

## PANEL LAMPS • Shock Tested • Torque Tested • Life Tested • Brighter Service—Longer

TYPE NO.	Rated Volts	Amps.	Base	Bead Color	Bulb Style	LIST PRICE†
N-13	3.8	.30	Screw	Green	G3 1/2	\$.10
N-14	2.5	.30	Screw	Blue	G3 1/2	.10
N-40*	6-8	.15	Screw	Brown	T3 1/4	.10
N-40A	6-8	.15	Bayonet	Brown	T3 1/4	.10
N-41*	2.5	.50	Screw	White	T3 1/4	.10
N-42	3.2	.35	Screw	Green	T3 1/4	.12
N-43	2.5	.50	Bayonet	White	T3 1/4	.10
N-44*	6-8	.25	Bayonet	Blue	T3 1/4	.10
N-45	3.2	.35	Bayonet	Green	T3 1/4	.12
N-46*	6-8	.25	Screw	Blue	T3 1/4	.10
N-47*	6-8	.15	Bayonet	Brown	T3 1/4	.10
N-48	2.0	.06	Screw	Pink	T3 1/4	.15
N-49	2.0	.06	Bayonet	Pink	G3 1/2	.15
N-50*	6-8	.20	Screw	White	G3 1/2	.10
N-51*	6-8	.20	Bayonet	White	G3 1/2	.09
N-55*	6-8	.40	Bayonet	White	G4 1/2	.09
N-292	2.9	.17	Screw	White	T3 1/4	.13
N-291	2.9	.17	Bayonet	White	T3 1/4	.13
N-292A	2.9	.17	Bayonet	White	T3 1/4	.13
N-1455	18.0	.25	Screw	Brown	G5	.12
N-1455A †	18.0	.25	Bayonet	Brown	G5	.12
N-1456 †	18.0	.25	Bayonet	Brown	G5	.12
N-1490	3.2	.16	Bayonet	White	T3 1/4	.11



PACKING: 10 Lamps to the Unit Carton. 20 Unit Cartons (200 lamps) to the Standard Package.

\*Used also in Coin Operated Machines. †Used also in Toy Trains.

All prices and types on this page subject to change and/or withdrawal without notice.



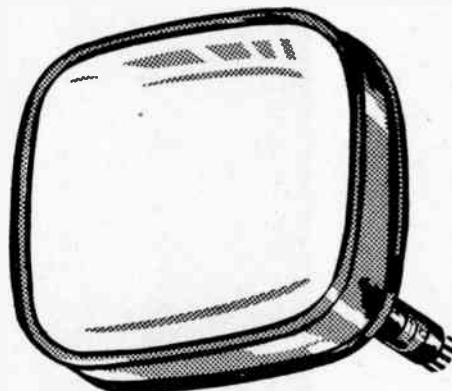
The finest in Electronics  
CATHODE RAY TUBES  
TRANSMITTING TUBES  
RECTIFIERS

## They're RECTANGULAR!

### The NEW General Electronics 14-BP4 and 16-TP4

Rectangular tubes are the newest members of the General Electronics family of cathode ray tubes. 14" and 16" rectangular tubes are designed to save you money and cabinet space. Using approximately the same space as our 10-BP4 and 12-LP4 — they answer the demand for economical and compact TV set design.

Like all General Electronics Cathode Ray tubes — they have the famous "Vacuum Baked Screen." For a better contrast, brighter image, longer tube life — choose "the screen that's good to your eyes."

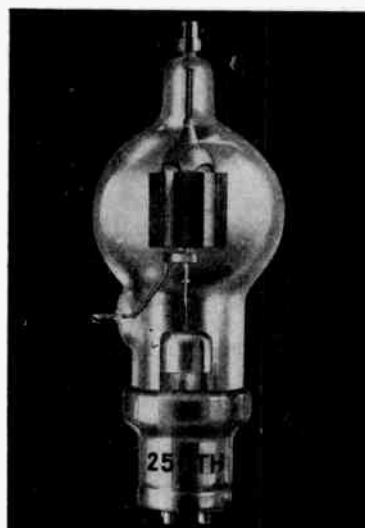


Ask today for prices and further facts about these fine General Electronics cathode ray tubes . . . the 16-TP4 and 14-BP4

## General Electronics POWER TUBES

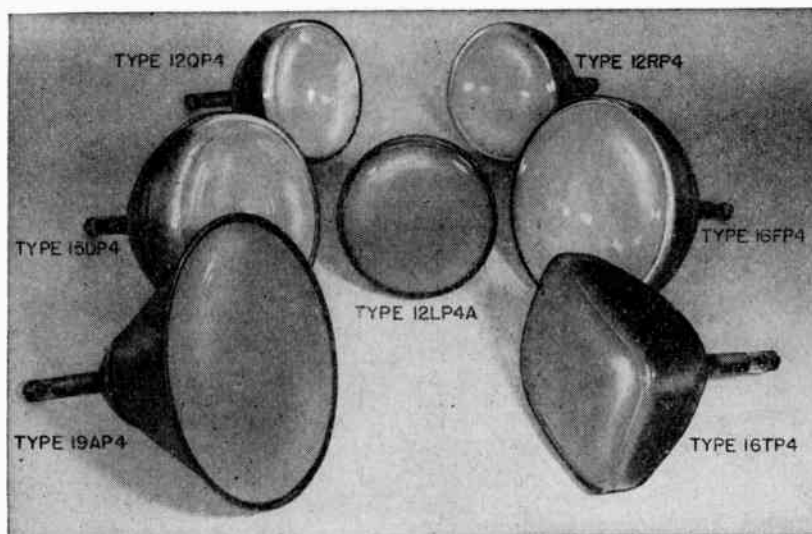
These are some of the power tubes on which we hold Jan type approval:

- DR-250th Amp. osc. mod. (Hi Mu Triode)
- DR-809 R.F. Amp. Osc. Mod. Triode
- DR-3B29 High Vacuum Clipper Diode
- DR-808 RF Amp. Osc. Modulator Triode
- DR-715C Pulse Amp Tetrode rated for inductive load application
- DR-3E29 Transmitting twin pentode amp.



For prices and further facts about these fine  
General Electronics Tubes write, today, to . . .  
**GENERAL ELECTRONICS INC.**  
101 HAZEL STREET • PATERSON 3, N. J.

# Du Mont Television Picture Tubes . . . . . . . . WORTH LOOKING INTO!!



That's the smiling new enthusiasm your customer will have about his old television receiver because its faded picture has been replaced with television luxury — a Du Mont Teletron; or maybe its picture has been enlarged from snapshot-size to one of the Du Mont portrait sizes.

Du Mont Teletrons worth looking into from your point of view too, because at NO EXTRA COST, you give your customer what he wants — new confidence in his old receiver. He knows that Du Mont leadership is founded on pioneering craftsmanship in the cathode-ray tube art. The confidence he has in Du Mont is YOURS when his television picture is "worth looking into."

Whether it's replacement or conversion, you'll find

## DU MONT TUBE TYPES

Type	Description	Dimensions	Price
12QP4	First 12½" tube to employ bent-gun ion trap.	Overall Length ..... 17½" Diameter ..... 12-7/16"	\$24.00
12QP4A	Same as Type 12QP4 but employs gray filter face plate.	Overall Length ..... 17½" Diameter ..... 12-7/16"	\$24.00
12RP4	Direct replacement for Type 12JP4. Adds advantage of the Bent-Gun.	Overall Length ..... 17½" Diameter ..... 12-3/16"	\$23.50
12LP4A	Universal replacement for all Type 12LP4. Employs bent-gun and gray filter face plate.	Overall Length ..... 18¾" Diameter ..... 12½"	\$24.00
15DP4	Highly popular in medium-priced television receivers.	Overall Length ..... 20½" Diameter ..... 15½"	\$34.00
16FP4	Mounting ease in a light, all-glass 16" tube. Popular conversion type.	Overall Length ..... 20¼" Diameter ..... 16½"	\$34.50
16TP4	Rectangular tube with 13½" x 10½" picture. Employs gray filter face plate.	Overall Length ..... 18½" Diameter ..... 16½"	\$37.00
19AP4	Largest direct view picture, with bent-gun, short-neck design. A Du Mont television luxury exclusive.	Overall Length ..... 21½" Diameter ..... 18½"	\$62.00
19AP4A	Same as Type 19AP4 but employs gray filter face plate.	Overall Length ..... 21½" Diameter ..... 18½"	\$62.00
14CP4 } 14FP4 }	14" Rectangular—Used in conversion of 10" round-tube sets.	Overall Length ..... 16½" Diagonal ..... 12¾"	\$27.00
17AP4	17" Rectangular—Featuring all the advantages of rectangular tube with 150 sq. inches of screen.	Overall Length ..... 18½" Diagonal ..... 16¾"	\$40.00

**TUBE DIVISION, ALLEN B. DU MONT LABORATORIES, INC.**

# CETRON ELECTRONIC TUBES



Engineered and Manufactured by Continental Electric Co.

## CETRON PHOTOTUBES

CETRON phototubes are either of the gas-filled or of the vacuum type. With the gas-filled type, greater effective response is obtained, particularly in low impedance circuits, while the vacuum type is recommended where maximum stability is desired.

CETRON phototubes are selected as to their sensitivity and priced accordingly. Phototubes of the Super Class A/B or Q are generally used for experimental purpose where very high sensitivities are required; Class C or R mostly for motion picture equipment; Class D for relay work, etc.

## CETRON RED SENSITIVE PHOTOTUBES

CETRON red sensitive phototubes are available in three sensitivity classes, A/B, C and D. The CETRON gas-filled red sensitive tubes comprise the most complete line of phototubes designed for sound reproduction. For complete engineering specifications, write for our PC 8/9.

## CETRON BLUE SENSITIVE PHOTOTUBES

CETRON blue sensitive phototubes are available in two sensitivity classes, Q and R. The gas-filled CETRON blue sensitive tubes comprise a most complete line for sound reproduction work from dye recorded film. For complete engineering specifications, write for our PC 8/9.

## CETRON LEAD SULFIDE PHOTOCELLS

CETRON lead sulfide photo conductive cells are made in a variety of miniature types. They are also available in a variety of sensitive areas and resistances. CETRON lead sulfid photocells are available in three sensitivity classes, A, C and D. For complete engineering specifications, write for our lead sulfide literature.

Continental Electric also manufactures a complete line of special purpose photocells, such as the CE-5, CE-7, CE-8, CE-10, CE-12, CE-15, CE-18, CE-26, etc. We will be happy to work with you on design and development problems, also on any special phototubes your application may require. Full data, price, etc. on special phototubes will be forthcoming upon request.

## LIST PRICES

### RED SENSITIVE TYPES, GAS-FILLED, RMA SPECTRAL RESPONSE S1.

Type	Class A/B	Class C	Class D	Replaces No.
CE-1	\$6.20	\$4.10	\$2.50	868 918 PJ-23 WL-735
CE-2	8.50	5.50	3.30	WL-737 1P32
CE-3	8.50	5.50	3.30	WL-728 WE-3A 1P13
CE-4	8.50	5.50	3.30	1P36
CE-21		5.60	3.60	920
CE-22		4.00	2.40	1P41
CE-23	5.50	2.90	1.75	923
CE-B25	10.00	5.50	2.50	927, 1P42
CE 30	5.50	2.80	1.50	930
CE-36	10.00	5.50	2.50	—

### RED SENSITIVE TYPES, VACUUM, RMA SPECTRAL RESPONSE S1.

Type	Class A/B	Class C	Class D	Replaces No.
CE-1V	\$8.50	\$4.20	\$2.60	PJ-22 WL-734
CE-2V	8.50	5.50	3.30	—
CE-4V	8.50	5.50	3.30	—
CE-11V	12.00	5.00	3.00	917
CE-25V	12.00	5.00	3.00	—
CE-30V	5.50	2.80	1.85	925
CE-31V	12.00	5.00	3.00	919

### BLUE SENSITIVE TYPES, GAS-FILLED, RMA SPECTRAL RESPONSE S4

Type	Class Q	Class R	Replaces No.
CE-59	\$9.00	\$3.80	5581
CE-64	9.00	3.60	5588
CE-74	9.00	5.50	—
CE-88	18.00	5.50	—
CE-91	9.00	3.00	1P87
CE-97	13.00	8.50	—

### BLUE SENSITIVE TYPES, VACUUM, RMA SPECTRAL RESPONSE S4

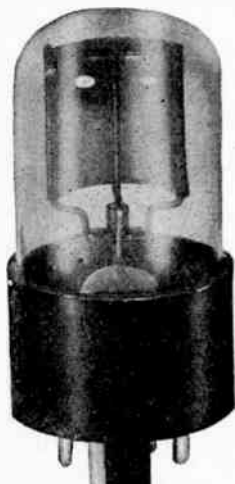
CE-29	\$9.00	\$1.80	929 1P89
CE-34	9.00	3.80	934
CE-61	9.00	6.00	GL 441
CE-99	13.00	6.20	—



CE-1  
CE-91



CE-B25



CE-30

## MINIATURE TYPES

### LEAD SULFIDE TYPES

CE-701 Side Type	\$10.00
CE-702 Side Type	10.00
CE-703 End Type	10.00
CE-704 Double Side Type	15.00
CE-711 Three-Pin Side Type	10.00

### BLUE TYPES, RMA S4

CE-60 Vacuum Side Type:	
Class Q	\$10.00
Class R	4.00
CE-90 Gas Side Type:	
Class Q	10.00
Class R	4.00



CE-701



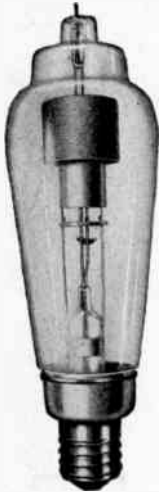
CE-702



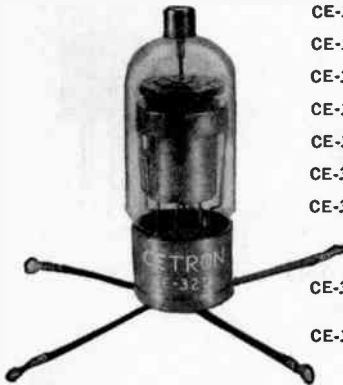
# CETRON ELECTRONIC TUBES



Engineered and Manufactured by Continental Electric Co.  
**CETRON RECTIFIER and GRID CONTROL TUBES**



Type New No.	Old No.	Description	List Price	Data Sheet No.
CE-200A	CE-200	1/2 amp. full wave mercury vapor 250 volts DC with standard 4 pin base	\$ 7.75	111
CE-201A	CE-201	2 amp. full wave mercury vapor 250 volts DC with special 4 long pin base.	8.00	111
CE-202B	CE-202	15 amp. half wave mercury vapor 250 volts DC mogul Screw base	30.00	108
CE-203	—	15 amp. half wave mercury vapor 150 volts DC Mogul Screw base	10.50	104
CE-205	2-RA-5	5 amp. half wave mercury vapor 250 volts DC Mogul Screw base	12.60	105
CE-206	2-RA-6	6 amp. half wave mercury vapor 90 volts DC Mogul Screw base	5.00	106
CE-210A	OE-210	2 amp. full wave mercury vapor and gas 250 volts D.C. with standard 4 pin base.	7.75	181
CE-212A	OE-212	2 amp. half wave gas filled 60 volts DC Medium Screw Base	4.00	120
CE-213A	CE-213	2 1/2 amp. half wave mercury vapor 600 volts DC standard 4 pin base	6.90	107
CE-215	2-RA-15	15 amp. half wave mercury vapor 75 volts DC Mogul Screw base	9.50	108
CE-220	CE-72	.020 amp. 20,000 half wave high vacuum, rect. tubes. Stand. 4 pin base.	5.50	118
CE-221	4B25	6.4 amp. full wave gas filled 200 volts DC special 4 pin base	16.90	125
CE-224	4B24	2.5 amp. full wave gas filled 200 volts DC No. 412 4 pin base	11.80	124
CE-226	R-6-A	6 amp. half wave gas filled 90 volts DC Mogul Screw base	5.00	112
CE-230	3B24	.060 amp. 20,000 half wave high vacuum rect. med. 4 pin base	12.00	128
CE-235	R-15-A	15 amp. half wave gas filled 60 volts DC Mogul Screw base	10.00	109
CE-235A	—	15 amp. half wave gas filled 60 volts DC Mogul Screw base and flexible anode lead.	10.00	109
CE-303	8C31	1 amp. grid control tube, gas filled standard 4 pin base	15.65	114
CE-304	—	12.5 amp. grid control mercury vapor 125 amp. peak current No. 4310 4 pin ind. base.	74.75	119
CE-305	—	2 amp. grid control tube, gas filled, standard 4 pin base	20.20	116
CE-308	—	6 amp. grid control tube, gas filled, 40 amp. peak current, 4 pin base No. 412.	25.00	122
CE-309	FG17	.5 amp. grid control tube mercury vapor 5000 peak inverse med. 4 pin base	6.60	126
CE-311	8C23	1.50 amp. grid control tube mercury and gas filled 1000 peak inverse med. 4 pin base	13.25	127
CE-393A	—	1.50 amp. grid control tube mercury and gas filled 1250 peak inverse med. octal base	13.25	127
CE-320	—	2.5 amp. grid control tube mercury vapor and gas filled 1250 peak inverse. Medium 4 pin base	14.20	134
CE-322	—	6.4 amp. grid control tube mercury vapor and gas filled 1500 peak inverse. 4 pin base No. A4-18	21.65	135
CE-323B	—	1.5 amp. grid control tube mercury vapor and gas filled 1250 peak inverse. Medium 5 pin base	13.25	133
CE-329	—	8 amp. grid controlled, gas filled, indirectly heated, short deionization time, peak inverse 1250V, flexible leads.	45.00	137
CE-330	—	5 amp. grid controlled, gas filled, indirectly heated, short deionization time, peak inverse 1250V, flexible leads.	50.00	138
CE-331	—	10 amp. grid controlled, gas filled, indirectly heated, short deionization time, peak inverse 1250V, flexible leads.	95.00	139



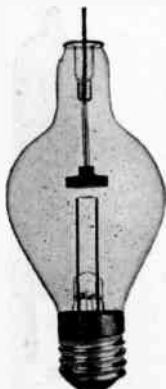
CE-329

Detailed engineering specifications on all tubes are available upon request. The extensive engineering and manufacturing facilities which we have made possible the development and production of many types of special tubes to your specifications. If you have a problem involving the use of any CETRON tubes you are invited to consult us.

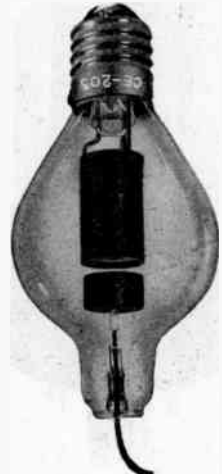
## WARRANTY

We guarantee all products manufactured by us to be free from all material and manufacturing defects and to give satisfactory service when operated in accordance with instructions indicated for their use.

Continental Electric Co.



CE-226

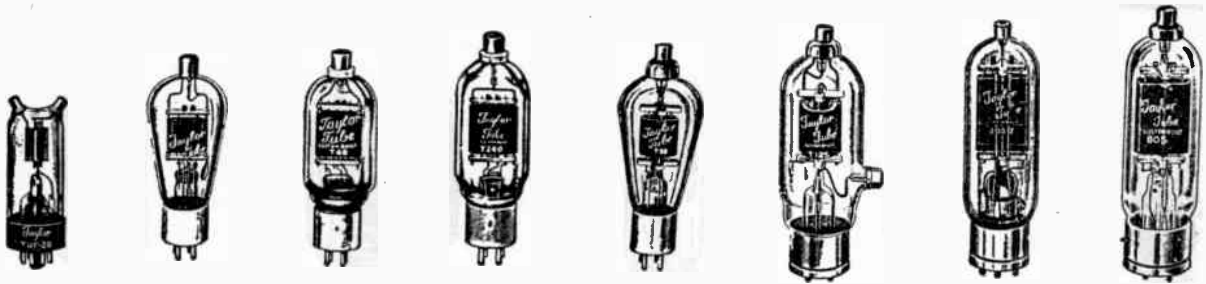


CE-203

# Taylor

**CUSTOM  
BUILT**

# Tubes



TAYLOR TUBE DISTRIBUTORS ARE AUTHORIZED TO REPRESENT THE FACTORY AS SALES AGENTS IN SOLICITING AND HANDLING BUSINESS WITH ELECTRONIC EQUIPMENT MANUFACTURERS.

## TRIODES

Type	—Filament—		—Max. Plate—			Max. Grid Drive Watts	Amp. Factor	Base	—Size—		Max. Mg. For 100% Input	Price
	Volts	Amps	Dissipation Watts	D.C. Volts	D.C. M.A.				L.	D.		
TUF-20	6.3	2.75	20	750	100	6.0	10	OCTAL	3.75	1.5	250	\$5.50
T-20	7.5	1.75	20	750	85	3.5	20	4 P.MED.	6.0	2.37	60	2.75
TZ-20	7.5	1.75	20	750	85	8.5	62	4 P.MED.	6.0	2.37	60	2.75
T-40	7.5	3.0	40	1500	150	9.0	26	4 P.MED.	6.25	2.5	60	3.95
TZ-40	7.5	3.0	40	1500	150	9.0	62	4 P.MED.	6.25	2.5	60	3.95
T-55	7.5	3.0	55	1500	165	7.0	20	4 P.MED.	7.0	2.62	125	6.50
T-60	10.0	3.0	60	1500	150	9.0	15	4 P.MED.	6.75	2.5	60	7.00
TW-75	7.5	4.15	75	2000	175	18.0	20	4 P.MED.	6.25	8.25	125	9.00
T-100	10.0	3.0	75	1500	150	9.0	23	4 P.MED.	7.62	2.67	60	12.50
T-125	10.0	4.5	125	2500	250	12.5	25	4 P.JUM.	8.25	3.0	60	13.50
TW-150	10.0	4.1	150	3000	200	17.0	35	4 P.JUM.	8.75	3.87	90	16.00
T-200	10.0	5.75	200	2500	350	20.0	17	4 P.JUM.	9.5	3.75	30	21.50
203A	10.0	3.25	100	1250	175	10.0	25	4 P.JUM.	7.5	2.32	20	12.00
HD203A	10.0	4.0	150	1750	250	15.0	25	4 P.JUM.	9.5	2.5	20	14.50
HD203C	10.0	4.0	150	1750	250	15.0	25	4 P.JUM.	9.5	2.5	20	14.50
203Z	10.0	3.25	75	1250	175	10.0	85	4 P.JUM.	8.25	2.32	20	9.00
211	10.0	3.25	100	1250	175	10.0	12	4 P.JUM.	7.5	2.32	20	12.00
211C	10.0	3.25	100	1250	175	10.0	12	4 P.JUM.	7.5	2.32	20	12.50
HD211C	10.0	4.0	150	1750	175	15.0	12	4 P.JUM.	9.5	2.5	20	14.50
T-300	10-11	6.0	300	8000	800	18.0	23	4 P.JUM.	12.0	4.87	30	30.00
805	10.0	3.25	125	1750	210	10.0	45	4 P.JUM.	8.5	2.32	30	10.00
810	10.0	4.5	125	2250	275	15.0	86	4 P.JUM.	8.75	3.0	30	12.50
814	10.0	4.0	200	2500	300	17.0	12	4 P.JUM.	9.0	2.62	30	18.50
822	10.0	4.0	200	2500	300	17.0	80	4 P.JUM.	9.0	2.62	30	18.50
822-S	10.0	4.0	200	2500	300	17.0	80	4 P.JUM.	9.0	3.0	30	21.50
833A	10.0	10.0	400	4000	500	40.0	35	SPEC.	8.62	4.62	75	50.00
838	10.0	3.25	100	1250	175	10.0	45	4 P.JUM.	7.87	2.32	20	12.00
845	10.0	3.25	100	1280	175	10.0	5	4 P.JUM.	7.5	2.32	20	12.00

## “More Watts per Dollar”

# Taylor

**CUSTOM  
BUILT**

# Tubes



## TETRODES AND PENTODES

Type	—Filament—		—Max. Plate—			Max. Grid Drive Watts	Amp. Factor	Base	—Size—		Max. Mg. For 100% Input	Price
	Volts	Amps	Dissipation Watts	D.C. Volts	D.C. M.A.				L.	D.		
T-21	6.3	0.9	21	400	95	0.4	188	6 PIN	5.37	2.06	60	\$2.50
282-A	10.0	3.0	75	1000	100	8.0	100	4 P.MED.	6.75	2.25	50	22.50
803	10.0	5.0	125	2000	160	4.0		5 P.JUM.	9.37	2.56	20	21.00
813	10.0	5.0	100	2000	180	1.5		7 P.JUM.	7.5	2.56	80	14.50

## HALF WAVE RECTIFIERS AND \*CONTROL TUBES

Type	—Filament—		—Anode—			Base	Price
	Volts	Amps	Volts Peak Inverse	Amps. Peak	Amps. Average		
866 JR	2.5	2.5	5000	.5	.125	4 P.MED.	\$1.25
866A	2.5	5.0	10000	1.0	.250	4 P.MED.	1.75
249B	2.5	7.5	10000	1.5	.375	4 P.MED.	5.00
872A	5.0	6.75	10000	5.0	1.25	4 P.JUM.	7.50
8003	5.0	6.75	10000	5.0	1.25	SPEC.	7.50
875A	5.0	10.0	15000	6.0	1.5	4 P.JUM.	30.00
*TT-17	2.5	5.0	2500	2.0	0.5	4 P.MED.	6.50
*873	5.0	6.75	3000	10.0	2.5	4 P.JUM.	17.25

## TRIODES — CLASS B AUDIO (Ratings for 2 Tubes)

Type	Max. Plate Volts	Max. Plate Curr.	Zero Sig. Plate Curr.	Max. Sig. Drive Power Watts	Bias Volts	Plate To Plate Load Ohms	Power Output Watts
TZ-20	800	136	20	1.8	0	12,000	70
	1000	280	35	5.5	0	7,350	175
TZ-40	1250	280	82	6.0	-4.5	10,000	225
	1500	250	28	6.0	-9	12,000	250
838	1000	320	70	7.0	0	6,000	200
	1250	320	100	7.5	0	9,000	200
203Z	1000	350	36	6.5	-4.5	6,200	280
	1250	350	36	6.75	0	8,000	300
805	1250	400	102	6.0	0	6,700	300
	1500	400	48	7.0	-16	8,200	370
810	1500	500	52	12.	-30	6,600	510
	2000	500	50	7.2	-45	9,500	720
822	2500	500	50	7.4	-57.5	12,000	900
	8000	450	50	8.0	-67.5	16,000	1000

## Ask for the Taylor Tubes Manual



# AMPEREX

## RADIATION COOLED TYPES

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
AB-150	\$20.00	10.0	3.25
HF-60	10.00	10.0	2.50
HF-100	14.00	10.0	2.50
HF-120	15.00	10.0	3.25
HF-125	20.00	10.0	3.25
HF-130	17.50	10.0	3.25
HF-140	15.00	10.0	3.25
HF-150	17.50	10.0	3.25
HF-175	20.00	10.0	4.00
HF-200	24.50	10.5	4.00
HF-201A	24.50	10.0	4.00
HF-250	27.50	10.5	4.00
HF-300	35.00	11.0	4.00
ZB-60	10.00	6.3	4.00
ZB-120	14.00	10.0	2.50
111H	15.00	10.0	2.50
203A	13.75	10.0	3.25
203H	20.00	10.0	3.25
204A	115.00	11.0	3.85
211	13.75	10.0	3.25
211C	17.50	10.0	3.25
211D	15.00	10.0	3.25
211H	17.50	10.0	3.25
212E, F	90.00	14.0	6.00
241B	115.00	14.0	6.00
242C	13.50	10.0	3.25
251A	234.00	10.0	16.00
261A	17.50	10.0	3.25
270A	194.70	10.0	9.75
276A	15.00	10.0	3.25
279A	355.00	10.0	21.00
304B	14.50	7.5	3.25

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
308B	\$90.00	14.0	6.00
5331	10.00	10.0	2.5
5332	10.00	10.0	2.5
801A	4.30	7.5	1.25
803	24.25	10.0	5.0
805	13.50	10.0	3.25
807	2.50	6.3	0.9
810	14.50	10.0	4.50
811-A	4.05	6.3	4.0
812-A	4.05	6.3	4.0
813	16.00	10.0	5.0
830B	11.50	10.0	2.50
833A	49.50	10.0	10.00
834	14.50	7.5	3.25
838	13.75	10.0	3.25
841	4.35	7.5	1.25
845	13.75	10.0	3.25
849	138.00	11.0	5.00
849A	135.00	11.0	7.70
849H	135.00	10.0	11.50
851	253.00	11.0	15.50
8005	7.40	10.0	3.25
AX4-125-A/4D21	27.50	5.0	6.5
AX4-250-A/5D22	37.50	5.0	14.5
AX-9900/5866	17.50	6.3	5.4
AX-9901/5867	25.00	5.0	14.1
AX-9902/5868	48.00	10.0	9.7
AX-9903/5894	15.00	Series 12.6 Parallel 6.3	Series 0.9 Parallel 1.8

FULLY INTERCHANGEABLE: Type 203H with Amperex HF125. Type 211C with Amperex HF130, Type 211H with Amperex HF150.



## FORCED-AIR COOLED TYPES

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
889RA*	\$285.00	11.0	125.0
891R*	362.00	11.0▲	60.0
892R*	362.00	11.0▲	60.0
893AR*	1150.00	10.0‡	61.0
8002R	150.00	16.0	38.0

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
HF3000†	\$300.00	21.5	40.5
ZB3200†	300.00	21.5	40.5
501R/5759	100.00	7.5	24.0
502R/5761	130.00	7.5	24.0
492R/5758	260.00	5.0	110.0

\* Credits will be allowed for return of radiator and crate in good condition prepaid to factory in Brooklyn, N. Y., in accordance with this schedule.

\$30.00 for Type No. 889-RA  
45.00 " " Nos. 891-R, 892-R  
50.00 " " Nos. 220-R, 228-R  
150.00 " " No. 893-AR

†Single or two-phase filament (two units); voltage is per unit.  
‡Single, three- or six-phase filament (three sections). Voltage is per section.  
§All glass radiation and air-cooled transmitting tubes.



HELPFUL CHARTS AND LITERATURE FREE: Write for set of INTERCHANGEABILITY CHARTS, information at a glance, RAPID TUBE DATA REFERENCE TABLES, 8 pages of condensed information arranged for quick reference. Address your distributor of Amperex direct.



857B



869B



575A



866A, 866



872A/872



AGR-9951/5870



891  
892



889A



VC25  
VC50  
VC100

# ELECTRONIC TUBES

COMMUNICATION - RECTIFICATION - INDUSTRIAL  
ELECTRO-MEDICAL - SPECIAL PURPOSE

## WATER COOLED TYPES

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
207	\$242.00	22.0	52.0
220C	350.00	21.5	41.0
228A	310.00	21.5	41.0
232C	525.00	20.0	72.0
233	500.00	24.0	70.0
342A	540.00	20.0	67.0
343A	350.00	21.5	57.5
846	250.00	11.0	51.0
858	500.00	22.0	52.0
859	400.00	11.0▲	71.0
889A	210.50	11.0	125.0
891	223.00	11.0▲	60.0
892	223.00	11.0▲	60.0
893A	630.00	10.0‡	61.0

▲Single or two-phase filament (two units); voltage is per unit.  
‡Single-, three- or six-phase filament (three sections). Voltage is per section.

## RADIATION COOLED HIGH VACUUM RECTIFIERS

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
217C	\$21.50	10	3.25
221A	20.00	5	10
404	190.00	20	35
836	9.00	2.5	5
8020	22.00	5	6

## HIGH VACUUM CONDENSERS

TYPE NO.	CAPACITY	KVP RATING	PRICE
VC25	25 uuf	32,000	\$19.00
VC50	50 uuf	32,000	22.50
VC100/ VC100A	100 uuf	32,000	27.50
VC250	250 uuf	30,000	62.50
VC500	500 uuf	30,000	90.00

## MERCURY VAPOR RECTIFIERS

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
249B, C	\$ 9.00	2.5	7.50
258B	11.00	2.5	7.50
266B, C	209.00	5.0	42.0
267B	22.00	5.0	6.75
315A	38.60	5.0	10.00
575A	21.00	5.0	10.00
673	21.00	5.0	10.00
816	1.65	2.5	2.00
857B	209.00	5.0	30.00
866A, 866	2.00	2.5	5.00
869B	132.00	5.0	20.00
872A, 872	8.20	5.0	6.75
8008	8.25	5.0	6.75
AGR-9950/5869	20.00	5.0	6.5
AGR-9951/5870	90.00	5.0	14.0

## WATER COOLED—HIGH VACUUM RECTIFIERS

TYPE NO.	PRICE	FILAMENT	
		Volts	Amps.
222A	\$270.00	21.5	41.0
237A	435.00	20.0	61.0
562A	300.00	22.0	52.0

## RADIATION COUNTER TYPES

TYPE NO.	PRICE	Operating Voltage	Wall/Window Thickness
1N	\$22.50	600 V.DC	1/16"
4E	27.50	1150 V.DC	1/8"
75N	10.00	700 V.DC	.005"
151N	17.50	700 V.DC	.020" wall
100C	50.00	1200 V.DC	.0005"
200N	60.00	700 V.DC	.0002"

## WATER JACKET

TYPE NO.	Suitable for these Amperex types:
DW-1580	207, 494, 495, 496, 497, 891, 892
DW-2000	220C, 222A, 232C, 233, 237A, 342A, 343A
DW-2100	889A
DW-2200	501, 502, 8002
DW-2500	858, 859, 562A
DW-2600	846

NOTE: Amperex Water Jackets fit interchangeable tube types of other makers.



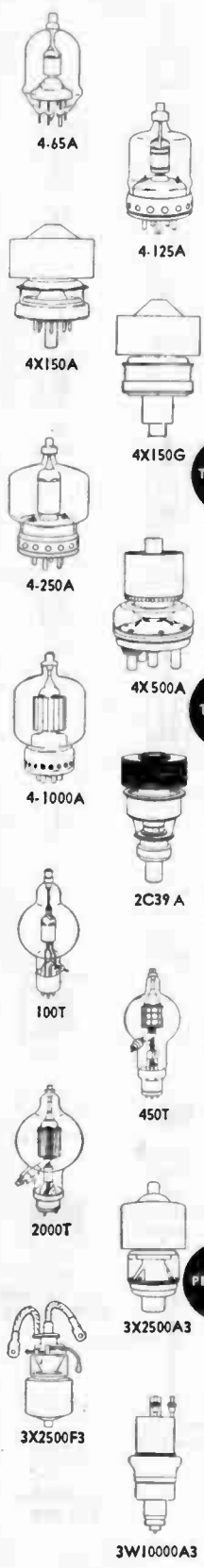
# AMPEREX

ELECTRONIC CORPORATION



Long the criteria of good design in any electronic equipment, Eimac tubes are today the undisputed leaders of their field. Complete data on any of the Eimac products listed are available by writing direct.

### TRANSMITTING TYPE TUBES

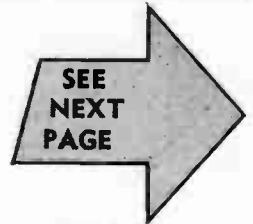


EIMAC TUBE TYPE	PRICE	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS			
		Plate Dissipation Watts	Plate Voltage	Plate Current Milliamperes	Grid Dissipation Watts	Screen Voltage	Screen Dissipation Watts	Filament, Volts	Filament, Amperes	Amplification Factor	Transconductance $\mu$ mhos
<b>TETRODES</b>											
4-65A	\$ 14.50	65	3000	150	5	400	10	6.0	3.5	5	4000
4-125A	27.50	125	3000	225	5	400	20	5.0	6.5	6.2	2450
4-250A	37.50	250	4000	350	5	600	35	5.0	14.5	5.1	4000
4-400A	55.00	400	4000	350	5	600	35	5.0	14.5	5.1	4000
4-1000A	120.00	1000	6000	700	25	1000	75	7.5	21	7.2	10,000
4X100A*	48.00	100	1000	250	2	300	15	6.0	2.8	4.5	12,000
4X150A*	48.00	150	1000	250	2	300	15	6.0	2.8	4.5	12,000
4X150G*	54.00	150	1250	250	2	300	15	2.5	6.25	5.0	12,000
4X500A*	110.00	500	4000	350	10	500	30	5.0	13.5	6.2	5200
4X500F*	85.00	500	4000	350	10	500	30	5.0	12.2	6.2	5200
<b>TRIODES</b>											
2C39*	33.00	100	1000	100 $\frac{1}{2}$	3	.....	.....	6.3	1.1	100	17,000
2C39A*	33.00	100	1000	125 $\frac{1}{2}$	2	.....	.....	6.3	1.0	100	22,000
3C24	8.00	25	2000	75	8	.....	.....	6.3	3.0	23	2500
3W10000A3**	870.00	10,000	5000	10,000	100	.....	.....	7.0	15	20	55,000
3X2500A3*	180.00	2500	6000	2000	150	.....	.....	7.5	48	20	20,000
3X2500F3*	180.00	2500	6000	2000	150	.....	.....	7.5	48	20	20,000
3X12500A3*	875.00	12,500	6000	8000	600	.....	.....	7.5	192	20	80,000
25T	8.00	25	2000	75	7	.....	.....	6.3	3.0	24	2500
35T	9.50	50	2000	150	15	.....	.....	5.0	4.0	39	2850
35TG	10.00	50	2000	150	15	.....	.....	5.0	4.0	39	2850
75TH	12.00	75	3000	225	16	.....	.....	5.0	6.25	20	4150
75TL	12.00	75	3000	225	13	.....	.....	5.0	6.25	12	3350
100TH	16.50	100	3000	225	20	.....	.....	5.0	6.3	40	5500
100TL	16.50	100	3000	225	15	.....	.....	5.0	6.3	14	2300
152TH	26.00	150	3000	450	30	.....	.....	5 or 10	12.5 or 6.2	20	8300
152TL	26.00	150	3000	450	25	.....	.....	5 or 10	12.5 or 6.2	12	7150
250TH	30.00	250	4000	350	40	.....	.....	5.0	10.5	37	6650
250TL	30.00	250	4000	350	35	.....	.....	5.0	10.5	14	2650
304TH	55.00	300	3000	900	60	.....	.....	5 or 10	25 or 12.5	20	16,700
304TL	55.00	300	3000	900	50	.....	.....	5 or 10	25 or 12.5	12	16,700
450TH	70.00	450	6000	600	80	.....	.....	7.5	12.0	38	6650
450TL	70.00	450	6000	600	65	.....	.....	7.5	12.0	18	6060
592/3-200A3	27.50	200	3500	250	25	.....	.....	10.0	5.0	25	3600
750TL	125.00	750	10,000	1000	100	.....	.....	7.5	21.0	15	3500
1000T	125.00	1000	7500	750	80	.....	.....	7.5	17.0	35	9050
1500T	200.00	1500	8000	1250	125	.....	.....	7.5	24.0	24	10,000
2000T	250.00	2000	8000	1750	150	.....	.....	10.0	25.0	23	11,000
<b>PENTODE</b>											
4E27A/5-125B	32.50	125	4000	200	5	750	20	5.0	7.5	5.0	2150

\*External Anode requiring forced-air cooling  
 \*\*Water-cooled  
 †Cathode Current

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

COMPLETE DATA AVAILABLE UPON REQUEST



EITEL-McCULLOUGH, INC.  
 San Bruno, California



Eimac product-reputation is the result of years of efficient, dependable performance in varied fields of service. It is the reason the criteria of good design of any electronic equipment are components trademarked "Eimac."

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

**RECTIFIERS**

HIGH VACUUM TYPES						
TYPE	PRICE	FILAMENT VOLTAGE	FILAMENT CURRENT AMPS	PEAK INVERSE VOLTAGE	CURRENT AMPS PEAK PLATE	AVERAGE PLATE CURRENT MA
2-01C	\$ 13.75	6.3	0.4	1,000	0.010	....
2-25A	10.00	6.3	3.0	25,000	....	50
2-50A	12.50	5.0	4.0	30,000	....	75
2-150D	17.50	5.0	13.0	30,000	....	150
2-240A	60.00	7.5	12.0	40,000	....	500
2-2000A	195.00	10.0	25.0	75,000	....	750
250R	20.00	5.0	10.5	60,000	....	250
253	18.50	5.0	10.0	15,000	....	350
100R	13.50	5.0	6.5	40,000	....	100
MERCURY VAPOR TYPES						
*KY21A	12.00	2.5	10.0	11,000	3	750
RX21A	8.00	2.5	10.0	11,000	3	750
866A	1.95	2.5	5.0	10,000	1	250
872A	8.20	5.0	7.5	10,000	5	1250

\*Grid Controlled

**VACUUM CAPACITORS**

VARIABLE				FIXED			
TYPE	PRICE	CAPACITY	RATING RF PEAK	TYPE	PRICE	CAPACITY	RATING RF PEAK
VVC60-20	\$ 60.00	10-60 mmfd	20-KV	VC6-20	\$ 13.50	6 mmfd	20-KV
VVC2-60-20	134.00	Split Stator 5-30 mmfd	40-KV	VC6-32	15.50	6 mmfd	32-KV
		Parallel 20-120 mmfd	20-KV	VC12-20	15.00	12 mmfd	20-KV
VVC4-60-20	258.00	Split Stator 10-60 mmfd	40-KV	VC12-32	18.00	12 mmfd	32-KV
		Parallel 40-240 mmfd	20-KV	VC25-20	18.00	25 mmfd	20-KV
				VC25-32	21.00	25 mmfd	32-KV
				VC50-20	22.00	50 mmfd	20-KV
				VC50-32	25.00	50 mmfd	32-KV

**AIR-SYSTEM SOCKETS**

TYPE	4X150A/4000	4-400A/4000	4-1000A/4000
COMPLETE ASSEMBLY PRICE	\$19.50	\$16.00	\$22.50
REPLACEMENT CHIMNEY PRICE	....	6.00	7.50
FOR USE WITH TUBE TYPE	4X150A	4-400A	4-1000A

**HEAT DISSIPATING CONNECTORS**

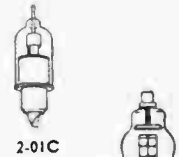
TYPE	Price	MOLE DIA.
HR-1	\$ .60	.052
HR-2	.60	.0625
HR-3	.60	.070
HR-4	.80	.1015
HR-5	.80	.125
HR-6	.80	.360
HR-7	1.60	.125
HR-8	1.60	.570
HR-9	3.00	.570

**VACUUM PUMP**

<b>HV-1 DIFFUSION PUMP</b>	Price \$125.00
An air-cooled, oil diffusion type, vacuum pump. Ultimate vacuum, 4x10 <sup>-6</sup> mm. of mercury. Speed (without baffle) approx. 67 liters/seconds.	
<b>100 IG, IONIZATION GAUGE</b>	\$22.50
An electronic vacuum pressure gauge. Filament voltage 3.5 to 7.5 volts.	
<b>DIFFUSION PUMP OIL A</b>	\$5.00 qt.

**VACUUM SWITCH**

<b>VS-2</b>	Price \$12.00
Single pole double throw switch within a high vacuum adaptable for high voltage switching. Contact spacing .015". Switch will handle R-F potentials as high as 20 Kv. In DC switching will handle approximately 1.5 Amps. at 5 Kv.	



2-01C



866A



872A



RX21A



KY21A



100R



2-150D



250R



FIXED VACUUM CAPACITOR



VARIABLE VACUUM CAPACITOR



DIFFUSION PUMP



HEAT DISSIPATING CONNECTOR



VACUUM SWITCH



AIR-SYSTEM SOCKET

**EITEL-McCULLOUGH, INC.**  
San Bruno, California

# NATIONAL ELECTRONICS, INC.

QUICK-HEATING INDUSTRIAL ELECTRONIC TUBES

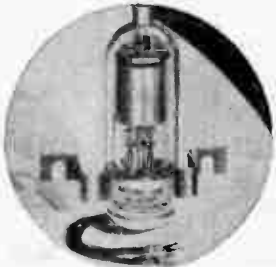
## THYRATRONS



3C23 THYRATRON



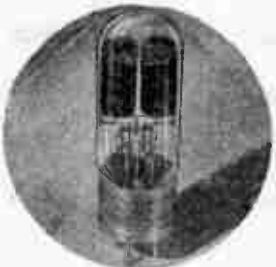
NL-740 THYRATRON



NL-618P RECTIFIER



NL-649/5834/249R  
RECTIFIER



NL-604 RECTIFIER

TYPE NUMBER	GAS FILLING	DC OUTPUT AMPERES	PEAK AMPS. RATING	PEAK INVERSE VOLTAGE	FILA-MENT VOLTS	FILA-MENT AMPERES	PRICE
3C23	Arg. & Merc.	1.5	6	1250	2.5	7	\$12.50
323B	Arg. & Merc.	1.5	6	1250	2.5	7	\$12.50
393A	Arg. & Merc.	1.5	6	1250	2.5	7	\$12.50
NL-714	Arg. & Merc.	1	3	1250	2.5	5	\$7.00
NL-715/ 5557	Mercury	1	3	5000	2.5	5	\$7.00
NL-710	Arg. & Merc.	2.5	30	1250	2.5	9	\$12.15
NL-740	Arg. & Merc.	4	50	1250	2.5	16	\$19.50
NL-741	Mercury	4	50	5000	2.5	16	\$19.50

## HALF-WAVE RECTIFIERS

NL-614	Xenon	2.5	15	900	2.5	8.5	\$7.50
NL-615	Mercury	2.5	10	2000	2.5	7	\$6.90
NL-617	Mercury	5	20	1000	2	12	\$10.50
NL-618	Xenon	6.4	40	750	2.5	18	\$12.40
NL-623	Mercury	15	45	500	2.5	20	\$10.50
NL-625	Mercury	15	45	900	2.5	20	\$29.00
NL-627	Mercury	20	120	1000	2.5	26	\$31.50
NL-635	Mercury	6.4	40	1000	2.5	18	\$12.60
NL-649/ 5834/249R	Mercury	2	10	900	2.5	7	\$6.90
NL-653/ 5835/BR-3	Mercury	3	12	900	2.5	10	\$10.00

## FULL-WAVE RECTIFIERS

NL-600	Arg. & Merc.	1	4	900	2.5	6	\$7.10
NL-602	Arg. & Merc.	2	4	900	2.5	9	\$7.95
NL-604	Arg. & Merc.	2.5	10	900	2.5	12	\$8.90

Prices and other data subject to change without notice.

WRITE FOR INDIVIDUAL TUBE DATA SHEETS FOR FULL DETAILS.

# NATIONAL ELECTRONICS, INC.

GENEVA • ILLINOIS • U.S.A.



# RAULAND

# Television

# PICTURE TUBES

## PROVEN DEPENDABILITY • SUPERIOR PERFORMANCE

Tube type	Bulb △	Maximum diameter	Length	Deflection angle approx.	Normal anode voltage	No. 2 grid voltage	No. 1 grid cutoff volts	Face glass	List Price	Suggested resale
10BP4	G	10½"	17½"	50°	9,000	250	-27 to -63	Clear	\$32.20	\$24.75
10FP4★	G	10½"	17½"	50°	9,000	250	-27 to -63	Clear	35.00	26.80
12KP4★	G	12¼"	17½"	54°	11,000	250	-27 to -63	Clear	37.00	28.50
12KP4A★	G	12¼"	17½"	54°	11,000	250	-27 to -63	Luxide	37.00	28.50
12LP4	G	12¼"	18¾"	54°	11,000	250	-27 to -63	Clear	35.00	26.25
12LP4A	G	12¼"	18¾"	54°	11,000	250	-27 to -63	Luxide	35.00	26.25
12UP4	M	12¼"	18¾"	54°	11,000	250	-27 to -63	Clear	35.00	26.25
12UP4A	M	12¼"	18¾"	54°	11,000	250	-27 to -63	Luxide	35.00	26.25
14BP4	G	13¼" □	16¼"	65°	11,000	250	-27 to -63	Luxide	37.50	28.15
16AP4	M	15⅞"	22¼"	53°	12,000	300	-33 to -77	Clear	68.30	51.25
16AP4A	M	15⅞"	22¼"	53°	12,000	300	-33 to -77	Luxide	68.30	51.25
16EP4	M	15⅞"	19⅝"	60°	12,000	300	-33 to -77	Clear	68.30	51.25
16EP4A	M	15⅞"	19⅝"	60°	12,000	300	-33 to -77	Luxide	68.30	51.25
16GP4	M	15⅞"	17¼"	70°	12,000	300	-33 to -77	Luxide	53.50	40.00
16TP4	G	14⅞" □	18½"	65°	12,000	300	-33 to -77	Luxide	53.50	40.00
19AP4A	M	18⅝"	21½"	66°	13,000	250	-27 to -63	Luxide	100.00	75.00

★ Aluminized type, no ion magnet required.

△ Metal-Glass—M  
All Glass —G

□ Rectangular bulb—diagonal dimension.

All heaters 6.3 volts, 0.6 amps.

All types magnetic deflection and focus.

# "EL" XENON GAS-FILLED TUBES

## RECTIFIERS



**FULL WAVE RECTIFIER**  
EL 1C  
D.C. Output (Amps.) 1.0  
Peak Anode Current 4.0  
Peak Inverse Volts... 725  
Filament Volts ..... 2.5  
Filament Amperes .... 6.0  
Overall Length ..... 5½"  
Price .....\$7.10



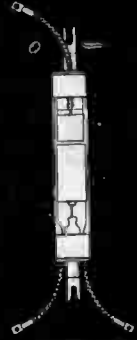
**FULL WAVE RECTIFIER**  
EL 3C  
D.C. Output (Amps.) 2.5  
Peak Anode Current 10.0  
Peak Inverse Volts... 725  
Filament Volts ..... 2.5  
Filament Amperes .... 11.5  
Overall Length ..... 7"  
Price .....\$8.90



**FULL WAVE RECTIFIER**  
EL 6C  
D.C. Output (Amps.) 6.4  
Peak Anode Current 25.6  
Peak Inverse Volts... 725  
Filament Volts ..... 2.5  
Filament Amperes .... 17.0  
Overall Length ..... 7½"  
Price .....\$15.70



**HALF WAVE RECTIFIER**  
EL 6B  
D.C. Output (Amps.) 6.4  
Peak Anode Current 40.0  
Peak Inverse Volts... 920  
Filament Volts ..... 2.5  
Filament Amperes .... 21  
Overall Length ..... 9½"  
Price .....\$12.40



**HALF WAVE RECTIFIER**  
EL 16F  
D.C. Output (Amps.) 16.0  
Peak Anode Current 96.0  
Peak Inverse Volts... 620  
Filament Volts ..... 2.5  
Filament Amperes .... 36  
Overall Length ..... 15½"  
Price .....\$24.30

## GRID CONTROL RECTIFIERS (THYRATRONS)



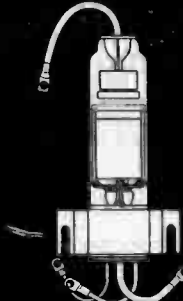
**EL C1J**  
D.C. Output (Amps.) 1.0  
Peak Anode Current 8.0  
Peak Forward Volts... 450  
Peak Inverse Volts... 700  
Filament Volts ..... 2.5  
Filament Amperes .... 6.3  
Overall Length ..... 4¼"  
Price .....\$8.20



**EL C3J**  
D.C. Output (Amps.) 2.5  
Peak Anode Current 30.0  
Peak Forward Volts... 750  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 9.0  
Overall Length ..... 6½"  
Price .....\$12.15



**EL C6J**  
D.C. Output (Amps.) 6.4  
Peak Anode Current 77.0  
Peak Forward Volts... 750  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 21.0  
Overall Length ..... 9"  
Price .....\$29.50



**EL C16J**  
D.C. Output (Amps.) 16.0  
Peak Anode Current 160.0  
Peak Forward Volts... 1000  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 31.0  
Overall Length ..... 10"  
Price .....\$53.50



**EL C6C**  
D.C. Output (Amps.) 6.4  
Peak Anode Current 77.0  
Peak Forward Volts... 2000  
Peak Inverse Volts... 4000  
Filament Volts ..... 2.5  
Filament Amperes .... 24.0  
Overall Length ..... 11"  
Price .....\$40.80

**EL C1J/A**  
D.C. Output (Amps.) 1.0  
Peak Anode Current 8.0  
Peak Forward Volts... 750  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 6.3  
Overall Length ..... 4¼"  
Price .....\$8.90

**EL C3J/A**  
D.C. Output (Amps.) 2.5  
Peak Anode Current 30.0  
Peak Forward Volts... 1000  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 9.0  
Overall Length ..... 6½"  
Price .....\$14.20

**EL C6J/A**  
D.C. Output (Amps.) 6.4  
Peak Anode Current 77.0  
Peak Forward Volts... 1000  
Peak Inverse Volts... 1250  
Filament Volts ..... 2.5  
Filament Amperes .... 21.0  
Overall Length ..... 9"  
Price .....\$30.40

SEND FOR  
DESCRIPTIVE CATALOG

**ELECTRONS, INCORPORATED**  
127 SUSSEX AVENUE  
NEWARK, N. J.

# CHATHAM

## ELECTRONIC TUBES and EQUIPMENT

Tubes listed on this page can be supplied direct from stock. Many other types are also available for immediate delivery. Write for catalog today. CHATHAM also designs, develops and manufactures special tubes to exact customer specification. Inquiries regarding this service are invited.

### CHATHAM 2D21 THYRATRON



A Xenon filled shield grid thyatron for grid controlled rectifier service. Permits use of high resistance in the grid circuit. Heater 6.3 volts .6 amp. . . Inverse peak plate voltage 1300 volts, 100 ma. average plate current.

### CHATHAM 5594 THYRATRON



Xenon filled thyatron. Operates through ambient temperatures from  $-55^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$  without auxiliary equipment to maintain bulb temperature. Fil. 2.5 volts, 5.0 amperes . . . Peak inverse 5000 volts; anode current 0.5 amps. average, 2.0 amps. peak.

### CHATHAM 884 THYRATRON



An Argon filled thyatron for use as a sweep circuit oscillator in cathode ray tube circuits. Stable oscillator. Heater 6.3 volts, 0.6 amp. . . Peak forward plate voltage 300 volts, 75 ma. average plate current.

### CHATHAM 1B46 REGULATOR



A cold cathode glow discharge tube designed for voltage stability. D.C. operating voltage 82 volts —operating current range 1 to 2 mA dc.

### CHATHAM 4B32 RECTIFIER



A rugged half wave Xenon filled rectifier. Operates in any position throughout an ambient temperature range of  $-75^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$  Fil. 5 volts, 7.5 amp. . . Inverse peak anode voltage 10,000 volts, 1.25 amp. average anode current.

### CHATHAM 866-A RECTIFIER



A rugged half wave Mercury Vapor rectifier to withstand high peak inverse voltages. Heavy duty filament. Fil. 2.5 volts, 5.0 amp. . . Peak inverse anode voltage 10,000 volts, .25 amp. average anode current.

### CHATHAM 1B3GT RECTIFIER



High voltage vacuum rectifier for Television and similar applications. Low filament power permits efficient operation from R.F. supply. Filament 1.25 volts, 200 ma. . . Inverse peak plate voltage 30,000 volts, 2 ma. average plate current, 17 ma. maximum plate current.

### CHATHAM 3B28 RECTIFIER



This rugged half wave Xenon filled rectifier will operate in any position and throughout an ambient temperature range of  $-75^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$  Fil. 2.5 volts, 5.0 amp. . . Inverse peak anode voltage 10,000 volts, .25 amp. average anode current.

### CHATHAM 1Z2 RECTIFIER



A small bulb high voltage vacuum rectifier. Low cathode heating power and low dielectric losses make tube suitable for radio frequency supply circuits. Fil. 1.25 volts, 265 amp. . . Inverse peak plate voltage 15,000 volts, 2 ma. average plate current, 10 ma. peak plate current.

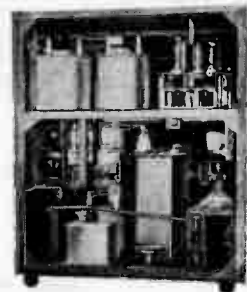


• Pulse life test equipment built by CHATHAM checks receiver type tubes under pulse operating conditions.

## CUSTOM BUILT ELECTRONIC EQUIPMENT

CHATHAM specializes in the development, design, and construction of custom-built electronic equipment to exactly meet customers' requirements. Our capable staff of engineers will furnish prompt estimates or, if desired, will call to discuss your problem personally. Call or write today for complete information.

Write today for the informative CHATHAM catalog. For free copy address requests on company letterhead — no obligation.



• 5 Megawatts radar modulator built by CHATHAM to rigid government standards.



# CHATHAM ELECTRONICS • INC

475 WASHINGTON STREET, NEWARK 2, NEW JERSEY



# WESTINGHOUSE ELECTRONIC TUBES



## PHOTOTUBES



WL-767  
WL-773  
WL-775



SR-50  
SR-53

Type Number	Spectral Ranges Au.	Vacuum or Gas	Cathode Surface	Luminous Sensitivity Microamperes per lumen (o cycles)	Anode Volts Max.	List Price
WL-1P29	3300-9000	Gas	S3	40	100	\$ 2.95
SR-50		REPLACEMENT ONLY				7.35
SR-53		REPLACEMENT ONLY				10.50
SK-60		REPLACEMENT ONLY				7.35
SK-63		REPLACEMENT ONLY				10.50
WL-734	4000-12000	Vac.	S1	15	500	2.75
WL-767	2000-3150	Vac.	Zirconium	—	500	82.50
WL-773	2000-3675	Vac.	Thorium	—	500	82.50
WL-775	2000-3000	Vac.	Tantalum	—	500	82.50
WL-789	Below 2100	Vac.	Platinum	—	500	137.50
WL-868	4000-12000	Gas	S1	90	100	2.50
WL-917	4000-12000	Vac.	S1	20	500	3.50
WL-918	4000-12000	Gas	S1	150	90	3.10
WL-919	4000-12000	Vac.	S1	20	500	3.50
WL-920	4000-12000	Gas	S1	100	90	4.15
WL-921	4000-12000	Gas	S1	135	90	2.05
WL-922	4000-12000	Vac.	S1	20	500	1.95
WL-923	4000-12000	Gas	S1	135	90	2.05
WL-924	4000-12000	Gas	S1	90	90	3.30
WL-925	4000-12000	Vac.	S1	20	250	2.40
WL-926	3300-9000	Vac.	S3	6.5	500	2.90
WL-927	4000-12000	Gas	S1	125	90	2.50
WL-928	4000-12000	Gas	S1	65	90	3.15
WL-929	3000-6700	Vac.	S4	45	250	1.50
WL-930	4000-12000	Gas	S1	135	90	1.65
WL-931A †	3000-6700	Vac.	S4	.	1250	9.75

Sensitivity 10 amps. per lumen at 100 volts per stage.  
† Multiplier.

## THYRATRONS

### GRID CONTROLLED GAS OR MERCURY VAPOR RECTIFIERS

Type Number	Filament		Volts Peak Inverse	Amps. Peak	Amps. Ave.	Gas	Number of Electrodes	List Prices
	Volts	Amps.						
WL-2D21	6.3	0.6	1300	0.5	0.1	Inert	4	\$ 2.00
WL-3C23	2.5	7.0	1250	6.0	1.0	Hg.	3	12.50
WL-33	5.0	4.5	1000	15.0	2.5	Hg.	3	21.00
WL-41	5.0	20.0	10000	75.0	12.5	Hg.	3	182.00
WL-81A	2.5	5.0	500	2.0	0.5	Inert	3	16.00
WL-105	5.0	10.0	2500	40.0	6.4	Hg.	4	48.00
WL-172	5.0	10.0	2000	40.0	6.4	Hg.	4	65.00
WL-414	5.0	20.0	2000	100.0	12.5	Hg.	4	120.00
WL-502A	6.3	0.6	1300	1.0	0.1	Inert	4	1.85
KU-610	2.5	6.5	500	0.4	0.1	Inert	3	22.00
KU-618	REPLACEMENT ONLY †							
WL-624	5.0	10.0	2500	80.0	6.4	Hg.	3	44.00
KU-627	2.5	5.0	5000	2.5	0.64	Hg.	3	17.25
KU-628	5.0	11.5	2500	8.0	2.0	Hg.	3	30.50
WL-629	2.5	2.8	350	0.2	0.04	Inert	3	10.00
WL-632B	5.0	5.0	1500	30.0	2.5	Hg.	4	23.00
KU-636	2.5	7.5	350	0.4	0.1	Inert	3	22.00
WL-672A	5.0	5.0	2500	40.0	3.2	Hg.	4	26.50
KU-676	5.0	10.0	2500	40.0	6.4	Hg.	3	48.00
WL-677	5.0	10.0	10000	15.0	4.0	Hg.	3	48.00
WL-678	5.0	7.5	15000	6.0	1.6	Hg.	3	40.00
WL-759	REPLACEMENT ONLY							
WL-884	6.3	0.6	350	0.3	0.075	Inert	3	1.85
WL-885	2.5	1.5	350	0.3	0.075	Inert	3	2.00
WL-2050	6.3	0.6	1300	1.0	0.1	Inert	4	1.85
WL-5557/17	2.5	5.0	5000	2.0	0.5	Hg.	3	7.00
WL-5559/57	5.0	4.5	1000	15.0	2.5	Hg.	3	19.50
WL-5684	2.5	6.3	1250	8.0	1.0	Inert	3	8.90
WL-5685	2.5	31.0	1250	180.0	16.0	Inert	3	53.50
WL-5683	2.5	6.3	1250	8.0	1.0	Inert	3	8.90
WL-5684	2.5	9.0	1250	30.0	2.5	Inert	3	14.20
WL-5685	2.5	21.0	1250	77.0	6.4	Inert	3	30.40
WL-5796	2.5	8.5	1500	20.0	1.6	Inert	3	12.50

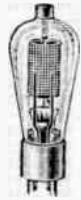
Prices subject to change without notice.



WL-632B



KU-676



KU-627



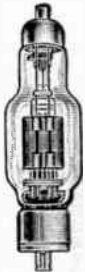
WL-629



# WESTINGHOUSE ELECTRONIC TUBES



## PLIOTRONS — Modulators, Amplifiers, Oscillators



WL-204A



WL-211



WL-803



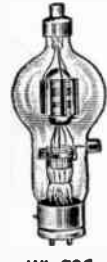
WL-807



WL-809



WL-460



WL-806

Type Number	Filament		Max. Plate D-C** Volts	Max. Plate D-C** Ma.	Max. Plate Diss** Watts	Plate Output Watts Class C	Ampl. Factor	Max. MC For 100% Input	List Prices	
	Volts	Amps.								
WL-3X2500A3#	7.5	48	6000	2000	2500	7500	20	50	\$ 180.00	
WL-4D21/4-125A	5.0	6.5	3000	225	125	375	Tetrode	120	27.50	
WL-4X150A#	6.0	2.8	1000	250	150	74	Tetrode	500	48.00	
WL-4X500A#	5.0	13.5	4000	350	500	1320	Tetrode	120	110.00	
WL-4-1000A	7.5	21.0	6000	700	1000	2200	Tetrode	110	120.00	
WL-5D22/4-250A	5.0	14.5	4000	350	250	1000	Tetrode	75	37.50	
WL-195	10.0	3.25	3000	150	125	325	12	15	30.50	
WL-196	10.0	3.25	3000	150	125	325	35	15	30.50	
WL-203A	10.0	3.25	1250	175	100	120	25	15	13.75	
WL-204A	11.0	3.85	2500	275	250	450	23	3	115.00	
WL-207	22.0	50.00	15000	2000	10000	20000	20	1.6	242.00	
WL-211	10.0	3.25	1250	175	100	130	12	15	13.75	
WL-285	10.0	3.25	1350	200	100	170	12	20	20.00	
WL-450TH	7.5	12.0	6000	600	450	1800	38	40	70.00	
WL-460	10.0	3.85	3000	200	150	400	18	30	30.50	
WL-463	11.0	5.00	2500	275	200	550	22	30	43.00	
WL-468	10.0	3.85	2000	200	150	400	18	6	28.50	
WL-473#	6.0	60.00	5000	1400	2500	3900	22	60	144.00	
RH-507	2.0	0.06	REPLACEMENT ONLY				0.8	.....	.....	33.50
RJ-550			REPLACEMENT ONLY						.....	17.25
RJ-563			REPLACEMENT ONLY						.....	29.00
RJ-571			REPLACEMENT ONLY						.....	15.75
WL-787	6.0	1.60	650	.....	.....	.....	2	.....	44.00	
WL-801A	7.5	1.25	600	70	20	25	8	60	4.30	
WL-802	6.3	0.80	500	60	10	15	.....	30	4.75	
WL-803	10.0	5.00	2000	175	125	225	.....	20	24.25	
WL-805	10.0	3.25	1500	210	125	215	50	30	13.50	
WL-806	5.0	9.50	3000	200	150	450	12.6	30	34.25	
WL-807	6.3	0.80	600	100	25	40	.....	60	2.50	
WL-808	7.5	4.00	1500	150	50	150	47	30	10.75	
WL-809	6.3	2.50	750	100	25	55	50	60	4.00	
WL-810	10.0	4.50	2000	250	125	375	36	30	14.50	
WL-811	6.3	4.00	1250	125	40	115	160	60	3.30	
WL-812	6.3	4.00	1250	125	40	115	29	60	3.00	
WL-813	10.0	5.00	2000	180	100	260	.....	30	16.00	
WL-814	10.0	3.25	1250	150	50	130	.....	30	14.25	
WL-815	6.3	1.60	400	150	20	44	.....	150	6.90	
WL-826	7.5	4.00	1000	125	60	25	31	250	12.50	
WL-828	10.0	3.25	1250	160	70	150	.....	30	13.75	
WL-829B	6.3	1.125	750	240	40**	87**	.....	200	16.25	
WL-832A	6.3	0.80	750	90	15	26	.....	200	12.90	
WL-833A	10.0	10.00	4000	500	400**	1440**	35	20	49.50	
WL-837	12.6	0.70	500	80	12	20	.....	20	5.80	
WL-838	10.0	3.25	1250	175	100	130	54	30	13.75	
WL-845	10.0	3.25	1250	120	100	57	5.3	.....	13.75	
WL-849	11.0	5.00	2500	350	400	560	19	3	138.00	
WL-851	11.0	15.50	2500	1000	750	1750	20.5	3	253.00	
WL-860	10.0	3.25	3000	150	100	200	.....	30	34.50	
WL-861	11.0	10.00	3500	350	400	800	.....	20	178.25	
WL-862A	33.0	207.0	20000	10000	100000	100000	45	1.6	1,150.00	
WL-880	12.6	315.00	10500	6000	20000	45000	20	25	483.00	
WL-889A	11.0	120.00	8500	2000	5000	10000	21	50	210.50	
WL-889RA	11.0	120.00	8500	2000	5000	10000	21	40	285.00	
*WL-891	22.0	60.00	12000	2000	6000	12000	8	1.6	223.00	
*WL-891R	22.0	60.00	10000	2000	4000	11000	8	1.6	362.00	
*WL-892	22.0	60.00	15000	2000	10000	20000	50	1.6	223.00	

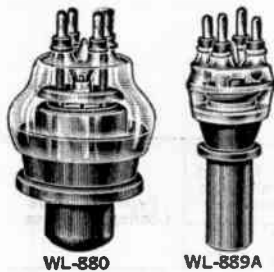
See notes at end of this table on next page.

(PLIOTRONS continued on next page)

Prices subject to change without notice.



# WESTINGHOUSE ELECTRONIC TUBES



WL-880

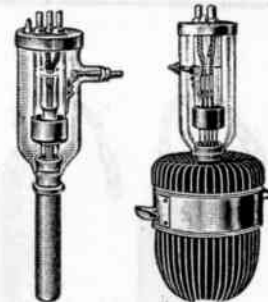
WL-889A

## PLIOTRONS— Cont'd

MODULATORS

AMPLIFIERS

OSCILLATORS



WL-891, 892

WL-892R

Type Number	Filament		Max. Plate D-C** Volts	Max. Plate D-C** Ma.	Max. Plate Diss** Watts	Plate Output Watts Class C	Amp. Factor	Max. MC For 100% Input	List Prices
	Volts	Amps.							
★ WL-892R	22.0	60.00	12500	2000	4000	14000	50	1.6	\$ 362.00
† WL-893A	20.0	188.00	20000	4000	20000	50000	36	5	630.00
† WL-893AR	20.0	183.00	20000	4000	20000	50000	36	5	1,150.00
† WL-895	19.0	138.00	17000	9000	40000	100000	37	6	866.00
† WL-895R	19.0	138.00	17000	9000	20000	90000	37	6	1,180.00
WL-1000T	7.5	17.0	7500	750	1000	4625	35	50	125.00
WL-1623	6.3	2.50	750	100	25	55	20	60	4.05
WL-5604	11.0	176.00	12500	3000	10000	22500	19.5	22.5	540.00
WL-5619	11.0	176.0	12500	3000	20000	22500	19.5	22.5	390.00
WL-5671	11.0	285.0	15000	8000	25000	75000	39	10	1,225.00
WL 5691	6.3	0.60	275	2.3	1	.....	70	.....	7.75
WL 5692	6.3	0.60	275	6.5	1.75	.....	20	.....	7.75
WL 5693	6.3	0.30	300	3.0	2.0	.....	.....	.....	6.40
WL-5736	6.0	60.0	5000	1400	2500	4100	22	60	144.00
WL-8000	10.0	4.50	2000	250	125	375	16.5	30	14.50
WL-8003	10.0	3.25	1350	250	100	256	12	30	14.00
WL-8005	10.0	3.25	1250	200	75	170	20	60	7.40
WL-8025A	6.3	1.92	1000	80	40	35	18	500	10.00

\*\* Max. C.C.S. ratings in Class C oscillator service.

★ Two filament strands in series with large post at neutral junction; operate in series at 22 volts or two phase with 11 volts per strand.

★★ This rating applies only with forced air cooling.

° Per unit, heater can be arranged to operate from either a 6.3 or 12.6 volt supply.

† Six filament strands connected from each post to floating neutral. See individual data sheets for connections.

‡ Three filament terminals Y-connected in 3 phase.

§ Three filament terminals Y-connected in 3 phase with neutral center terminal.

¶ or R Indicates forced air-cooled radiator.

## KENOTRONS — Vacuum Rectifiers



WL-456

Type Number	Filament		Anode		Amp. Average	Type of Cooling	List Price
	Volts	Ampere	Volts Peak Inverse	Amp. Peak			
WL-456	11.0	20	140000	0.50	0.06	Air	\$100.00
WL-481	2.5	5	25000	0.015	0.005	Air	4.50
WL-579B	2.5	6	20000	0.27	0.025	Air	13.20
WL-585	5.0	1.1	1500	0.011	0.003	Air	17.25
WL-608			R E P L A C E M E N T O N L Y				168.00
WL-612			R E P L A C E M E N T O N L Y				299.00
WL-613			R E P L A C E M E N T O N L Y				210.00
WL-616	20.0	24.5	150000	0.75	0.25	Air	230.00
WL-660	10.0	10	230000	0.10	0.03	Air	273.00
WL-836	2.5	5	5000	1.0	0.25	Air	9.00
WL-8020	5.0	6	40000	0.75	0.1	Air	22.00

## PHANOTRONS — Gas and Mercury Vapor Rectifiers

Type Number	Filament		Anode		Amp. Average	Type of Cooling	List Price
	Volts	Ampere	Volts Peak Inverse	Amp. Peak			
WL 3B22/1C	2.5	6.0	725	4.0	1.0	Air	7.10
WL 4B24/3C	2.5	11.5	725	10.0	2.5	Air	8.90
WL-575A	5.0	10.0	15000	6	1.5	Air	24.25
WL-670A	2.5	24	1000	9.5	6.0	Air	15.75
WL-815	2.5	2	7500	.5	.125	Air	1.65
WL-857B	5.0	30	22000	40	10.0	Forced Air	209.00
WL-866A	2.5	5	10000	1	0.25	Air	1.95
WL-869B	5.0	18	20000	10	2.5	Forced Air	132.00
WL-872A/872	5.0	7.5	10000	5	1.25	Air	8.20
WL-895B/32	5.0	4.5	2000	15	2.5	Air	\$14.00
WL-895L/104	5.0	10.0	3000	40	6.4	Air	38.00
WL-8008			Same as WL-872A/872 except for Base				8.20



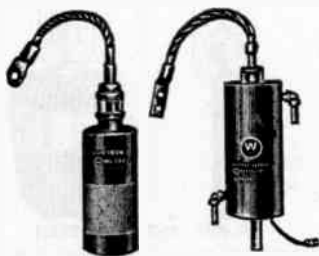
WL-866A



WL-872A/872



# WESTINGHOUSE ELECTRONIC TUBES



WL-5550/681 WL-5552/651

## IGNITRONS

### WELDER CONTROL SERVICE

Type Number	Size	RMS Volts Range	Max. KVA Demand and Corresponding Average Current		Max. Aver. Current and Corresponding KVA Demand		Type Cooling	List Price	
			KVA	Amps	KVA	Amps			
WL-5550/681	A	200-600	300	12.1	100	22.4	Clamp	\$ 44.00	
WL-5551/652	B	200-600	600	30.2	200	56	Water	72.50	
WL-5552/651	C	200-600	1200	75.6	400	140	Water	110.00	
WL-5553/655	D	200-600	2400	192.0	800	355	Water	241.00	
WL-5554/679		2400	1200	75.0	600	113	Water	173.00	
WL-5555/653B		2400	2400	135.0	1105	207	Water	336.00	
WL-654/659		Replacement only						Water	100.00

## IGNITRONS

### POWER RECTIFICATION SERVICE



WL-5555/653B

Type Number	D-C Output Voltage	Max. Average Amps Per Tube			Type Cooling	List Price
		Continuous	2-Hour Overload	1 Min. Overload		
WL-5554/679	300	100	150	200	Water	\$173.00
	600	75	112.5	150		
WL-5555/653B	300	200	300	400	Water	336.00
	600	150	225	300		

## MISCELLANEOUS



KX-642

Type Number	Use	Cathode	D-C Anode Volts Min	D-C Operating Current Ma	D-C Operating Volts	Regulation Volts (5-40 Ma)	List Price
OA3/VR75	Voltage Regulator	Cold	105	5-40	75	5	\$1.35
OC3/VR105	Voltage Regulator	Cold	133	5-40	105	2	1.35
OD3/VR150	Voltage Regulator	Cold	185	5-40	150	4	1.30

Type Number	Use	Volts, RMS		Current		List Price
		Breakdown	Maximum Operating	Maximum 2 Sec.	Maximum 10 Min.	
KX-642	Protector	300-500	230	50 Amps.	7 Amps.	\$12.00

Prices subject to change without notice.

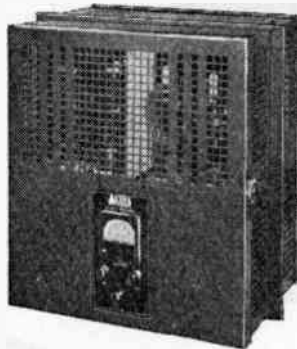
# Amplifiers

# ALTEC

LANSING CORPORATION

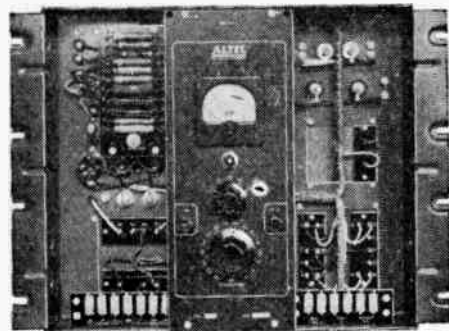
1161 N. Vine Street  
Hollywood 38, Calif.

161 Sixth Avenue  
New York 13, N.Y.



**A-256B AMPLIFIER**

Designed for exacting broadcast, public address and recording needs where high power is required. May be operated in parallel to produce 150 watts.



**A-287W AMPLIFIER**

The A-287W Amplifier is available for use where very high audio power is required. It is of the single stage push-pull type. Self-contained power supply. May be operated in parallel to produce 500 watts. Must be operated from driver amplifier such as A-127.

	A-127	A-287W AMPLIFIER	A-256B AMPLIFIER
<b>GAIN</b>	Max. 66 db from 100,000 ohm input.	12 db from 8000 ohm imp. driver.	50db; 500 ohm input. Bridging input 5000 ohms. 20 db gain control in two db steps.
<b>FREQUENCY RANGE</b>	±1 db 20-20,000 cps.	±1 db 100-10,000 cps.	±1 db 20-20,000 cps.
<b>POWER OUTPUT</b>	15 watts at less than 8% intermodulation or 2% tot. harm.	250 watts at less than 5% tot. harm. 100-10,000 cps.	65 watts at 8% intermod. 75 watts at 2% tot. harmonics.
<b>NOISE LEVEL</b>	-42 dbm (ref. .001 watt)	-20 dbm (ref. .001 watt).	-45 dbm (.001 watt ref.).
<b>INPUT IMPEDANCE</b>	Grid input 100,000 ohms.	8000 ohms CT. Available with 10 or 20 ohms. Requires 15 watts driver power.	500 ohm. 5000 ohm bridging.
<b>OUTPUT IMPEDANCE</b>	10 or 20 ohms.	Tapped for loads from 2.25 to 20 ohms.	Taps for 4, 8 and 16 ohm loads.
<b>POWER REQUIREMENTS</b>	105, 117 or 130 volts, 50-60 cycles, 110 watts. Fused.	105, 117 or 130 V, 50-60 cycles, 700 watts. Fused.	105, 117 or 130 V, 50-60 cycles, 200 watts. Fused.
<b>POWER AVAILABLE EXTERNALLY</b>	6.3 V AC at 2.5 amp.; 350 V DC at 20 ma.	None.	.6 amp at 6.3 V. Fil. and 5 ma at 300 V.
<b>TUBES USED</b>	1-6J7, 1-6J5, 2-6L6G, 1-5U4G.	2-805; 2-866A.	2-6SN7; 2-6SJ7; 2-807; 2-5R4GY; 4-VR150/ODS.
<b>DIMENSIONS</b>	H-8 3/4"; W-19"; D-7".	H-19 1/4"; W-19"; D-12 1/2".	H-14"; W-19"; D-9".
<b>WEIGHT</b>	18 lbs.	141 lbs.	60 lbs.
<b>LIST PRICE</b>	\$246.67.	\$913.33.	\$393.33.

\*Particularly suitable for driving A-287-W 250-watt Class B amplifier; provided with output transformer with tertiary winding for inverse feedback.

## Pre-Amplifiers, Mixers and Power Supply (not illustrated)

Perfect broadcast components for pre-amplifying and mixing microphones and variable reluctance pickups. Designed for fabrication into rack or console. May be mounted in 3 1/2" chassis. Mixing control part of A-424A and A-425B. Same dimensions: L-10 1/8"; W-2 3/4"; D-7 3/8".

**A-425B** Pre-mixing amplifier for microphones. Drives A-426B. 30, 250, 500 ohm inputs; 47 db gain; 22,000 ohm output imp.; ±1 db 20-20,000 cps; 10 dbm at 2% tot. harm. and 1% IM; noise -73 dbm; 6.3 vac at .6 amp., 300 vdc at 7.5 ma req. pwr. Tubes: 2-6J7 or 1620. **List Price: \$138.00**

**A-424A** equalized for v.r. pickups; drives A-426B. Operation same as A-425B. 25 db gain; noise -72 dbm; output 12 dbm at 4% IM and 1% tot. harm.; load imp., 22,000 ohms; 6.3 vac at .6 amp, 300 vdc at 10 ma req. pwr. Tubes: 2-6J7 or 1620. **List Price: \$132.00**

**A-426B** Line Amplifier. 20,000 ohm control input; gain 56 db; output imp. 80, 250, 500 ohm; ±1 db 40-15,000 cps; noise -60 dbm; 6.3 vac at .6 amp, 300 vdc at 12 ma, rep. pwr. Tubes: 1-6J7 or 1620, 1-6J5. **List Price: \$128.00**

**P-505B** supplies all power for A-424A, A-425B, A-426B. Tube: 1-6X5GT. **List Price: \$48.00**

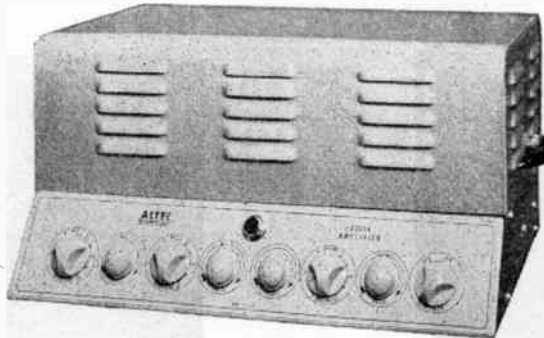


# Amplifiers



1161 N. Vine Street  
Hollywood 38, Calif.

161 Sixth Avenue  
New York 13, N.Y.



**A-323B AMPLIFIER**

2 channel 18 watt general-purpose portable amplifier designed for high quality reproduction of speech and music from records, radio and microphone.

**A-324A AMPLIFIER**

4 channel portable 18 watt Public Address amplifier designed for use in high quality public address and music systems.



**A-332A AMPLIFIER**

Finest quality 18 watt portable Public Address amplifier designed for use with the 21B Microphone, eliminating need for external power supplies. Two independent microphone inputs plus one for variable reluctance pickup. Each input has separate gain and bass controls. Overall high frequency droop control provided.



## SPECIFICATIONS

	A-323B	A-332A	A-324A
<b>GAIN</b>	117 db (phono input). 77 db (radio input).	110 db. (mic. No. 1; 110 db. (mic. No. 2); 106 db (phono).	102 db (mic. No. 1 input) 102 db. (mic. No. 2 input) 72 db (phono inputs Nos. 1 & 2).
<b>GAIN CONTROL</b>	Continuously variable.	Continuously variable.	Continuously variable. Individual controls for microphone inputs. Dual fader type control for phono inputs.
<b>FREQUENCY RESPONSE</b>	20-20,000 cycles $\pm 1$ db.	See Literature.	20-20,000 cycles $\pm 1$ db.
<b>POWER OUTPUT</b>	18 watts.	18 watts.	18 watts.
<b>DISTORTION</b>	2% total harmonics—less than 8% 1M.	2% total harmonics.	2% total harmonics—less than 8% 1M.
<b>NOISE LEVEL AT FULL GAIN</b>	—80 db (.006 watt reference) high gain input; —50 db (.006 watt reference) low gain input.	—27.2 dbm on mic. channels (.001 watt ref.); —22.8 dbm on phono (.001 watt ref.).	—20 db (.006 watt reference) microphone input; —45 db (.006 watt reference) phono input.
<b>INPUT IMPEDANCE</b>	Both inputs, phono and radio, are 500,000 ohms.	For Altec 21B mic. and v.r. pickup.	Microphone No. 1 30-250-500/600 ohms; Microphone No. 2 30-250-500/600 ohms; Phono Nos. 1 and 2 500,000 ohms.
<b>OUTPUT IMPEDANCE</b>	2.5-5, 8-12, 16-24 ohms.	2, 4, 8, 16 ohms.	2.5-5, 8-12, 16-24 ohms.
<b>POWER SUPPLY</b>	110-125 V. AC, 50-65 cycles, 110 watts. Fused.	117 V. AC, 50-60 cycles.	110-125 V. AC, 50-60 cycles. Fused.
<b>TUBES USED</b>	2—6J7, 1—6J5, 2—6L6G, 1—5U4G.	4—6SJ7; 2—6J5; 2—6L6G; 1—5U4G.	3—6J7, 1—6J5, 2—6L6G, 1—5U4G.
<b>DIMENSIONS</b>	9" x 12" x 9" high including cover.	W-17"; D-11"; H-10" including cover.	9" x 12" x 9" high including cover.
<b>WEIGHT</b>	12 lbs.	25 lbs.	11 lbs.
<b>FINISH</b>	Dark Grey Crackle, Chrome Operating Panel.	Grey.	Dark Grey Crackle; Chrome Operating Panel.
<b>LIST PRICE</b>	\$177.32.	\$264.00.	\$240.00.

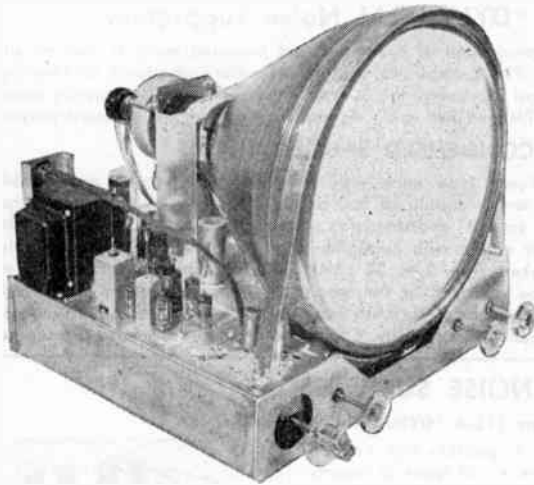
## TV and Home Music Systems

# ALTEC

LANSING CORPORATION

1161 N. Vine Street  
Hollywood 38, Calif.

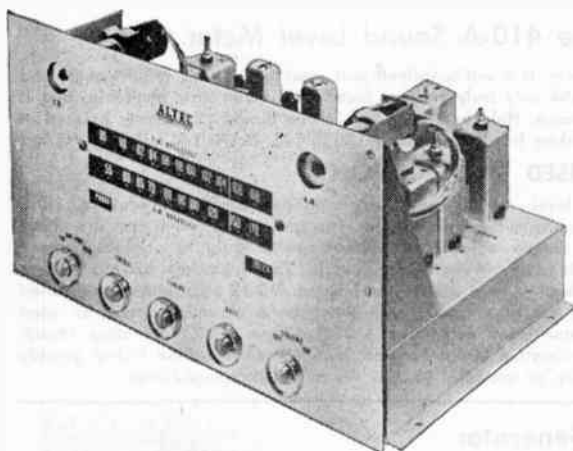
161 Sixth Avenue  
New York 13, N.Y.



ALC-205

Complete TV receiving chassis with 16" picture tube is designed for installation in custom-built units, or for use with Altec Home Music Systems. Positive tuning. Automatic gain control. Two audio outputs: one drives speaker directly; other designed for connection to ALTEC ALC 101B Tuner or to high impedance input of an audio amplifier with associated speaker. ALC-205 does not include speaker. Dimensions: H-20 1/2"; D-20 1/2"; W-20 1/2".

Customer net price: \$376.00

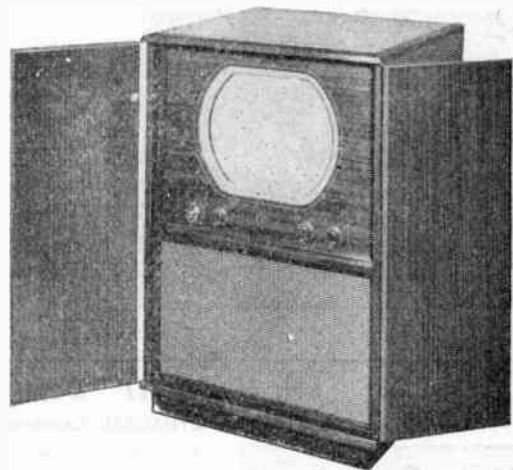


ALC-101B FM-AM RADIO TUNER

Affords increased sensitivity and optimum reception quality on both AM and FM bands. Superior tuned radio frequency (TRF) circuit is provided for AM band. Separate tuning eyes for AM and FM. Specially equalized phono input circuit for magnetic pickup. Stepped low-pass filter to suppress surface noise, enhance record quality. Front panel finished in antiqued brass houses all AM-FM Phono-TV switches as well as tone controls and dials. Dimensions: H-9 1/2"; W-15"; D-10". P-503 Power Supply is required only when 101-B Tuner is not used with A-323C Amplifier.

Customer net prices:

ALC-101 Tuner & A-323C Amplifier, \$357.50  
ALC-101 Tuner & P-503 Power Unit, \$299.00



ALC-206

Combines ALC-205 TV chassis with the ALTEC 400B loudspeaker, in a beautiful console cabinet available in mahogany or blonde oak. Unit provides professional sound and picture quality.

Customer net price: \$469.00



### 604B DUPLEX SPEAKER AND N-1000B DIVIDING NETWORK

Universally regarded as the standard for optimum quality reproduction, the 604B Duplex Speaker affords a complete two-way sound source combining high and low frequency units in a single metal frame. Excellent frequency response (30 to 16,000 cps) more than spans FM range. Built-in multicellular horn loads high frequency unit; properly distributes the "highs."

Dimensions: Dia. 15 1/2"; Depth 11 1/2".

Customer net price: \$125.00

N-1000B Dividing Network, designed for crossover frequency of 1000 cps, insures that low frequency cone operates as a stiff piston.

Customer net price: \$18.00

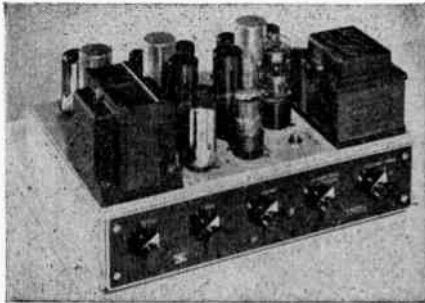


A-323C AMPLIFIER

Specially designed for use with other components of the Home Music System, the A-323C provides faithful, distortion-free amplification of audio outputs from the tuner, record changer and TV chassis (ALC-205). Amplifier utilizes full-range response and dynamic resources of Duplex speaker. Undistorted 18 watt output is more than adequate for any home installation.  $\pm 1$  db frequency response from 20 to 20,000 cps. Dimensions: H-8 1/4"; W-13"; D-9".



## H. H. SCOTT Type 210-A Laboratory Amplifier with \*DYNAURAL Noise Suppressor



Brilliant, realistic, reproduction of broadcast and recorded music is assured with the H. H. Scott Type 210-A amplifier. Built to laboratory standards of electrical, mechanical, and musical excellence, this 20-watt amplifier assures satisfactory custom performance in both FM and AM radio reproduction as well as in record playing.

### CONDENSED SPECIFICATIONS

True \*Dynamic bond-pass type noise suppressor for both scratch and rumble. Extended frequency range equalized for standard, long playing, and 45-rpm records, with tone control characteristics designed to match all recording characteristics. 20-watt output with negligible distortion provides proper damping and matches all speakers from 2 to 20 ohms. Calibrated pickup-matching adjustment. Professional-type preamplifier for magnetic pickups. Distortion and whistle filter for AM and old records. Variable bass and treble boosts. Squelch circuit. Minimum controls — maximum flexibility. Compact design with over-size components.

## H. H. SCOTT \*DYNAURAL NOISE SUPPRESSORS

Type 111-A \*DYNAURAL Converter and Type 112-A \*DYNAURAL Preamplifier



True \*Dynamic noise suppression is possible with existing radio phonographs and amplifiers on all types of records with these new \*DYNAURAL units. Both scratch and rumble are reduced without fixed loss of "highs" or "lows". Add realism to your music reproduction by two simple steps.

1. Plug in the \*DYNAURAL unit between your pickup and amplifier.
2. Insert the socket adaptor under one of the power tubes.



### CONDENSED SPECIFICATIONS

Type 111-A — For all crystal and other high-level pickups. Single \*DYNAURAL control. Adaptor provides for power-supply connection to 6V6, 6L6, 6F6, 6K6, or other tubes having similar base connections.

Type 112-A — Same as Type 111-A but including professional-type

preamplifier for low-level magnetic pickups and having extended frequency range. Includes variable **TURNOVER** and **RANGE** controls; compensating for all types of recordings and reducing distortion on old recordings. Type 20-B Power Supply may be used when power cannot be obtained from set or amplifier.

## H. H. SCOTT Type 410-A Sound Level Meter



The H. H. SCOTT Type 410-A Sound Level Meter, is a self-contained unit meeting all ASA requirements and weighing only a little over two pounds. It is the only truly modern sound-level meter now available, and is unsurpassed for speed, accuracy, and convenience. Held and operated in one hand, it is merely pointed at the noise source and an accurate reading taken from the meter. **ELECTRICAL MANUFACTURING** Product Design Award Winner.

### CONDENSED SPECIFICATIONS

Range: 34 to 140 db above ASA reference level. All standard ASA weighting curves are provided: flat, 70 db, and 40 db. Humidity-sealed crystal diaphragm-type microphone. Two-speed type meter provides either standard ASA ballistics or heavy damping. Simple adjustment resets amplifier gain to original factory-calibrated value. Only 1 1/4" long, 2 1/2" diameter. Weight 2 1/2 pounds. The following accessories are available: Type 410-X1 Carrying Case (rigid leather type construction), Type 410-X2 Microphone calibration curve, Type 410-X3 low-capacitance, 15-foot, extension cable with microphone mounting (must be used with Type 410-X8), Type 410-X8 input adaptor (used with Type 410-X3), Type 410-X4 mounting tripod. For vibration measurement, the Type 410-X5 Vibration Integrator and Type 410-X6 Vibration Pickup provide measurements of vibration displacement, velocity, or acceleration over the audio frequency range.

## H. H. SCOTT Type 810-A Noise Generator

A compact source of an electrical signal equivalent to "white" noise in the audio-frequency range. Equipped with additional ranges providing RF noise and noise simulating the ASA "noise of general character" as specified in ASA Standard Z 24-3-1944. Type 20-B Power Supply may be used to power this unit.



## H. H. SCOTT \*Dynamic Noise Suppressor for Broadcast Stations

Type 910-C Dynamic Noise Suppressor the most widely used instrument of its type in the world adopted by leading stations famous for their recorded programs • Features reduction of both scratch and rumble, complete remote control, and performance characteristics in keeping with highest broadcast station

standards • Includes illuminated VU meter for monitoring • For applications where all turn-table channels can be fed through this single unit.

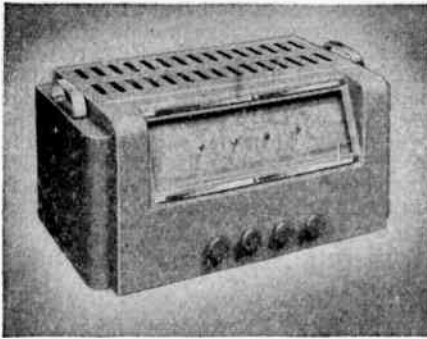
The Type 912-A \*Dynamic Noise Suppressor. A smaller model designed primarily for use with an individual turn-table.

Write for latest information and specifications on the above products. \*Licensed under U. S. and foreign patents pending and issued. The name **DYNAURAL** is a trademark of H. H. Scott, Inc.

# BELL SOUND EQUIPMENT

## 15 WATT BELL AMPLIFIER

## Model 3715



- Three Input Circuits.
- Illuminated Control Panel.
- Beam Power Output Tubes.
- Simplified Operation.
- Exceptional Tone Quality.

This amplifier is as fine in performance as it's functional and modern design suggests. The beautiful gray and silver case, with it's illuminated, full-view control panel, is high lighted by distinctive red plastic control knobs. The amplifier has an undistorted output of 15 watts with a peak of 18 watts. It utilizes push-pull beam power output tubes, inverse feedback that reduces harmonic distortion, and has three input channels with separate volume controls that permit mixing of two microphones and a phonograph simultaneously.

### SPECIFICATIONS

#### Model 3715

**Power Output:** 15 Watts at less than 5%. Peak Power 18 Watts.  
**Freq. Response:** Plus or Minus 1 db. 30 to 18,000 Cycles.  
**Overall Gain:** Microphone Channels 120 db.; Phono Channel 87 db.  
**Hum Level:** -68 db. Below Rated Output.  
**Inputs:** 2 Microphone; 1 Phonograph.  
**Input Imped:** Microphone Channels 10 Megs; Phono Channel 1/2 Meg.

**Controls:** 2 Microphone Volume Controls; 1 Phono Volume Control; 1 Tone Cont. W/AC Switch.  
**Output Imp:** 2.5; 4; 8; 15; 250; 500 ohms.  
**Power Cons:** 100 Watts; 117 Volts; 50-60 Cycles.  
**Tubes:** 2-7B7; 1-6SF5; 1-6N7; 2-6V6G; 1-5U4G.  
**Dimensions:** 11 1/2" Deep; 8" High; 16 1/2" Wide.  
**Shipping Weight:** 82 lbs.

## 25 WATT BELL AMPLIFIER

## Model 3725

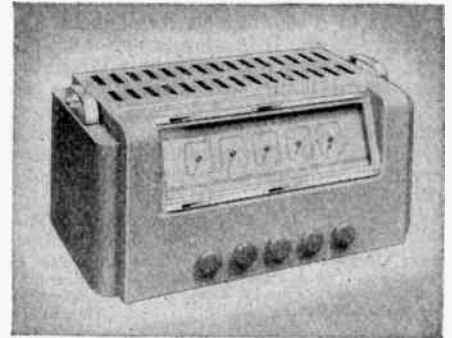
An ideal Amplifier of medium wattage. This seven tube model has proven to be one of the most popular units that Bell has ever manufactured. For a good all around amplifier of medium price it cannot be beaten. Experienced engineering and time proven circuits has made it one that thousands of users rely on day in and day out for continuous satisfactory service. The Model 3725 is truly the "Work Horse" of Bell's entire amplifier line.

### SPECIFICATIONS

#### Model 3725

**Power Output:** 25 Watts at Less than 5%. Peak Power 33 Watts.  
**Freq. Response:** Plus or Minus 2 db. 50 to 18,000 Cycles.  
**Overall Gain:** Microphone Channels 122 db.; Phono Channel 89 db.  
**Hum Level:** -65 db. Below Rated Output.  
**Inputs:** 2 Microphone; 1 Phonograph.  
**Input Imped:** Micro. Channels 10 Megs; Phono Channel 1/2 Meg.  
**Controls:** 2 Microphone Volume Con-

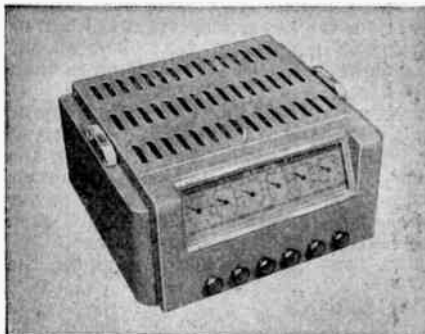
trois; 1 Phono Vol. Control; 1 Bass Tone Cont.; 1 Treble Tone Cont. W/AC Sw.  
**Output Imp:** 2.5; 4; 8; 15; 250; 500 ohm.  
**Power Cons:** 150 Watts; 117 Volts; 50-60 Cycles.  
**Tubes:** 2-7B7; 1-6SF5; 1-6N7; 2-6L6G; 1-5U4G.  
**Dimensions:** 11 1/2" Deep; 8" High; 16 1/2" Wide.  
**Shipping Weight:** 38 lbs.



- Treble and Bass Boost.
- Ultra-Modern Design.
- Three Input Circuits.
- Illuminated Control Panel.
- Built to Last—Easy to Service.

## 50 WATT BELL AMPLIFIER

## Model 3750



This unit offers "powerhouse" performance with sufficient wattage to cover 90% of all commercial sound requirements. It has power to spare and has been designed for the ultimate in flexibility and operation. Three microphones and a phonograph can be simultaneously mixed by the operator. New tone control circuits, operating in an inverse feedback network, provide extremely wide tone adjustments with greatly reduced distortion. For example, the Bass Control is adjustable from flat response to plus 10 db or to minus 20 db and the treble control from plus 8 db to minus 22 db, 30 db overall.

### SPECIFICATIONS

#### Model 3750

**Power Output:** 50 Watts at Less than 5%. Peak Power 88 Watts.  
**Freq. Response:** Plus or Minus 1 db., 30 to 15,000 Cycles.  
**Overall Gain:** Microphone Channels 125 db.; Phono Channel 90 db.  
**Hum Level:** -67 db. Below Rated Output.  
**Inputs:** 3 Microphone; 1 Phonograph.  
**Input Imped:** Microphone Channels 10 Megs; Phono Channel 1/2 Meg.  
**Controls:** 3 Microphone Volume Controls; 1 Phono Volume Control; 1 Bass Tone Cont.; 1 Treble Tone Cont. W/AC Switch.

**Output Imp:** 2.5; 4; 8; 15; 250; 500 ohms.  
**Power Cons:** 260 Watts; 117 Volts; 50-60 Cycles.  
**Tubes:** 3-7C6; 3-6SC7; 1-6SN7; 2-6L6G; 1-5U4G; 1-6R4GY; 1-5V4G.  
**Dimensions:** 16 1/2" Deep; 8" High; 16 1/2" Wide.  
**Shipping Weight:** 62 lbs.

*Model 3750-R* same as above but provided with a relay to permit remote operation of "B" supply.

- Rugged Construction.
- Four Inputs.
- Bass and Treble Boost.
- Available for Remote Standby Operation.
- Excellent Frequency Response.

Mfg. by THE BELL SOUND SYSTEMS, Inc. •

# BELL SOUND EQUIPMENT

## 6 WATT BELL MOBILE AMPLIFIER

Model 3706-M



- Phono & Micro Inputs.
- Chassis Removable for Servicing.
- Fits under most dashboards.
- Battery Stand-by Switch.

Here is a brand new addition to the time-proven Bell line of amplifiers. A compact, rugged and amazingly efficient low wattage mobile amplifier. It was especially designed for use by Municipal Police and Fire Departments, Safety Patrols, Traffic Control and outdoor audible advertising. The tubes and vibrator can be inspected or changed without disturbing the installation because the chassis and front panel are so constructed that they easily slide out of the case. In an emergency a whole new spare unit can be inserted in the case. It will operate on 6 volts DC or 117 volts 60 cycles and is provided with a standby switch to conserve battery drain. It comes complete with two cables. Any high impedance microphone can be used with this amplifier.

### SPECIFICATIONS

Model 3706-M

Power Output: 6 Watts at Less than 5%.  
Peak Power 8 Watts.  
Freq. Response: Plus or Minus 2 db., 60 to 15,000 Cycles.  
Overall Gain: Microphone Channel 112 db.;  
Phono Channel 75 db.  
Hum Level: —60 db. Below Rated Output.  
Inputs: 1 Microphone; 1 Phonograph.  
Input Imped: Microphone Channel 10 meg.;  
Phono Channel 1 meg.

Controls: 1 Microphone and Phono Volume Control with Power Switch; 1 Battery saver stand-by switch.  
Output Imp: 4; 8; 15 ohms.  
Power Cons: 45 Watts; 117 Volts; 60 Cycles; 8 Amperes; 6 Volts D.C.  
Tubes: 1-6SJ7; 1-6SN7; 1-6L6; 1-6X5GT.  
Dimensions: 10" Deep; 6½" High; 5½" Wide.  
Shipping Weight: 15 lbs.

## 25 WATT BELL MOBILE AMPLIFIER

Model 3723-M

This unit is another new member of the Bell line of Amplifiers. It is a medium wattage mobile Amplifier of the most modern design. It has a microphone input and a built-in phono unit. The volume of both the microphone and phono are individually controlled and in addition, a tone control is provided to permit individual selection or adjustment of the bass or treble response. There is also a stand-by switch provided to turn off the "B" supply while the filaments remain heated. This permits economical operation and extends the life of the battery power supply.

### SPECIFICATIONS

Model 3723-M

Power Output: 25 Watts at Less than 5%. Peak Power 38 Watts.  
Freq. Response: Plus or Minus 2 db. 30 to 15,000 Cycles.  
Overall Gain: Microphone Channel 115 db.; Phono Channel 82 db.  
Hum Level: —60 db. Below Rated Output.  
Inputs: 1 Microphone; 1 Phonograph.  
Input Imped: Microphone Channel 10 meg.; Phono Channel ½ meg.  
Controls: 1 Microphone Volume Control; 1 Phono Volume Control; 1

Tone Control W/AC Switch, 1 Standby Switch, 1 Phono motor off-on switch.  
Output Imp: 2.5; 4; 8; 15; 250; 500 ohms.  
Power Cons: 115 Watts; 117 Volts 60 Cycles; 19 Amperes; 6 Volts D.C.  
Tubes: 1-7B4; 1-6C5; 1-6SN7; 2-6L6; 2-6X5GT.  
Dimensions: 11½" Deep; 10" High; 16½" Wide.  
Shipping Weight: 40 lbs.



- Built in Phono unit.
- Standard Bell Cabinet.
- Illuminated Control Panel.
- Remote Drive on Controls.
- Heavy Steel Construction.

## 30 WATT BELL MOBILE AMPLIFIER

Model 3728-M



- Astatic AB-8M Mobile Pickup.
- Circuit Breaker Protection on 6 volts.
- Bass Boost and Treble Compensators.
- Power Economizer Switch.
- Three Input Channels.
- Heavy Duty Dual Vibrator.

One of the most completely satisfying mobile Amplifiers ever offered for general use. The "Moto-Master" combines a 30-watt amplifier of tone and quality, with a phono pickup of new design, that plays all 12" and smaller records. Market research proves it's capacity is more than ample for the majority of needs.

This high gain unit operates on either a 6 volt DC storage battery or 117 volt 60 cycle AC line current. Conversion from one type of current to another is achieved by simply removing one plug and inserting the other. Current consumption on battery is reduced by a power economizer switch. High fidelity; improved wide range tone controls; beam power output tubes; and two microphones inputs and one phono input, each with separate volume controls are features of the "Moto-Master".

Turntable speed of 78 r.p.m. New type crystal pickup stays "in the groove."

### SPECIFICATIONS

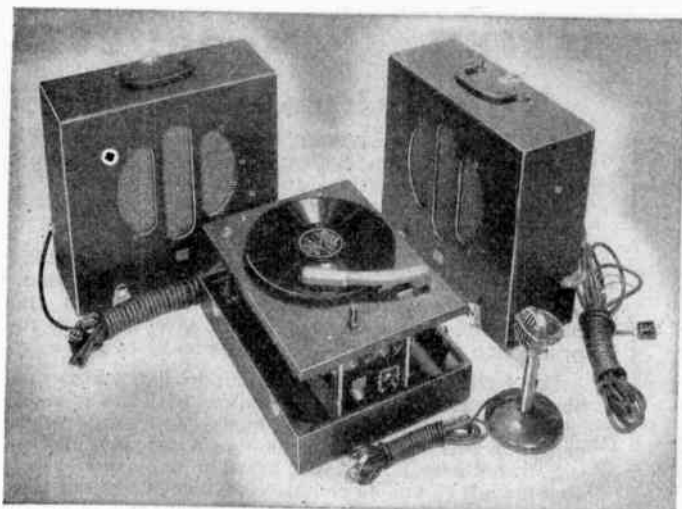
Model 3728-M

Power Output: 30 watts at Less than 5%.  
Peak Power 45 Watts.  
Freq. Response: Plus or Minus 2 db. 50 to 14,000 Cycles.  
Overall Gain: Microphone Channels 120 db.; Phono Channel 84 db.  
Hum Level: —60 db. Below Rated Output AC; —58 db. on DC.  
Inputs: 2 Microphone; 1 Phonograph.  
Input Imped: Microphone Channels 10 Meg.; Phono Channel 1 Meg.  
Controls: 2 Microphone Volume Controls;

1 Phono Volume Control; 1 Bass Tone Cont; 1 Treble Tone Cont. with Power Switch; 1 Stand by Switch; 1 Phono OFF-ON Switch.  
Output Imp: 2.5; 4; 8; 15; 250; 500 ohms.  
Power Cons: 22 amp. 6 volts DC; 120 watts; 117 volts; 60 Cycles.  
Tubes: 1-7Y4; 2-7Z4; 3-7B4; 1-6SL7; 2-6L6GA.  
Dimensions: 16½" Deep; 10" High; 16½" Wide.  
Shipping Weight: 60 lbs.

Mfg. by THE BELL SOUND SYSTEMS, Inc.

# BELL SOUND EQUIPMENT



## 10 WATT BELL PHONO-PA SYSTEM

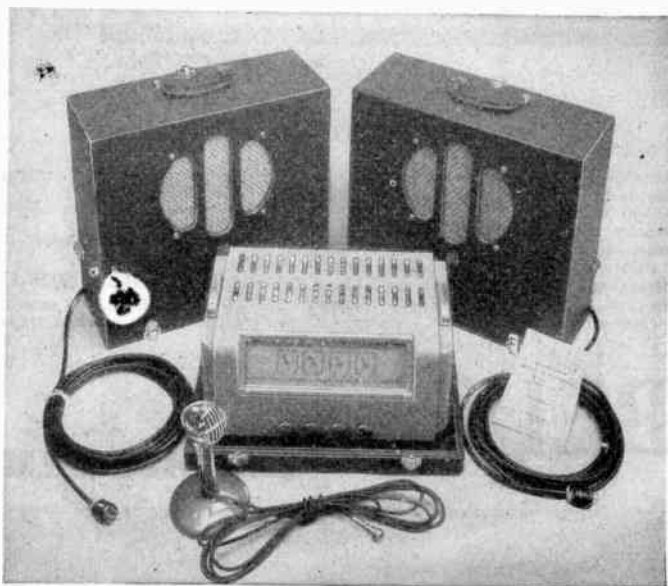
### SPECIFICATIONS Model PA-3710-P

- Amplifier: 3710.
- Speakers: 2-10" Heavy Duty P.M.
- Cables: 2-25' Type SV with Plugs.
- Phono Equipment: 78 RPM Turntable with Crystal Pickup.
- Microphone: JT-30 with desk type stand.
- Microphone Cable: 15' Shielded Rubber with Connector.
- Microphone Stand: Furnished with Micro.
- Case: Model 3710, 3 piece Portable.
- Dimensions: 12" Deep; 18½" High; 15¾" Wide.
- Shipping Weight: 50 lbs.

## 15 WATT BELL SINGLE CASE PA SYSTEM

### SPECIFICATIONS Model PA-3715-E

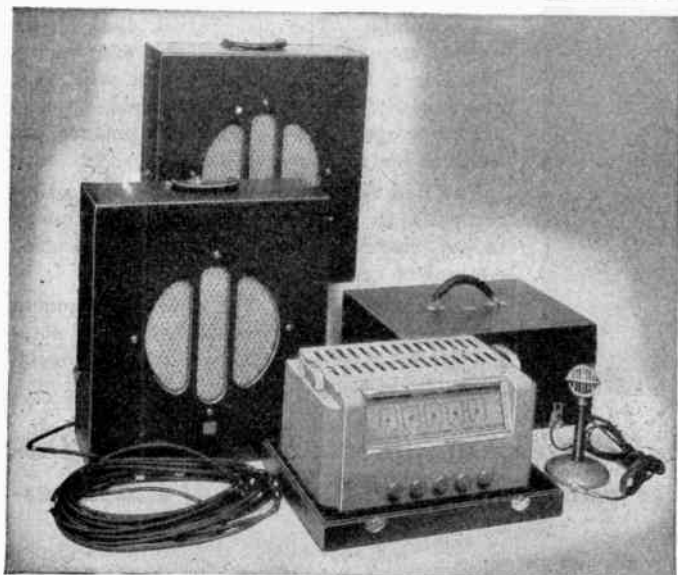
- Amplifier: 3715 (See page B-5).
- Speakers: 2-10" Heavy Duty P.M.
- Cables: 2-25' Type SV with Plugs.
- Built-in Phono Equipment: None.
- Microphone: JT-30 with desk-type stand.
- Microphone Cable: 15' Shielded Rubber with Connector.
- Microphone Stand: Furnished with Micro.
- Case: Model 15 Three pc.
- Dimensions: 13¾" Deep; 19¾" High; 17¾" Wide.
- Shipping Weight: 62 lbs.



## 25 WATT BELL DUO-CASE PA SYSTEM

### SPECIFICATIONS Model PA-3725-E

- Amplifier: 3725 (See Page B-5).
- Speakers: 2-12" Heavy Duty P.M. with Line Matching Trans.
- Cables: 2-50' Type SV with Plugs.
- Built-in Phono Equipment: None.
- Microphone: JT-30 with desk type stand.
- Microphone Cable: 15' Shielded Rubber covered with Connector.
- Microphone Stand: Furnished with Micro.
- Case: 1 Model 95. 1 Model 14-A.
- Dimensions: Model 14-A, 13½" Deep; 10¾" High; 18" Wide.
- Model 95, 10¾" Deep; 19¾" High; 19" Wide.
- Shipping Weight: Complete System, 90 lbs.



Mfg. by THE BELL SOUND SYSTEMS, Inc. •

# BELL SOUND EQUIPMENT

## 25 WATT BELL PHONO-PA SYSTEM

Model 2078



### The School-Master

The Bell "Schoolmaster" has been received with great public acclaim. This unit has proven extremely popular with institutions and schools throughout the country. One city school system has over one hundred of these units in operation.

Practically every need for high quality public address and music coverage is met with this system. With its governor-controlled, two speed motor and professional type tone arm, it will give excellent reproduction of lateral cut records from 6" to 16".

For auxiliary equipment, the Model 98 speaker has been designed. This unit is identical with the speaker portion or top half of the model 2078 and comes complete with a P-12-Q speaker or equal, line matching transformer, fifty foot speaker cable and plug. Bell models 93 and 95 complete with speakers are also recommended for use with this equipment.

#### SPECIFICATIONS Model No. 2078

Amplifier: 8725 (See page B-5).  
Speakers: 1—12" P-12-Q or equal Heavy Duty P.M.  
Cables: 25' Type SV with plug.  
Phono Equip: Built-in 2-Speed (78-33 1/2 RPM) Motor; Type HP-16 Tone Arm.  
Microphone: JT-30 with desk type Stand.  
Microphone Cable: 15' Shielded Rubber covered with Connector.

Microphone Stand: Furnished with Micro. Case: Model 2078.  
Dimensions: 19" Deep; 13 1/4" High; 19 1/4" Wide.  
Shipping Weight: 73 lbs.

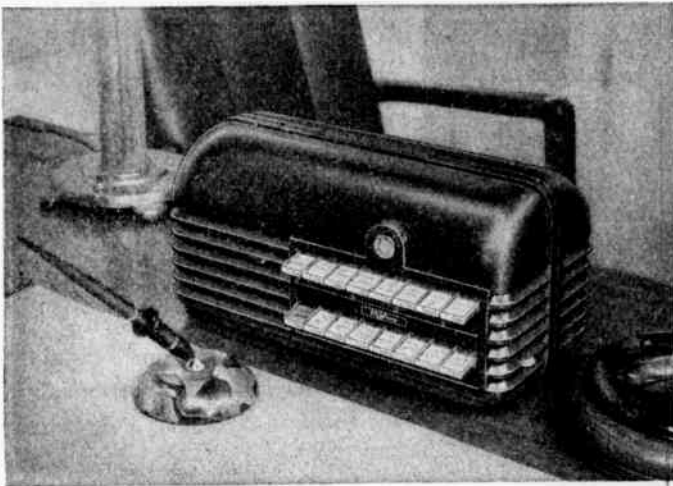
#### Model 2078-CH

Same as Model 2078 except with Webster 56 Changer in place of transcription unit.



# BELfone

## INTERCOMMUNICATION SYSTEMS



WE offer the finest and most complete line of inter-office communicating equipment in the world today.

Four entirely different series of BELfones are available. The 350 Series, the 374-SS Series, the 440 Series and the 460 Series. There is a BELfone System that will meet every need; and for clarity of tone, appearance, low operating cost and maintenance, the Bell line has no peer.

The Bell Sound Systems, Inc., was the first company to design and produce reasonably priced electronic inter-office communication equipment commercially.

The complete line of BELfone equipment and accessories are shown in our special catalog for inter-office communicating equipment. Write for it today.

Bell also builds *Industrial Sound and Paging Equipment; School Sound Distribution Systems; Recording Units; and other Sound Equipment and Accessories.* For further details write to

**BELL SOUND SYSTEMS, Inc.** •

# THORDARSON AMPLIFIERS



## THORDARSON 8 WATT AMPLIFIER — T-31W08

This amplifier combines maximum performance with minimum size. It is ideal for ballyhoo installations, carnivals, or inter-phone applications. The quality is such that it may be used for reproduction of the finest records. Individual controls for phono and microphone provide electronic mixing. The treble attenuation tone control has sufficiently smooth operation for satisfactory elimination of needle scratch or objectionable highs; or with the control in a normal position the highest treble tone can be clearly reproduced.

List Price \$64.00

**POWER OUTPUT**—8 Watts (+31.25 Db) at less than 9% distortion.  
**TWO INPUT CIRCUITS**—

One high impedance microphone channel—115 Db gain (based on 100,000 ohms input impedance).

One high impedance phono channel—72 Db gain (based on 100,000 ohms input impedance).

All input circuits may be mixed.  
Low impedance microphone input optional at slight additional cost (50, 250, or 500 ohms).

**IMPROVED TONE CONTROL**—(high frequency attenuator type). Maximum position attenuated 1,000 C.P.S. 4 Db, 5,000 C.P.S. 17 Db, 10,000 C.P.S. 22 Db.

**FREQUENCY RESPONSE**—Flat within 1 Db from 50 to 10,000 C.P.S.  
**CHASSIS TYPE CONSTRUCTION**—Attractive three-tone control panel.

**INVERSE FEED-BACK CIRCUIT.**

**OUTPUT IMPEDANCES**—4, 8, 15, 250, 500 ohms—all available at an 8-prong receptacle.

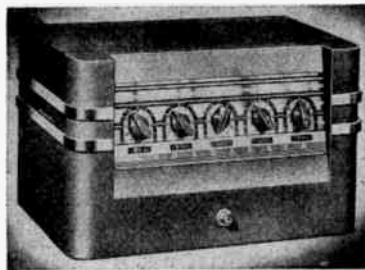
**HUM LEVEL**—60 Db below rated output.

**TUBES**—1-6J7; 1-6SJ7; 1-6L6; 1-5Y8.

**DIMENSIONS**—10" x 6" x 7 1/4" high.

**POWER CONSUMPTION**—70 watts, 110-120 volts, 50-60 cycles other primary voltages on special order).

**(WEIGHT NET)**—14 1/4 pounds; shipping 16 pounds.



## THORDARSON 25 WATT AMPLIFIER — T-31W25AX

Sufficient undistorted power is available from this unit for large auditorium or night club installations. Two low level inputs and one high level input will allow the use of two microphones with low impedances or high impedances to be satisfactorily mixed with a phono input for musical background. The attractive front panel is supplied with three gain controls and two tone controls. The tone controls provide individual bass or treble attenuation to eliminate undesirable highs in recordings or undesirable lows for crisp speech output. When the tone controls are in the normal position—Tru-Fidelity output is available.

List Price \$135.00

**POWER OUTPUT**—25 watts (+36.2 Db) at less than 3% distortion.  
**TWO INPUT CIRCUITS**—

One high-impedance microphone channels—116 Db gain (based on 100,000 ohms input impedance).

One high impedance phono channel—72 Db gain (based on 100,000 ohms input impedance).

Low impedance microphone input optional at slight additional cost (50, 250, 500 ohms).

All input circuits may be mixed.  
**IMPROVED TONE CONTROLS** (Treble and bass attenuators). Maximum attenuation positions.

Base—50 C.P.S.—20 Db. 100 C.P.S.—12 Db.  
Treble—1,000 C.P.S.—4 Db 5,000 C.P.S.—15 Db 10,000 C.P.S.—

23 Db.  
**FREQUENCY RESPONSE**—Flat within 1 Db from 30 to 15,000 C.P.S.  
**FULLY ENCLOSED CONSTRUCTION**—All-steel streamlined cabinet—Attractive three-tone control panel.

**MULTIPLE INVERSE FEED-BACK CIRCUIT.**

**OUTPUT IMPEDANCES**—4, 8, 15, 250, 500 ohms—all available at 8-prong receptacles, selected by means of a switch.

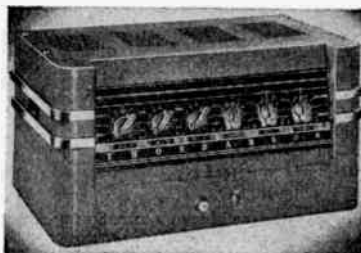
**HUM LEVEL**—65 Db below rated output.

**TUBES**—2-6J7; 1-6SJ7; 1-6N7; 2-6L6; 1-5X4G.

**DIMENSIONS**—15 1/2" x 10" x 9" high.

**POWER CONSUMPTION**—137 watts—110-120 volts, 50-60 cycles (other primary voltages on special order).

**WEIGHT NET**—28 pounds; shipping 32 pounds.



## THORDARSON 50 WATT AMPLIFIER — T-31W50AX

This amplifier employs 4-Beam Power tubes; is conservatively rated at 50 watts and will supply over 65 watts of peak power. The unit is ideal for large stadium or roller-rink applications. The three low-level microphone and two high-level phono inputs will satisfactorily handle the most elaborate mixing applications. Dual tone controls will attenuate individually either the bass or treble or individually boost the bass or treble. Either low or high impedance inputs may be accommodated. The range of output impedances provided will accommodate multiple speaker applications.

List Price \$260.00

**POWER OUTPUT**—50 Watts (+39.6 Db) at less than 5% distortion.  
**FIVE INPUT CIRCUITS**—

Three input microphone channels—115 Db gain (based on 100,000 ohms input impedance).

Two phono fader inputs—75 Db gain (based on 100,000 ohms input impedance).

Low impedance microphone input optional at slight additional cost (50, 250, 500 ohms).

**TWO TONE CONTROLS**—

One bass control providing a bass boost of 9 1/4 Db at 80 C.P.S. to a bass attenuation of 25 Db at 80 C.P.S.

One treble control providing a boost of 11 1/4 Db at 8,000 C.P.S. to an attenuation of 25 Db at 8,000 C.P.S.

Nine extreme individual response curves available with the two tone controls

**FREQUENCY RESPONSE**—Flat within 1 Db from 30 to 15,000.  
**CHASSIS TYPE CONSTRUCTION**—All-steel streamlined cabinet — attractive three-tone control panel.

**INVERSE FEED-BACK CIRCUIT.**

**OUTPUT IMPEDANCES**—4, 6, 8, 15, 125, 250 and 500 ohms—selected by means of a selector switch.

**HUM LEVEL**—70 Db below rated output.

**TUBES**—2-6X4; 1-6X6; 4-6L6; 1-6V6; 3-6J7; 1-6SJ7; 1-6J6.

**DIMENSIONS**—17" x 11 1/4" x 8 3/4" high.

**POWER CONSUMPTION**—250 Watts at 110-120 volts, 50-60 cycles (other primary voltages on special order).

**WEIGHT NET**—44 pounds; shipping 50 pounds.

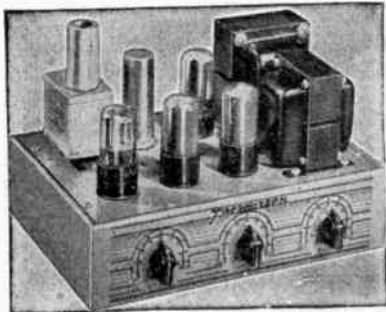


TRANSFORMER SPECIALISTS SINCE 1895 THORDARSON



# THORDARSON AMPLIFIERS

## T-32W10 AUDIO AMPLIFIER



America's greatest value in quality. **VERSATILE**—available with or without pre-amplifier. Buy only what you need, add pre-amplifier if needed later.

**FEATURES**—Frequency responses from 20 to 20,000 cycles • -70 DB hum level below rated output • Adequate gain to obtain full output from the ordinary high impedance pickup or tuner • A treble boost and treble attenuation tone control feature • A bass boost or flat response control • Both tone controls continuously variable • Output for 3 to 4 ohms, or 15 to 16 ohms which covers all popular high fidelity speakers • The unit will be supplied with felt mounting feet and a separate bracket for permanent installations • Gray hammertone finish • A pre-wired socket will allow the use of a T-32W00 plug-in-pre-amp which will accommodate any of the popular magnetic reluctance phono pickups or a high impedance microphone • A frequency compensated pre-amplifier, T-32W00 can be supplied with 15 DB of bass compensation for use with magnetic phone pickups. The bass compensation can be removed for flat response when microphone operation is desired • Output impedances are terminated to a four-screw terminal board • Tubes: One 6SL7-GT, two 6V6-GT, one 5Y3-GT • Complete with self-contained power supply, 115 volts A.C., and tubes • Output—10 clean watts at less than 2% distortion.

New THORDARSON T-32W10 AUDIO AMPLIFIER. Less T-32W00 Pre-Amplifier—**List Price \$55.00** but complete for use with high impedance pickup or tuner.

New THORDARSON T-32W00 Plug-in Pre-Amplifier. Necessary when Audio Amplifier is to be used with any of the popular reluctance phono pickups or high impedance microphones. **List Price \$9.90**

## T-31W10AX TRU-FIDELITY PHONO-AMPLIFIER

Unique in design the Thordarson 10 Watt Phono Amplifier combines versatility of application with Tru-Fidelity performance. Both microphone and phono input channels allow the 31W10AX to be used in conjunction with the High-Fidelity Meissner AM-FM Tuner and other tuners of comparable performance; as a speech amplifier in amateur transmitters; or as the amplifier section in a recording set-up. Little is left to be desired in naturalness and brilliance of tone.

Separate bass and treble controls with both boost and attenuation action assure complete adaptation of the output to all acoustical conditions, plus the pleasure of listening to music the way it is desired to be heard. Production cost is lowered by the mounting of this unit on a simple chassis inasmuch as the amplifier is usually installed in cabinet, no cover is required. **LIST PRICE \$127.50**

### T-31W10AX Specifications

**POWER OUTPUT**—10 Watts at less than 5% distortion (50 to 10,000 cycles).

#### TWO INPUT CIRCUITS—

One high impedance microphone channel—107 Db gain (based on 100,000 ohms input impedance).

One high impedance phono channel—71 Db gain (based on 100,000 ohms input impedance).

#### TWO TONE CONTROLS—

One bass control providing a bass boost of 12 Db at 80 C.P.S. to a bass attenuation of 18 Db at 80 C.P.S.

One treble control providing a treble boost of 12 Db at 8000 C.P.S. to an attenuation of 18 Db at 8000 C.P.S.

**FREQUENCY RESPONSE**—Flat within 1 Db from 40 to 15,000 C.P.S.

**CHASSIS TYPE CONSTRUCTION**—Attractive three-tone control panel.

#### INVERSE FEED-BACK CIRCUIT

**OUTPUT IMPEDANCES**—4, 8, 15, 125, 250, 500 ohms—all available at an eight-prong receptacle.

**HUM LEVEL**—60 Db below maximum rated output.

**TUBES**—1-6J7; 1-6SJ7; 1-6J6; 1-6SN7; 2-6B4; 1-5U4G.

**DIMENSIONS**—14" x 8" x 7½" high.

**POWER CONSUMPTION**—117 Watts full signals—110-120 volts, 50-60 cycles (other primary voltages available on special order).

**WEIGHT NET**—19 pounds; shipping 22 pounds.

## T-31W20AX 20 WATT MOBILE AMPLIFIER

Conservatively-rated, this universal mobile amplifier furnishes sufficient undistorted power for sound truck, picnic, carnival and similar installations that require the versatility of 6 volts D.C. volts and 115 volts A.C. operation.

The electric turntable and pick-up mounted on top of the amplifier operates practically in any position, whether tilted vertically or horizontally. Shock-mounted for smooth operation over rough terrain,

it is truly versatile. With all connections on the back of the chassis, simplification of hook-up is provided, leaving trimness of style for the front panel.

Treble attenuation tone compensation makes allowance for correcting to acoustical conditions and reducing record scratch. Mixing procedure is completely controlled with the coupled phono and microphone input channels. **LIST PRICE \$200.00**

### T-31W20AX Specifications

**POWER OUTPUT**—20 Watts at less than 6% distortion (50 to 10,000 cycles).

#### TWO INPUT CIRCUITS—

One high impedance microphone channel—110 Db gain (based on 100,000 ohms input impedance).

One high impedance phono channel—72 Db gain (based on 100,000 ohms input impedance).

Both input circuits may be mixed.

**FREQUENCY RESPONSE**—Flat within 1 Db from 40 to 15,000 C.P.S.

#### IMPROVED TONE CONTROL—(high frequency attenuator type).

Maximum position attenuated 1,000 C.P.S. 1 Db; 5,000 C.P.S. 10 Db; 10,000 C.P.S. 16 Db.

**FULLY ENCLOSED CONSTRUCTION**—Trim light grey wrinkle cabinet with three-tone control panel.

**CRYSTAL PICK-UP**—Specially-designed pick-up arm. Spring-action holds arm in place.

#### INVERSE FEED-BACK CIRCUIT.

**OUTPUT IMPEDANCES**—4, 8, 15, 125, 250, 500 ohms—all available at two 8-prong receptacles, selected with switch.

**HUM LEVEL**—66 Db below maximum rated output.

**TUBES**—1-6J7; 1-6SJ7; 1-6N7; 2-6L6; 2-6X5.

**DIMENSIONS**—15½" x 10" x 11" high.

**POWER CONSUMPTION**—140 Watts full signal—110-120 volts, 50-60 cycles; 6 volts D.C. 28 Amp. (6 volts standby current—5.15 Amps.).

**WEIGHT NET**—34½ pounds; shipping 39 pounds.

### T-31K09 COVER

A trim grey wrinkle finish cover, perforated for complete ventilation; for use on the T-31W08 amplifier.



TRANSFORMER SPECIALISTS SINCE 1895 THORDARSON

MASCO manufactures a complete line of amplifiers and sound systems ranging in power output from 8 to 75 watts, including phono-top, mobile, high fidelity and musical instrument amplifiers and recorders, transcription players, school systems, plant broadcasting and intercommunication systems. All MASCO amplifiers, many of which are shown as portable systems are recommended for use in FIXED SYSTEMS.

**MA-8N 8-WATT AMPLIFIER and MAS-8N 8-WATT PORTABLE SYSTEM**

**AMPLIFIER FEATURES:** Microphone and phono input separately controlled • Bass-treble tone control • Hammertone-finish chassis • Light, compact and sturdy • U/L Approved.

**APPLICATIONS FOR AMPLIFIER AND SYSTEM:** Both units are ideal for paging systems for bus and railroad stations and they are recommended for side shows, auction rooms, sales meetings, small taverns and clubs.



**AMPLIFIER SPECIFICATIONS  
MODEL MA-8N**

POWER OUTPUT.....8 Watts, Class A, at less than 5% distortion  
 PEAK POWER.....13 Watts  
 INPUTS.....Two: 1-microphone, and 1-phono  
 FREQUENCY RESPONSE.....± 2 DB 50 to 10,000 CPS  
 POWER GAIN.....Microphone, 128.5 DB; Phono, 75 DB  
 CONTROLS.....Three: Microphone, Phono, Tone (On-Off Switch)  
 TUBES.....1-6SF5, 1-6SJ7, 1-6L6G, 1-5Y3GT (Rectifier)  
 OUTPUT IMPEDANCES.....3.2, 8 and 500 Ohms  
 HUM LEVEL.....60 DB below output level of 8 Watts  
 POWER CONSUMPTION.....75 Watts at 117 Volts  
 VOLTAGE.....105-125 Volts, 60 CPS  
 DIMENSIONS.....10" x 8" x 7 1/2" high

MA-8N Amplifier (less cover, with Tubes) ..\$55.00  
 Shipping Weight: 14 lbs.

Cover for MA-8N..... 4.50  
 Kit of Matched Plugs and Connectors..... 1.50

MAS-8N Portable System..... 112.00  
 Shipping Weight: 30 lbs.

Consists of: 1—MA-8N Amplifier with Cover with tubes

- 1—10" PM Speaker
- 1—25-ft. Speaker Cable and Plug
- 1—Model 303 Portable Carrying Case (Attractive Luggage Style)
- 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors

**MA-17N 17-WATT AMPLIFIER and MAS-17N 17-WATT PORTABLE SYSTEM**

**AMPLIFIER FEATURES:** Two microphone inputs • One phono input • Individual volume controls • Separate bass and treble controls • Tapped line and voice-coil impedances • U/L Approved.

**APPLICATIONS FOR AMPLIFIER AND SYSTEM:** They are suitable for small orchestras, lecturers, ballyhoo, store demonstrations, night clubs and ballrooms.

**AMPLIFIER SPECIFICATIONS • MODEL MA-17N**

POWER OUTPUT.....17 Watts, Class A, at less than 5% distortion  
 PEAK OUTPUT.....26 Watts  
 INPUTS.....Three: 2-microphone, 1-phono  
 FREQUENCY RESPONSE.....± 2 DB 50 to 12,000 CPS  
 POWER GAIN.....Microphone, 132 DB; Phono, 78 DB  
 CONTROLS.....Five: 2-microphone, Phono, Bass, Treble, Separate Power On-Off Switch  
 TUBES.....1-6BC7, 1-6BJ7, 1-6SL7GT, 2-6L6G, 1-5V4G (Rectifier)  
 OUTPUT IMPEDANCES.....4, 8, 15, 125, 250, 500 Ohms  
 HUM LEVEL.....02 DB below output level of 17 Watts  
 POWER CONSUMPTION.....125 Watts at 117 Volts  
 VOLTAGE.....105-125 Volts, 60 CPS  
 Has tapped primary to compensate for line voltage fluctuations.  
 DIMENSIONS.....13" x 8" x 8 3/4" high



**MA-17PN 17-WATT PHONO TOP AMPLIFIER and MAS-17PN 17-WATT PHONO TOP PORTABLE SYSTEM**

**APPLICATIONS FOR AMPLIFIER AND SYSTEM:**

For recorded music, alone or combined with voice • Plays 12" and smaller records • Widely preferred as record demonstrators.

**AMPLIFIER SPECIFICATIONS  
MODEL MA-17PN**

Same as MA-17N (Described on this page) but includes phono-top.  
 Chassis size: 14" x 11" x 8 3/4".

**PRICES** **List Price**  
 \*MA-17PN Amplifier with tubes, with single-speed motor.....\$129.95  
 Kit of Plugs and Connectors..... 1.50



**PRICE** **List Price**  
 \*MAS-17PN Portable System \$223.00  
 Shipping Weight: 56 lbs.

- Consists of:
- 1—MA-17PN Amplifier with tubes
  - 2—12" PM Speakers
  - 2—25-ft. Speaker Cables and Plugs.
  - 1—Model 305 Portable Carrying Case (attractive luggage style)
  - 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors
  - \*MA-17PN with three-speed motor and all purpose pickup with "Turn-Over" cartridge, add to List Price \$9.25.

**PRICES** **List Price**  
 MA-17N Amplifier with Tubes..... \$97.50  
 Shipping Weight: 20 lbs.  
 Kit of Matched Plugs and Connectors..... 2.25  
 MAS-17N Portable Systems..... 179.95  
 Shipping Weight: 45 lbs.  
 Consists of: 1—MA-17N Amplifier with Tubes  
 2—10" PM Speakers  
 2—25-ft. Speaker Cables and Plugs  
 1—Model 304 Portable Carrying Case (attractive luggage style)  
 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors

To secure a LOW-IMPEDANCE INPUT for amplifiers, see PAGE B-13

**WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES**

Amplifiers licensed under U.S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company. Specifications and prices subject to change without notice.



TYPICAL PORTABLE SYSTEM ILLUSTRATED →

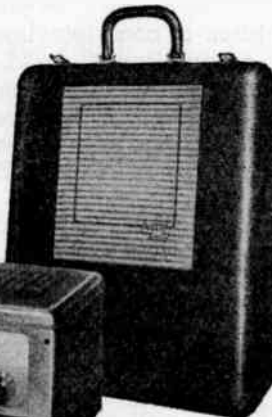
MAS-25N and MAS-25PN Systems incorporate carrying case as illustrated.



MA-25N MA-25NR



MA-35-N



MAS-35-N



MA-25PN

**MA-25N 25-Watt Amplifier and MAS-25N 25-Watt Portable System**

**AMPLIFIER FEATURES:** Four inputs • Four-channel electronic mixing • Separate bass and treble controls • Tapped line and voice-coil impedances • Full 25 watts of undistorted output • Over-all negative feedback • U/L Approved.

**APPLICATIONS FOR AMPLIFIER AND SYSTEM:**

They are ideal for the larger auditoriums, churches, night clubs, orchestras, indoor sports arenas, and also for outdoor use at fairs, bazaars, children's camps, and similar locations.

**AMPLIFIER SPECIFICATIONS MODEL MA-25N**

**POWER OUTPUT** 25 Watts, Class AB-1, at less than 5% distortion  
**PEAK POWER** 40 Watts  
**INPUTS** Four: 3-microphone, 1-phono  
**FREQUENCY RESPONSE** ± 2 DB 50 to 15,000 CPS  
**POWER GAIN** Microphone, 133.5 DB; Phono, 79 DB  
**CONTROLS** Six: 3-microphone, Phono, Bass, Treble, Separate Power On-Off Switch  
**TUBES** 4-6J7, 2-6SC7, 2-6L6G, 1-5V4G (Rectifier)  
**OUTPUT IMPEDANCES** 4, 8, 15, 125, 250, 500 Ohms  
**HUM LEVEL** 64 DB below output level of 25 Watts  
**POWER CONSUMPTION** 145 Watts at 117 Volts  
**VOLTAGE** 105-125 Volts, 60 CPS  
 Has tapped primary to compensate for line voltage fluctuations.  
**DIMENSIONS** 15" x 8 1/4" x 8 3/8" high

**PRICES List Price**  
 MA-25N Amplifier with tubes \$117.00  
 Shipping Weight: 30 lbs.  
 Kit of Matched Plugs and Connectors 2.75  
 MAS-25N Portable System 210.00  
 Shipping Weight: 60 lbs.

Consists of:  
 1—MA-25N Amplifier with tubes  
 2—12" PM Speakers  
 2—25-ft. Speaker Cables and Plugs  
 1—Model 305 Portable Carrying Case (Attractive Luggage Style)  
 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors

**MA-25NR 25-Watt Remote-Control Amplifier**

The Model MA-25NR Remote-Control Amplifier follows closely all specifications for the Model MA-25N, but has, in addition, a built-in circuit for remote control of two of the microphone channels when used with the Model RCB Remote-Control Box as shown on page B-13.

**PRICES List Price**  
 MA-25NR Remote-Control Amplifier with tubes \$132.00  
 Kit of Matched Plugs and Connectors for MA-25NR 2.75

**MA-35N 35-Watt Amplifier and MAS-35N 35-Watt Portable System**

**AMPLIFIER FEATURES:** Four inputs • Three microphone and one phono input, each separately controlled • Electronic mixing over-all • Individual bass and treble equalizers • Tapped output impedances of 4, 8, 15, 125, 250, and 500 ohms • U/L Approved.

**APPLICATIONS FOR AMPLIFIER AND SYSTEM:**

They are suitable for use at beaches and fairs, for paging and announcing at airports and terminals and the like, and equally ideal for orchestras, theatres and carnivals.

**AMPLIFIER SPECIFICATIONS MODEL MA-35N**

**POWER OUTPUT** 35 Watts, Class AB-2, at less than 5% distortion  
**PEAK POWER** 50 Watts  
**INPUTS** Four: 3-microphone, 1-phono  
**FREQUENCY RESPONSE** ± 2 DB 50 to 15,000 CPS  
**POWER GAIN** Microphone, 135 DB; Phono, 80.5 DB  
**CONTROLS** Six: 3-microphone, Phono, Bass, Treble, Separate Power On-Off Switch  
**TUBES** 1-6BC7, 3-6J7, 3-6BN7GT, 2-6L6G, 1-5U4G, 1-6X5GT (Rectifiers)  
**OUTPUT IMPEDANCES** 4, 8, 15, 125, 250, 500 Ohms  
**HUM LEVEL** 65 DB below output level of 35 Watts  
**POWER CONSUMPTION** 190 Watts at 117 Volts  
**VOLTAGE** 105-125 Volts, 60 CPS  
 Has tapped primary to compensate for line voltage fluctuations.  
**DIMENSIONS** 15" x 9 1/2" x 8 3/8" high

**PRICES List Price**  
 MA-35N Amplifier with tubes \$164.95  
 Shipping Weight: 32 lbs.  
 Kit of Matched Plugs and Connectors 2.75

MAS-35N Portable System 277.95  
 Shipping Weight: 63 lbs.

Consists of:  
 1—MA-35N Amplifier with tubes  
 2—EXTRA-HEAVY-DUTY 12" PM Speakers  
 2—25-ft. Speaker Cables and Plugs  
 1—Model 305 Portable Carrying Case (Attractive Luggage Style)  
 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors

**MA-25PN 25-Watt Phono Tap Amplifier and MAS-25PN 25-Watt Phono Tap Portable System**

Application for Amplifier and System for recorded music alone, or combined with voice. Plays 12" and smaller records. Widely preferred as record demonstrators.

**AMPLIFIER SPECIFICATIONS MODEL MA-25PN**

Same as MA-25N Amplifier (described on this page) but includes phono tap. Chassis size for MA-25PN: 14" x 11" x 8 3/8" high.

**PRICES List Price**  
 \*MA-25PN Amplifier with tubes, with single speed motor \$150.00  
 Shipping Weight: 32 lbs.  
 Kit of Matched Plugs and Connectors 1.95  
 \*MAS-25PN Portable System 243.00  
 Shipping Weight: 61 lbs.

Consists of:  
 1—MA-25PN Amplifier with tubes  
 2—12" PM Speakers  
 2—25-ft. Speaker Cables and Plugs  
 1—Model 305 Portable Carrying Case (Attractive Luggage Style)  
 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors  
 \*MA-25PN with three-speed motor and all-purpose pickup with "Turn-Over" cartridge, add to List Price \$9.25.

MA-35RN



**MA-35RN 35 Watt Amplifier featuring the Webster Model 100, Three-speed Record Changer Top**

Amplifier specifications same as MA-35N (except for record changer mechanism). Chassis size: 15" x 15" x 10 1/2" high.

**PRICES List Price**  
 MA-35RN Amplifier with tubes, with Webster Model 100, 3 speed record changer top \$242.00  
 Shipping Weight: 52 lbs.  
 Kit of Matched Plugs and Connectors 1.95

To secure a LOW-IMPEDANCE INPUT for amplifiers, see PAGE B-13

**WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES**  
 Amplifiers licensed under U. S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company.

Specifications and prices subject to change without notice.





MA-60 MA-60R

**MA-60R 60 WATT REMOTE CONTROL AMPLIFIER**

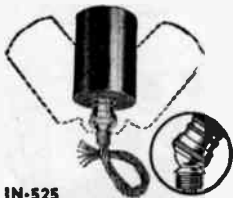
The Model MA-60R is similar in construction and circuit to the Model MA-60, but has in addition, a built-in circuit for remote control of two of the microphone channels when used with the Model RCB Remote-Control Box as described below.

<b>PRICES</b>	<b>List Price</b>
MA-60R Amplifier with tubes.....	\$212.50
Shipping Weight: 41 lbs.	

**MA-200 200 WATT AMPLIFIER • PUSH-PULL 811-A TUBES**



MA-200



IN-525

**IN-525 • LOW-IMPEDANCE TRANSFORMER CONVERSION TO LOW-IMPEDANCE INPUT**

One or more of the high impedance microphone inputs regularly incorporated in MASCO Amplifiers may be readily converted to a low impedance by the installation of MASCO Transformer No. IN-525. It is multi-alloy shielded and is mounted on a swivel-ball joint which allows complete rotation and tilting and assures hum-free operation. Primary impedances available are: 50 ohms unbalanced line; 200 ohms or 500 ohms balanced line. Specify tap-setting when ordering.

<b>PRICES</b>	<b>List Price</b>
Factory-installed Low Impedance Input Transformer (per input).....	\$29.95
IN-525 Low Impedance Transformer (for use with any Standard Amplifier).....	21.00
Shipping Weight: 2 lbs.	

**WEST OF THE ROCKIES ADD 5% TO ABOVE LIST PRICES**



Amplifiers licensed under U. S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company. Specifications and prices subject to change without notice.



**MA-60 60 WATT AMPLIFIER • PUSH-PULL 807 TUBES**

**FEATURES:** Full electronic mixing of all channels • Individual bass and treble equalizers • Sixty watts of undistorted power • Peak Power output 80 watts • Negative feedback • Fully fused • U/L Approved.

The Models MA-60 and MA-60R are powerful wide-range amplifiers that deliver better than 60 watts of usable power. Multi-tapped line and voice-coil impedances match any speaker, or speaker groups and lines.

**APPLICATION:** It is suitable for rack mounting and heavy-duty service, and is successfully used for the larger auditoriums, theatre re-inforcement, indoor and outdoor rinks, stadia, and the like, wherever numerous speakers are required. It is excellent for church chime applications. With suitable speakers and

horns, the power can be concentrated where needed at points of high noise level, as at the starting line of an auto race, or in steel mills. Other speaker arrangements permit uniform coverage of large areas, such as football fields or circuses. Ideal as the basic unit for paging and fire-alarm systems in hotels.

**AMPLIFIER SPECIFICATIONS FOR MODELS MA-60 AND MA-60R**

<b>POWER OUTPUT</b> .....	60 Watts, Class AB-1 at less than 5% distortion
<b>PEAK POWER</b> .....	80 Watts
<b>INPUTS</b> .....	Five: 4-microphone, 1 phono
<b>FREQUENCY RESPONSE</b> .....	2 DB 50 to 15,000 CPS
<b>POWER GAIN</b> .....	Microphone, 136.5 DB; Phono, 82 DB
<b>CONTROLS</b> .....	Seven: 4-microphone, Phono, Bass, Treble, Separate Power On-Off Switch
<b>TUBES—TWELVE</b> .....	4-6J7, 1-68C7, 1-68L7GT, 1-68N7GT, 2-807, 1-68J7, 1-584GY, 1-5Y3GT (Rectifiers)

<b>OUTPUT IMPEDANCES</b> .....	4, 8, 16, 250 Ohms 70 Volt, 140 Volt (constant voltage)
<b>HUM LEVEL</b> .....	67 DB below output level of 60 Watts
<b>POWER CONSUMPTION</b> .....	190 Watts at 117 Volts
<b>VOLTAGE</b> .....	105-125 Volts, 60 CPS Has tapped primary to compensate for Line Voltage fluctuations
<b>DIMENSIONS</b> .....	16" x 11" x 8 3/4" high

**PRICES**

MA-60 Amplifier with tubes.....	\$197.50
Shipping Weight: 41 lbs.	
Kit of Matched Plugs and Connectors.....	3.15

**FEATURES:** Five input channels • Push-Pull 811-A output tubes • Independent plate power supplies • Oil filled filters • Separate power supply switches • Standby switch • Standby relay control socket • Full electronic mixing • Separate controls for each input • Stabilized inverse feedback • Power supplies separately fused • Constant voltage outputs • U/L Approved.

**DESIGN AND CONSTRUCTION:** The Model MA-200 offers high power and wide range reproduction. Overall electronic mixing of four microphone and one phono input channels is provided. Has separate base and treble equalizers. 1 master power and 1 "Standby" switch. A "standby" relay voltage control socket is incorporated which allows for remote relay operation of the amplifier plate supplies if desired. Provision is made to obtain driving voltage from the MA-200 to drive one or more MB-200 boosters where additional power is required.

**APPLICATION:** The Model MA-200 is widely used in rack and mounted installations, and also by itself for covering large outdoor areas. It finds industrial use for paging and announcing in large steel mills, cotton mills, drydocks, shipways, and on heavy construction jobs of all kinds.

<b>PRICES</b>	<b>List Price</b>
MA-200 Amplifier with tubes.....	\$349.50
Shipping Weight: 95 lbs.	
Kit of Matched Plugs and Connectors.....	3.15

Amplifier can be supplied with a photo cell input for theatre installation. Specify when ordering. For one input add \$8.50 to list price. For two inputs add \$6.25 list per input.

**AMPLIFIER SPECIFICATIONS • MODEL MA-200**

<b>POWER OUTPUT</b> .....	200 Watts, Class B at less than 5% distortion 150 Watts, Class B at less than 3% distortion 125 Watts, Class B at less than 2% distortion
<b>PEAK POWER</b> .....	280 Watts
<b>INPUTS</b> .....	Five: 4 Microphone—1 Phono INPUT SENSITIVITY.....Microphone (or other low level input .005V (For Full Power Output) Phono .5V
<b>CONTROLS—NINE</b> .....	4 microphone, phono, bass, treble, master power switch, standby switch
<b>TUBES—FOURTEEN</b> .....	4-6J7, 1-68C7, 1-6L7GT, 1-6N7GT, 2-6L6G, 2-811-A, 3-5U4G (Rectifiers)
<b>OUTPUT IMPEDANCES</b> .....	16, 25 ohms (70 volt constant voltage) 100 ohms (140 volts constant voltage) 250 ohms (225 volts constant voltage)
<b>HUM LEVEL</b> .....	—78 DB below full power output
<b>POWER CONSUMPTION</b> .....	Standby 150 watts Full output 550 watts
<b>VOLTAGE</b> .....	105-125 volts, 60 CPS Has tapped primaries to compensate or line voltage fluctuations
<b>DIMENSIONS</b> .....	17" x 13" x 9" high

**MM-4 FOUR CHANNEL MICROPHONE MIXER**

Can be connected to the high-impedance microphone input of any amplifier. Four independent gain controls and four microphone connectors allow for mixing and fading overall. Converts an amplifier having only one microphone input to four-channel operation.

<b>PRICES</b>	<b>List Price</b>
MM-4 Four Channel Mixer, with 4 ft. Cable and Connector.....	\$19.95
Shipping Weight: 4 lbs.	



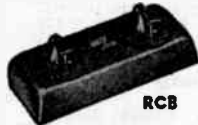
MM-4

**MODEL RCB TWO-CHANNEL REMOTE-CONTROL BOX for use with Models MA-60R and MA-25NR Remote Control Amplifiers**

The Model RCB Remote Control is a compact remote volume-control unit containing two volume controls. Provides independent or simultaneous operation from remote position of two microphone channels of either the Model MA-25NR Amplifier, page 12, or MA-60R as described above.

Can be used with up to 2,000 feet of cable with negligible loss. Tone quality is not affected, and there is no inductive hum pick-up in either the control unit or cable.

<b>PRICES:</b>	<b>List Price</b>
RCB Remote-Control Box.....	\$12.50
Dimensions: 5 3/4" x 2 3/4" x 2 1/2" high	
Shipping Weight: 3 lbs.	



RCB

**MASCO'S OUTSTANDING MOBILE SOUND EQUIPMENT**

**6-VOLT DC AND 117-VOLT AC MOBILE AMPLIFIERS**  
**THE ONLY COMPLETE LINE OF U/L APPROVED MOBILE EQUIPMENT**

**25 Watts, Class AB-1, at less than 5% distortion — 40 Watts Peak Power**

**FEATURES** contained in these six models are: Four input channels • Standby switch • Heavy-duty switches • Low battery drain • Fused circuit • Hum- and ripple-free operation • Heavy-duty dual vibrator • Crystal pick-up input • Lock-in arm rest • Underwriters' Laboratories approved.

Operate as efficiently from 6-volt batteries as from 117-volt AC source. Rugged and powerful, expressly designed for sound truck and other outdoor applications. The battery-saver switch, which shuts off the vibrator during intermissions, reduces battery drain to a minimum. The extra-heavy-duty dual vibrator maintains steady voltage and frequency. These amplifiers are provided with separate cables, fitted with rugged heavy-duty plugs and receptacles for each voltage supply.

**APPLICATION:** The widely varied types of these amplifiers adequately meet all possible needs for applications such as outdoor gatherings, bathing beaches, traveling road shows, open-air theatres, election campaigns and charity drives, traveling evangelists, police and fire department rescue work, and other locations where AC power is unavailable.

**GENERAL AMPLIFIER SPECIFICATIONS:**

**POWER OUTPUT**.....25 Watts, Class AB-1, at less than 5% distortion  
**PEAK POWER**.....40 Watts  
**INPUTS**.....Four: 3-microphone, 1-phono  
**FREQUENCY RESPONSE**.....± 2 DB 50 to 15,000 CPS  
**POWER GAIN**.....Microphone, 133.5 DB; Phono, 79 DB  
**CONTROLS**.....Six: 3-microphone, Phono, Bass, Treble, Separate Motor Switch and Battery-Saver Switch  
**TUBES**.....4-6J7, 1-68C7, 2-6L6G, 1-6SL7GT, 2-7Z4 (Rectifiers)

**OUTPUT IMPEDANCES**.....4, 8, 15, 125, 250, 500 Ohms  
**HUM LEVEL**.....AC: 64 DB below output of 25 Watts;  
 DC: Ripple-free  
**POWER CONSUMPTION**.....AC: 145 Watts at 117 Volts (including phono motor);  
 DC: 23 Amps. at 6 Volts (battery) (includes phono motor)  
**VOLTAGE**.....105-125 Volts, 60 CPS AC or 6 Volts DC (Storage Battery)  
 Power Cables included with all Mobile Amplifiers.

**\*MC-25PN** **List Price**  
 Phono-top Mobile Amplifier with tubes.....\$195.00  
 Shipping Weight: 44 lbs.  
 Kit of Matched Plugs and Connectors..... 2.75  
 Dimensions: 14" x 11" x 8 3/4" high

**\*MCO25PN** **List Price**  
 Outdoor Mobile System.....\$319.95  
 Shipping Weight: 86 lbs.  
 Consists of:  
 1—MC-25PN Phono-top Amplifier with tubes  
 2—Masco-University PH Trumpets  
 2—Masco-University MA-25 Units  
 2—25-ft. Cables and Connectors  
 1—Astatic JT-30 microphone with 15-ft. Cable and Connectors  
 (If amplifier is desired with plain cover less phono-top mechanism, deduct from above list price \$10.00)

**\*MAC-25PN** **List Price**  
 Portable Mobile System.....\$294.00  
 Shipping Weight: 72 lbs.  
 Consists of:  
 1—MC-25PN Phono-top Amplifier with tubes  
 2—12" PM Speakers  
 2—25-ft. Speaker Cables and Plugs  
 1—Model 305 Portable Carrying Case (Attractive Luggage Style)  
 1—Astatic JT-30 Microphone with 15-ft. Cable and Connectors  
 (If amplifier is desired with plain cover less phono-top mechanism, deduct from above list price \$10.00)

**\*MC-25PC** **List Price**  
 Phono-top Mobile Amplifier with Hinged Cover with tubes.....\$215.00  
 Shipping Weight: 46 lbs.  
 Kit of Matched Plugs and Connectors..... 2.75  
 Dimensions: 14" x 11" x 10 1/2" high

**MC-25N** **List Price**  
 Mobile Amplifier, Plain Cover without Phono-top with tubes.....\$185.00  
 Shipping Weight: 39 lbs.  
 Kit of Matched Plugs and Connectors..... 1.95  
 Dimensions: 14" x 11" x 8 3/4" high  
**MC-25RC** **List Price**  
 Mobile Amplifier with Webster Model 100 3-speed record changer top with tubes.....\$285.00  
 Shipping Weight: 52 lbs.  
 Kit of Matched Plugs and Connectors..... 2.75  
 Dimensions: 15" x 15" x 10 1/2" high

\*If desired with three-speed motor and all-purpose pickup with "Turnover" Cartridge, add to list price \$9.25.  
 If Astatic MODEL ABB-M Pickup is desired, add to list price \$9.00.

**MASCO 12 WATT MOBILE AMPLIFIERS**  
**FOR 6-VOLT DC AND 117 VOLT AC OR 12-VOLT DC AND 117-VOLT AC OPERATION**  
**12 WATTS POWER OUTPUT • 18 WATTS PEAK POWER**

**FEATURES:** Two inputs, microphone and phono • Push-pull output • Separate microphone and phono control • Low battery drain • Ripple-free operation • Light-weight, rugged • Remote control permits within-reach adjustment of amplifier controls • U/L approved.

**APPLICATION:** 12-watt mobile amplifier built expressly for operation in a moving vehicle. Easily mounted, it fits under the dashboard. Separate volume controls provide independent or simultaneous use of both inputs. For application in police safety and traffic work, fire department, transportation systems, hearses and ambulance service. Any standard speaker may be used.

**AMPLIFIER SPECIFICATIONS: 6 VOLT AND 12 VOLT**

**POWER OUTPUT**.....12 Watts, Class A, at less than 5% distortion  
**PEAK POWER**.....18 Watts  
**INPUTS**.....Two: 1-microphone, 1-phono  
**FREQUENCY RESPONSE**.....±3 DB 100 to 8,000 CPS  
**POWER GAIN**.....Microphone, 110 DB; Phono 75 DB  
**CONTROLS**.....Microphone, Phonograph, On-Off Standby-Operate (Battery-Saver) Switch

**TUBES**.....Five: 1-6SF5, 1-6SL7GT, 2-6V6GT, 1-7Z4 (Rectifier)  
**OUTPUT IMPEDANCES**.....3.2, 8 and 15 Ohms  
**HUM LEVEL**.....60 DB below output level of 12 Watts  
**POWER CONSUMPTION:**  
 (MC-126P and MC-126).....AC: 60 Watts at 117 Volts; DC: 8 Amps at 6 Volts (Battery)  
 (MC-12P and MC-12).....AC: 60 Watts or 117 Volts; DC: 4 Amps at 12 Volts (Battery)  
**DIMENSIONS**.....12" x 6" x 8" high

**PRICES: Amplifiers 6 volt and 12 volt**

**MC-126P** Phono-top Mobile Amplifier, 12 Watts (6 Volt DC and 117 Volt AC), with tubes, with cables.....\$115.00  
**MC-126** Same as above with plain cover less phono-top mechanism.....\$ 85.00  
**MC-12P** Phono-top Mobile Amplifier, 12 Watts (12 Volts DC and 117 Volts AC) with tubes, with cables.....\$124.95  
**MC-12** Same as above with plain cover less phono-top mechanism.....\$ 94.95  
 Shipping Weight all models: 15 lbs.

**PRICES: Mobile Portable Systems**

**MAC-126P** Phono-top Portable Mobile System (6 Volt) .....\$172.00  
 Shipping Weight: 36 lbs.  
 Consists of:  
 1—12 Watt Mobile Amplifier with Tubes  
 1—10" PM Speaker  
 1—25-ft. Speaker Cable and Plug  
 1—Model 303 Portable Case  
 1—Astatic JT-30 microphone with 15-ft. Cable and Connectors  
**MAC-12P** Phono-top Portable Mobile System (12 Volt) .....\$181.95



MC-25PN

MAC-25PN



MC-25PC



MC-25RC



MC-126P

MC-12P

MAC-126P

MAC-12P

**PRICES: Mobile Outdoor Systems**

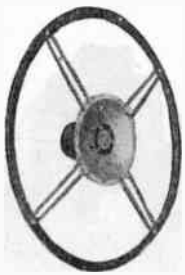
**MCO-126P** Mobile Outdoor System (6 Volt) .....\$165.00  
 Consists of:  
 1—12 Watt Mobile Amplifier with Tubes  
 1—Masco University Model 1B3 Loudspeaker  
 1—25-ft. Cable and Plug  
 1—Astatic JT-30 microphone with 15-ft. Cable and Connectors  
**MCO-12P** Phono-top Mobile Outdoor Systems (12 Volt) .....\$174.95  
**RCM** Remote Control and Clamp attachment to steering post .....\$ 11.50

**WEST OF THE ROCKIES ADD 5% TO ABOVE LIST PRICES**

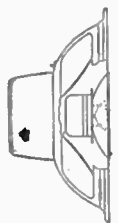
Specifications and prices subject to change without notice

# MASCO high frequency tweeter unit HFT-100

FOR USE WITH 12" AND 15" CONE SPEAKERS



**HFT-100  
With Mounting Bracket**



**View of HFT-100  
Mounted Within Cone Speaker**



**View of HFT-100  
Less Mounting Bracket**

## AN EXCLUSIVE NEW TWEETER THAT GIVES LIVING PRESENCE WITH

- |                            |                                       |   |
|----------------------------|---------------------------------------|---|
| <b>NO distortion</b>       | <b>NO crossover network necessary</b> | <b>NO narrow dispersion angles</b>          |
| <b>NO cumbersome horns</b> | <b>NO additional space required</b>   | <b>NO need for separating sound sources</b> |

**FEATURES:** Real high-fidelity reproduction is not possible with a conventional 12" speaker, which seldom is capable of appreciable response beyond average voice range. However, such a speaker, in conjunction with the new MASCO high frequency tweeter unit HFT-100 will provide excellent fidelity from the lowest bass frequency it is capable of reproducing to the treble frequencies well beyond 15,000 cycles.

The HFT-100 with its patented diffuser is the simplest and most economical method of obtaining distortionless high frequency response. Since no crossover network is required, distortion resulting from the unavoidable phase shift in such networks is not produced.

**DESIGN AND CONSTRUCTION:** The relative low impedance of about 5 ohms permits a series hook-up with an associated low frequency (cone type) speaker. Due to the widely different characteristics of the tweeter and cone speaker, they become mutually compensating when so connected, in that one tends to stabilize the performance of the other.

The HFT-100 incorporates a quasi-cross-over network, thus the need for external filters is eliminated. A gradual slope of the lower end is the result of the design of the moving element in the HFT-100 itself. When applied to the HFT-100 it begins blending in at 900 cycles and attains full effect around 2500 cycles. As the HFT-100 determines its own operating range, it is quite permissible to apply its full power rating over the entire frequency range of a cone speaker-tweeter combination.

By means of a double reflector, uniform distribution of a wide frequency band is achieved. A method has been developed and patented (No. 2135840) which permits efficient utilization of the beam effect of the high frequencies. The short path lengths between the sound generator and the reflectors, together with the correct choice of the materials and finishes, result in a highly efficient unit.

**MOUNTING INSTRUCTIONS:** The HFT-100 with its supporting non-resonant metal bracket is attached to the cone speaker as follows:

- (a) Remove cone speaker from cabinet.
- (b) Match holes of metal bracket of tweeter with cone speaker mounting holes.
- (c) Remount cone speaker and tweeter into cabinet.

**HOOKUP:** The HFT-100 tweeter is wired in series with the cone speaker.

When the source impedance and the cone speaker impedance is **3.2 ohms**, a 10 ohm, 10 watt fixed resistor is connected across the tweeter.

When the source impedance and the cone speaker impedance is **6.8 ohms** no resistor is required.

When the source impedance and the cone speaker impedance is **16 ohms**, a 20 ohm, 10 watt fixed resistor is connected across the cone speaker.

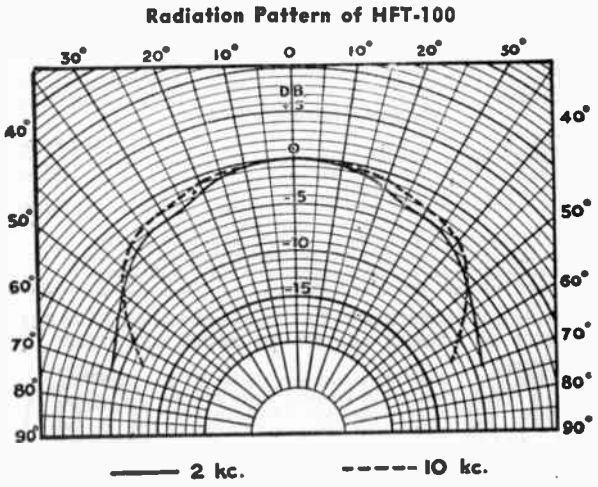
FREQUENCY RANGE.....900 to beyond 15,000 cycles  
 IMPEDANCE.....5 ohms  
 POWER RATING.....8 watts  
 DISPERSION, HORIZONTAL AND VERTICAL.....70 degrees

**DIMENSIONS:**  
 DIAMETER 5-7/16"  
 DEPTH 2 5/8"

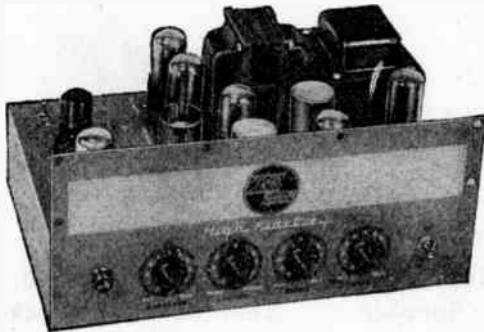
**PRICES:**

	<b>List Price</b>
HFT-100 with attached mounting bracket for 12" cone speaker	\$27.00
HFT-100 with attached mounting bracket for 15" cone speaker	\$29.00
Shipping Weight: 3/4 lbs.	

**West of the Rockies add 5% to the above list prices.**  
 Specifications and prices subject to change without notice.



**THE ULTIMATE IN HIGH FIDELITY AMPLIFIERS  
... UNEXCELLED BY ANY STANDARD**



**MA-12HF  
MA-12EX**

**MA-12HF 12-WATT HIGH FIDELITY AMPLIFIER  
MA-12EX (illustrated) 12-WATT HIGH FIDELITY  
AMPLIFIER WITH EXPANDER**

**AMPLIFIER FEATURES:**

Available with or without expander • Compensated inputs with switching arrangement for G-E, Pickering and crystal pick-ups • Radio Tuner Input • Separate Bass and Treble Controls • U/L Approved.

The Model MA-12EX expander model incorporates the many outstanding features of the MA-12HF, but has in addition the new MASCO variable expander, which operates instantaneously; has no chopping effect or time lag.

**APPLICATION:**

Model MA-12HF is especially adapted for use by broadcast stations for bridging applications and recording. Is ideal as a distribution amplifier for wired music applications.

**AMPLIFIER SPECIFICATIONS:**

<b>MODEL MA-12HF and MODEL MA-12EX</b>	
RATED POWER OUTPUT.....	12 Watts at less than 5% distortion 9 Watts at less than 2% distortion
PEAK POWER OUTPUT.....	17 Watts (tone controls normal)
FREQUENCY RESPONSE.....	±2 DB 50 to 15,000 CPS (tone controls normal)
INPUT SENSITIVITY & GAIN.....	Magnetic pickup .008 Volts (90 DB) High level crystal pickup 1.5 Volts (60 DB) Low level crystal pickup .45 Volts (70 DB) Radio Tuner, Bridging .3 Volts (75 DB)
CONTROLS.....	Magnetic pickup, crystal pickup, radio tuner-1-Bass, 1-Treble (Model MA-12EX has separate expander control)
TUBES FOR MA-12HF.....	1-68C7, 2-68L7GT, 2-6V6GT, 1-5Y8GT (Rectifier)
TUBES FOR MA-12EX.....	1-68C7, 2-68L7GT, 2-68N7GT, 2-6V6GT, 1-5Y3GT (Rectifier)
OUTPUT IMPEDANCES.....	2, 4, 8, 15, 500 Ohms
HUM LEVEL.....	65 DB below output level of 12 Watts
POWER CONSUMPTION.....	80 Watts at 117 Volts
VOLTAGE.....	105-125 Volts, 60 CPS
DIMENSIONS.....	13" x 8" x 8 1/2" high Both Models supplied with Connectors.

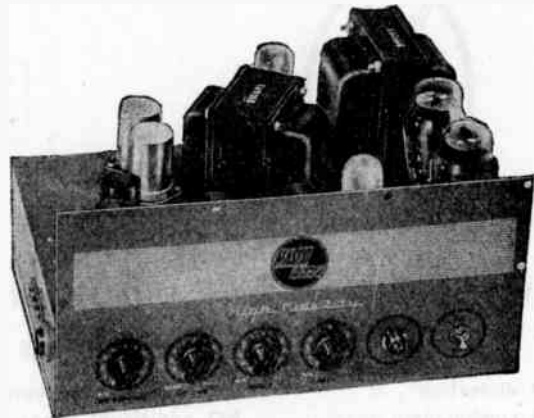
<b>PRICES</b>	
MA-12HF Amplifier, with tubes, less cover.....	List Price \$122.00
MA-12EX Amplifier, with tubes, less cover.....	132.50
(with built-in Expander Circuit)	
If Cover is desired for either model add to list price.....	7.00
Shipping Weight — either model: 20 lbs.	
FS-1 Flexible extension shaft 3 foot long for cabinet or panel mounting. Each flexible shaft is supplied with two coupling connectors. One end of shaft connects to the control and the other end of shaft takes a standard knob. List Price each shaft.....	3.75

To secure a LOW-IMPEDANCE INPUT for amplifiers, see PAGE B-13  
WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES



Amplifiers licensed under U. S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company.

Specifications and prices subject to change without notice.



**MA-25HF  
MA-25EX**

**MA-25HF (illustrated) 25-WATT HIGH FIDELITY  
AMPLIFIER  
MA-25EX 25-WATT HIGH FIDELITY AMPLIFIER  
WITH EXPANDER**

**FEATURES:**

Available with or without volume expander • Four inputs separately controlled • Input switching arrangement for G-E, Pickering, High and Low output crystal and magnetic pick-ups, microphone and radio tuner • Separate bass and treble controls • Output tapped at 4-8-16-250 and 500 ohms • Flat frequency response • Over-all negative feedback • U/L Approved.

The specially designed Controlled Expander Circuit built into the MA-25EX offers true expander function since it allows expansion on only the "above average" passages of a record. Expansion is variable from zero to 15 DB and is entirely free from time lag, thump and microphonics.

**APPLICATION:**

For broadcast stations, recording studios, bridging and monitoring, transcription playback and the "critical" music lover.

**AMPLIFIER SPECIFICATIONS:**

<b>MODEL MA-25HF and MODEL MA-25EX</b>	
RATED POWER OUTPUT.....	25 Watts at less than 5% distortion 20 Watts at less than 2% distortion (at all frequencies from 30 to 20,000 CPS)
PEAK POWER.....	43 Watts (tone controls normal)
FREQUENCY RESPONSE.....	±1 DB 30 to 20,000 CPS (tone controls normal)
INPUT SENSITIVITY & GAIN.....	Magnetic pickup, .008 Volts (90 DB). High level crystal pickup, 1.5 Volts (60 DB). Low level crystal pickup, .45 Volts (70 DB). Radio Tuner, Bridging .3 Volts (75 DB). Microphone, .005 Volts (120 DB).
CONTROLS.....	Microphone, Magnetic pickup, crystal pickup and Radio-1-bass, 1-treble (Model MA-25EX has separate expander control)
TUBES FOR MA-25HF.....	1-128C7, 1-128J7, 2-68L7GT, 2-6L6G, 1-5V4G (Rectifier)
TUBES FOR MA-25EX.....	1-128C7, 1-128J7, 2-68N7GT, 2-68L7GT, 2-6L6G, 1-5V4G (Rectifier)
OUTPUT IMPEDANCES.....	4, 8, 16, 250, 500 Ohms
HUM LEVEL.....	80 DB below output level of 25 Watts
POWER CONSUMPTION.....	140 Watts at 117 Volts
VOLTAGE.....	105-125 Volts, 60 CPS
DIMENSIONS.....	14" x 10" x 8 1/2" high Both Models supplied with Connectors.

<b>PRICES</b>	
MA-25HF Amplifier, with tubes, less cover.....	List Price \$181.50
MA-25EX Amplifier, with tubes, less cover.....	172.00
(with built-in Expander Circuit)	
If Cover is desired for either model add to list price.....	7.50
Shipping Weight — either model: 34 lbs.	
FS-1 Flexible extension shaft 3 foot long for cabinet or panel mounting. Each flexible shaft is supplied with two coupling connectors. One end of shaft connects to the control and the other end of shaft takes a standard knob. List Price each shaft.....	2.75

**THE ULTIMATE IN HIGH FIDELITY AMPLIFIERS  
... UNEXCELLED BY ANY STANDARD**



MHP-110  
MHP-110X

**MHP-110 10-WATT HIGH FIDELITY AMPLIFIER  
MHP-110X (illustrated) 10-WATT HIGH FIDELITY  
AMPLIFIER WITH BUILT-IN EXPANDER CIRCUIT**

**AMPLIFIER FEATURES:**

Exclusive MASCO 4-Way Tone Compensator • Voltage Supply Socket for Attachment of External Pre-amplifier • Power Supply Socket • Crystal Pickup input provision • Radio Tuner input provision • Pre-amplifier input provision • Safety fused • Over-all negative feedback • U/L Approved • Expander circuit available • 10-Watt power output

**AMPLIFIER SPECIFICATIONS:**

**MODEL MHP-110 and MODEL MHP-110X**

POWER OUTPUT.....10 Watts at less than 5% distortion  
 PEAK POWER OUTPUT.....14 Watts  
 FREQUENCY RESPONSE.....± 1 DB 40 to 15,000 CPS (Tone Compensator Normal)  
 GAIN AND SENSITIVITY.....MHP-110: .9 Volts — 70 DB  
 MHP-110X: .5 Volts — 75 DB  
 FLAT RESPONSE.....With Tone Compensator at Normal: Response is ± 1 DB 40 to 15,000 CPS  
 VOLUME CONTROL.....Continuously Variable; with Power On-Off Switch  
 4-WAY INDIVIDUAL TONE COMPENSATOR:  
 Position —  
 No. 1: Deep bass with high cut  
 No. 2: Medium bass (Bass Boost with normal treble)  
 No. 3: Normal (Flat response)  
 No. 4: Treble (Normal bass with treble boost)  
 VARIABLE EXPANDER (MHP-110X only):  
 Manually controlled from zero to + 10 DB. Operates instantaneously. No chopping effect. No time lag.  
 TUBES USED MHP-110.....1-6SL7GT, 2-6V6GT, 1-5Y3GT (Rectifier)  
 TUBES USED MHP-110X.....3-6SL7GT, 2-6V6GT, 1-5Y3GT (Rectifier)  
 OUTPUT IMPEDANCES.....4 and 8 Ohms  
 POWER CONSUMPTION.....60 Watts at 117 Volts, 60 CPS  
 HUM LEVEL.....80 DB below 10 Watts  
 AC RECEPTACLE.....Provided for external attachment of phonograph or radio tuner. (Radio tuner may be adjusted for use.)  
 CHASSIS DIMENSIONS.....10" x 5 1/4" x 2 3/4" high

**PRICES**

**List Price**

MHP-110 High Fidelity 10-Watt Amplifier with Tubes and Input Connector..... \$ 48.75  
 Weight: 9 lbs.  
 MHP-110X High Fidelity 10-Watt Amplifier with Built-in Expander Circuit, with Tubes and Input Connector..... 59.95  
 Weight: 9 1/2 lbs.  
 FS-1 Flexible extension shaft 3 foot long for cabinet or panel mounting. Each flexible shaft is supplied with two coupling connectors. One end of shaft connects to the control and the other end of shaft takes a standard knob. List Price each shaft..... 2.75

**WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES**



Amplifiers licensed under U. S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company.

Specifications and prices subject to change without notice.



MA-10HF  
MA-10EX

**MA-10HF (illustrated) 10-WATT HIGH FIDELITY  
AMPLIFIER  
MA-10EX 10-WATT HIGH FIDELITY AMPLIFIER WITH  
BUILT-IN EXPANDER CIRCUIT**

**AMPLIFIER FEATURES:**

10 Watts of hum-free power • Built-in compensated pre-amplifier • Four inputs • Two inputs equalized for various magnetic and reluctance pickups • One input equalized for crystal pickup • One input unequaled for radio tuner • Ideal for L.P. pickups • Expander circuit available • Individual bass and treble boost and attenuation • Heavy duty output transformer with impedances of 2-4-8-16 and 500 ohms to match most all speakers • Inverse feedback 12 DB over-all • Safety fused • U/L Approved.

**AMPLIFIER SPECIFICATIONS:**

**MODEL MA-10HF and MODEL MA-10EX**

POWER OUTPUT.....10 Watts at less than 5% distortion  
 PEAK POWER OUTPUT.....14 Watts  
 FREQUENCY RESPONSE.....± 1 DB 40 to 20,000 CPS (Tone controls normal)  
 GAIN AND SENSITIVITY.....Magnetic Input No. 1: .01 Volts 92 DB at 1000 CPS  
 Magnetic Input No. 2: .03 Volts 78 DB at 1000 CPS  
 Crystal Input: .5 Volts 70 DB at 1000 CPS  
 Radio Input: .5 Volts 70 DB at 1000 CPS  
 VOLUME CONTROLS.....Continuously variable  
 TREBLE CONTROLS (MA-10HF only).....High frequency boost 15 DB  
 Attenuation at 15,000 CPS 14 DB  
 BASS CONTROL (MA-10HF only).....12.5 DB boost at 50 CPS, and  
 12.5 DB attenuation at 50 CPS  
 FLAT RESPONSE.....With controls at normal, response is ± 1 DB 40 to 20,000 CPS  
 4-WAY INDIVIDUAL TONE COMPENSATION (MA-10EX only):  
 Position —  
 No. 1: Deep bass with high cut  
 No. 2: Medium bass (Bass boost with normal treble)  
 No. 3: Normal (Flat response)  
 No. 4: Treble (Normal bass with treble boost)  
 VARIABLE EXPANDER (MA-10EX only):  
 Manually controlled from zero to + 10 DB. Operates instantaneously. No chopping effect. No time lag.  
 TUBES USED MA-10HF.....1-6SC7, 2-6SL7GT, 2-6V6GT, 1-5Y3GT (Rectifier)  
 TUBES USED MA-10EX.....1-6SC7, 3-6SL7GT, 2-6V6GT, 1-5Y3GT (Rectifier)  
 OUTPUT IMPEDANCES.....2, 4, 8, 16, 500 Ohms  
 POWER CONSUMPTION.....75 Watts at 117 Volts, 60 CPS  
 HUM LEVEL.....70 DB below 10 Watts  
 AC RECEPTACLE.....Contains 2 hum balancing potentiometers  
 Provided for external attachment of phonograph or radio tuner. (Radio tuner may be adjusted for use.)  
 CHASSIS DIMENSIONS.....12" x 7" x 2 3/4" high

**PRICES**

**List Price**

MA-10HF High Fidelity 10-Watt Amplifier with Tubes and Input Connector..... \$ 68.85  
 Weight: 11 1/2 lbs.  
 MA-10EX High Fidelity 10-Watt Amplifier with Built-in Expander Circuit, with Tubes and Input Connector..... 84.85  
 Weight: 12 lbs.  
 FS-1 Flexible extension shaft 3 foot long for cabinet or panel mounting. Each flexible shaft is supplied with two coupling connectors. One end of shaft connects to the control and the other end of shaft takes a standard knob. List Price each shaft..... 2.75

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**



## MODERN-PACKAGED INTER-COMMUNICATION SYSTEMS

**FOR HOME, PROFESSIONAL AND COMMERCIAL USE  
AVAILABLE IN WHITE BAKED ENAMEL OR BROWN HAMMERTONE FINISH  
UNBREAKABLE CAST ALUMINUM HOUSINGS**

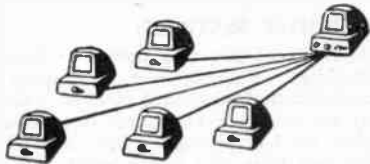


### MODEL JMR TWO STATION SYSTEM

Underwriters Approved — One Master with On-Off Pilot Light and One Remote Station with 50 Feet of Cable.

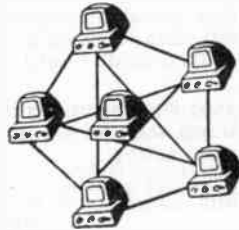
### MODEL JM-5 MASTER TO REMOTE SYSTEM

that takes up to five remote stations



### MODEL IM-5 ALL MASTER SYSTEM

Accommodating up to Six Master Stations



**ALL MASTER  
HOOK-UP  
NO CROSS-TALK**

#### FEATURES:

- Master Station equipped with Volume Control with on-off switch
- Master Station has On-Off Pilot Light
- Separate "press to talk" switch
- Remote Station has "press to talk" switch to originate call to Master Station if desired and allow for privacy
- Remote Station can be used for two way conversation without manual operation
- Natural voice reproduction
- Ample Sensitivity
- Matching Master and Remote Stations
- Unbreakable Cast-Aluminum housings
- Finished in attractive Walnut Hammertone or white Baked Enamel
- U/L Approved

#### PRICES:

	List Price
MODEL JMR—Two-Station System complete. One master with tubes, one remote, and 50 ft. cable.....	\$42.50
*MODEL JMRW—Master to Remote with 50 ft. of cable.....	45.00
MODEL JM5—Master, with tubes. For communication between it and five remote stations; can converse with all 5 stations or can select any one remote station. Master has press-to-talk and station selector switch and volume control with on-off switch.....	37.50
*MODEL JMW-5—Master Station .....	38.85
MODEL JR—Remote. "Press-to-talk" switch allows remote to originate call to JM5 Master, permitting privacy; JR can be used as two-way paging system. Use of switch may be omitted. System uses 3-Wire Vinylite Covered Cable.....	12.75
*MODEL JRW—Remote Station. ....	14.00
MODEL IM-5—All Master, with tubes. Communication between it and 5 other masters. Each master can converse two-way with any or all masters in system. Has press-to-talk and station selector switches and volume control with on-off switch.....	37.50
7-Conductor Cable. Must be used with 5 or more master stations.. (per ft.)	.25
5-Conductor Cable for use with up to 4 master stations..... (per ft.)	.20
*MODEL IMW-5—All Master .....	38.85

\*In white baked enamel finish.

## MASCO MIDGETALK—A COMPLETE INTERCOM SYSTEM

**No other intercom in the field can match the value of MASCO'S 2-station MIDGETALK  
\$29.95 list complete.**

**Nothing more to purchase.**



#### FEATURES:

Master Station has Volume Control with on-off switch • Master Station has separate "press to talk" switch • Master Station has on-off Pilot Light • Remote Station has "press-to-talk" switch to originate call to Master Station if desired and to allow for privacy • Remote Station can be used for two-way conversation without manual operation • Natural voice reproduction • Ample sensitivity • Matching Master and Remote Stations • Unbreakable Cast Zinc Housings • Finished in attractive, beautiful mahogany • U/L Approved.

U/L and CSA approved one master with on-off pilot light and one remote with 50 feet of 3-wire cable. Color styled . . . \$29.95 in mahogany. Slightly higher prices for white, blue, pink, green, yellow. Matched stations. Remote may be used for private or non-private operation; has press-to-talk switch that allows it to originate call to master. Natural voice reproduction. Ample sensitivity. Unbreakable cast zinc housings.

#### SPECIFICATIONS:

VOLTAGE .....	117 volts AC or DC
POWER OUTPUT .....	2.5 Watts
POWER CONSUMPTION .....	30 Watts
TUBES.....12B7—Voltage Amplifier	
50B5—Beam Power Amplifier	
Selenium Rectifier	
SPEAKERS.....In Master and Remote are 3" Alnico V Magnet—3.2 ohm voice coil	
DIMENSIONS.....	5" x 4 1/2" x 5 1/2" high
	Shipping Weight: 7 1/2 pounds

WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES

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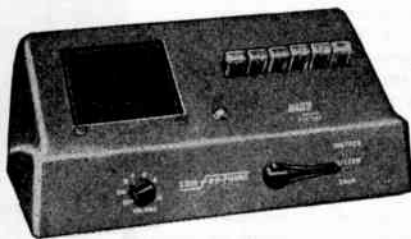
**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

**MASCO CON-FER-PHONE Now — One Master Completely Flexible for any Combination System.**

Build a system around any one Master to meet your requirements. Available in Six and Twelve Station Masters. Remote Available With or Without Call Switch and With 6 Position Master Station Selector.



**JMP-12 MASTER STATION**



**JMP-6 MASTER STATION**



**JS-6 REMOTE**

**FEATURES:**

- For Master-to-Master-to-Remote Intermix Installation.
- For Master-to-Master Installation.
- For Master-to-Remote Installation.
- Remote Station for two-way conversation with Masters.
- Remote Station can originate call to Masters.
- Masters may have personal remotes.
- Push-Button station selection.
- Press-to-talk switch with dictate position on Master.
- Individual or group conversation.
- Volume control with on-off switch.
- On-Off indicating light.
- AC-DC operation.
- Finished in attractive walnut hammerstone.
- Finish available in baked white enamel.
- U/L Approved.

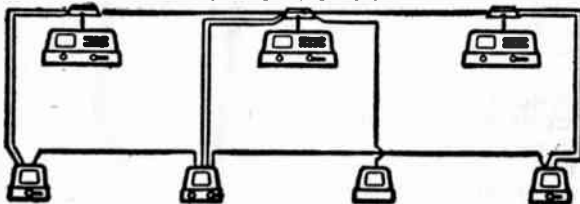


Illustration of a Master-to-Master-to-Remote Inter-Mix Installation:

The above is an inter-mixed system using both Masters and Remotes. Masters may call selectively or to all masters and remotes in the circuit. Master stations can originate calls to any remote at will. Remotes can answer any master from a distance but cannot originate calls nor talk to other remotes. Remotes can originate calls to any master in the circuit, but cannot talk with other remotes. Model JS Remote may originate a call to only one master. Model JS-6 Remote may originate a call to as many as six masters. Remotes with switch can be installed for private or non-private use.

Each master can have his own private hook-up of remotes. The remotes may or may not originate calls to the individual master. Masters can call each other regardless of whether master being called has its power on or off.

Illustration shows less than the maximum number of units possible in installation.

A JMP-6 Master may be connected to a total of six other units and a JMP-12 Master to a total of twelve other units. These units may be other masters or the JL, JS, and JS-6 Remotes, or the MB-8N Booster Amplifier. All of these units may be mixed.

**SPECIFICATIONS FOR MODELS JMP-6 and JMP-12 MASTERS and MODELS JL, JS, and JS-6 REMOTES**

<b>MASTER VOLTAGE</b>	117 Volts AC or DC
<b>POWER OUTPUT</b>	2.5 Watts
<b>POWER CONSUMPTION</b>	30 Watts
<b>CONTROLS</b>	6 and 12 Push-Button station selectors Volume control with on-off switch
<b>TUBES</b>	1-12SJ7 Dual Triode Amplifier 1-50L6 Beam Power Amplifier 1-50Y6 Rectifier

<b>MASTER AND REMOTE SPEAKER</b>	4" Alnico V Magnet 13-Ohm Voice Coil
<b>FINISH</b>	Walnut Hammerstone or White Baked Enamel
<b>DIMENSIONS</b>	Master: 12 1/2" x 7 1/2" x 5 1/2" high Remote: 6 1/2" x 7 1/2" x 5 1/2" high
<b>SHIPPING WEIGHT</b>	Master: 8 lbs. Remote: 3 1/4 lbs.



**MB-8N**

**AMPLIFIER SPECIFICATIONS • MODEL MB-8N**

<b>POWER OUTPUT</b>	8 Watts, at less than 5% distortion
<b>PEAK OUTPUT</b>	13 Watts
<b>INPUT</b>	One, 13 Ohms
<b>FREQUENCY RESPONSE</b>	± 2 DB 50 to 10,000 CPS
<b>CONTROLS</b>	One, Master Gain with On-Off Switch
<b>TUBES</b>	1-6SJ7, 1-6L6G, 1-5Y3GT (Rectifier)
<b>OUTPUT IMPEDANCES</b>	3.2, 8, 500 Ohms
<b>HUM LEVEL</b>	.60 DB below output of 8 Watts
<b>POWER CONSUMPTION</b>	75 Watts, 117 Volts, 60 Cycles
<b>DIMENSIONS</b>	10" x 6" x 7 1/4" high
<b>SHIPPING WEIGHT</b>	14 lbs.

**MB-8N 8-WATT BOOSTER AMPLIFIER**

**FEATURES:** U/L Approved  
• Tapped Output • Master Gain Control • Input Matched to Master • Designed for Long Hour Usage.

**APPLICATION:** Where paging is required in conjunction with intercommunication. It is the answer to high noise level voice penetration or for large area voice coverage. It is used with separate speakers and baffles.

Write to factory for catalog giving complete description of Con-Fer-Phone Intercommunication Equipment.

**WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES**

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<b>PRICES</b>		<b>List Price</b>
<b>JMP-6</b>	Six-Station Master with Tubes	\$57.95
<b>JMP-12</b>	Twelve-Station Master with Tubes	87.95
<b>JL</b>	Remote Less Call Switch	12.75
<b>JS</b>	Remote With Call Switch	14.00
<b>JS-6</b>	Remote with 6-Position Master Station Selector and Call Switch	19.95
	Booster Amplifier, 8 Watts, with Cover, with Matched Tubes	57.50
<b>BJ-6</b>	Junction Box for use with JMP-6 Master and JS-6 Remote. Consists of a terminal strip containing 8 pair of terminal lugs mounted on a metal chassis including a dust cover	7.00
	Above Junction Box, factory installed	9.50
<b>BJ-12</b>	Junction Box for use with JMP-12 Master. Consists of a terminal strip containing 14 pair of terminal lugs mounted on a metal chassis and includes a dust cover	7.25
	Above Junction Box, factory installed	10.00
<b>CABLE PRICES</b>		<b>List Price, per 100 ft.</b>
<b>SC</b>	One Pair Shielded Twisted No. 20 Solid. No outside covering	\$ 6.75
<b>SCB</b>	One Pair Shielded Twisted No. 20 Solid, with over-all Weather-proof Braid Covering. (This is not water-proof)	8.50
<b>TW-4</b>	Four Pair, each pair Twisted No. 20 Solid with over-all outside Braid Covering all four pair	17.00
<b>TW-7</b>	Seven Pair, each pair Twisted No. 20 Solid with over-all outside Braid Covering all seven pair	23.75
<b>TW-13</b>	Thirteen Pair, each pair Twisted No. 20 Solid with over-all outside covering all thirteen pair	47.50
<b>S</b>	One Pair Twisted Unshielded No. 20 Solid. No outside covering	3.75

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

# MASCO DELUXE SCHOOL SYSTEMS

## CENTRALIZED CONTROL CONSOLE FOR 20, 40, 60 CLASSROOMS

### 50 WATT PROGRAM AMPLIFIER WITH SEPARATE BUILT-IN 8 WATT INTERCOMMUNICATION AMPLIFIER

**FEATURES:** Available for 20, 40, 60 rooms • Separate 50 watt program amplifier • Separate 8 watt intercom amplifier • Self-contained AM-FM tuner • Available with 3 speed Webster record changer or dual speed transcription player • DB output level meter • Emergency "all-call" in one action • Room pickup from any room to any or all rooms • Room "call-in" provided • Monitoring facility without loss of room "call-in" • Pre-tuning of radio without loss of room "call-in" • Two-way conversation between control console and any room • Two microphone channels may be mixed with phono or radio • Remote control provided for auditorium microphones • Balanced line • Telephone line input • Underwriters' Laboratories approved.

**DESIGN AND CONSTRUCTION:** All models are constructed of steel and finished in brown hammertone. Phonograph or record changer mounts in "pull-out" drawer. Each model is equipped with an AM-FM tuner. Built-in intercom channel, DB output level meter and monitor speaker.

#### OTHER MASCO DELUXE SCHOOL SYSTEMS CENTRALIZED CONTROL CONSOLE FEATURING:

- PROGRAM AND INTERCOM OPERATION
- ROOM BROADCAST FEATURE
- CLASSROOM PRIVATE OR NON-PRIVATE OPERATION
- EMERGENCY CONTROL FEATURE
- REMOTE MICROPHONE CONTROL

PRICES:	List Price
MCS-60—Complete Console for 60 Classrooms (50-Watt Power Amplifier), Inter-Com Amplifier, AM-FM Tuner and *Dual-Speed Transcription Player.....	\$1,380.00
MCS-40—Same as above but for 40 Classrooms.....	1,320.00
MCS-20—Same as above but for 20 Classrooms.....	1,280.00

Shipping Weight: All Models 270 lbs.



PRICES: OPTIONAL EQUIPMENT	List Price
*To substitute the Webster Model 100 Three Speed Automatic Record Changer, ADD.....	\$56.75
To convert to low impedance (specify tap setting when ordering) for each input, ADD.....	22.50
RCB Remote Control Box.....	12.50
Matching Transformer .....	3.50

### School and Institutional Control Amplifier with Complete Program Facilities MICROPHONE • RADIO • PHONOGRAPH

#### MS SERIES FOR 6 TO 36 STATIONS

28 Watts of Audio Power, 40 Watts Peak Power for 6, 12, 18, 24, 30 and 36 Stations with Built-in Intercommunication Channel.



MS-36

**FEATURES:** 28 Watt Amplifier • Built-in Intercommunication Channel • Two-way conversation • Simultaneous or selective paging • External phono provision • Volume-level indicator • Input selector switch • External microphone provision • Provision for external radio • U/L approved.

**DESIGN AND CONSTRUCTION:** Ample power for each speaker. Ample gain for external microphone and phonograph pickup. Speaker switches connected for group or selective paging. Master switch permits simultaneous paging. Calls may originate from any room to master when proper interconnecting cable is used. Separate volume controls for level adjustment of all calls. Volume-level indicator for correct level setting. Provision for connecting an external phonograph. Any standard radio may be adjusted for use with this system. Two-way conversation feature permits easy communication. Balanced line for simplicity of installations. Use of more than 15 db of inverse feedback assures negligible change of volume level regardless of varying speaker loads.

PRICES	List Price
MODEL MS-6—Control Amplifier with tubes for 6 stations.....	\$184.50
MODEL MS-12—Control amplifier with tubes for 12 stations....	189.50
MODEL MS-18—Control amplifier with tubes for 18 stations....	194.50
MODEL MS-24—Control amplifier with tubes for 24 stations....	199.50
MODEL MS-30—Control amplifier with tubes for 30 stations....	217.00
MODEL MS-36—Control amplifier with tubes for 36 stations....	229.50

### School and Institutional Control Amplifier with Self-Contained AM-FM Radio- Webster Three Speed Automatic Record Changer-Transcription Player

#### MPS SERIES FOR 10 TO 40 STATIONS



MPS-40

28 Watts Power Output 40 Watts Peak Power

#### Complete Program or Intercommunication Facilities

**FEATURES:** Built-in sensitive FM-AM tuner • Optional built-in three speed transcription player or Webster Model 100 three-speed record changer • Provides for 10 to 40 stations • Electronic Volume-level Indicator • Speaker switches provide for selective or group paging • Master switch allows for simultaneous paging • Built-in speaker is used for "talk" and "listen" • Input is provided for external microphone • May be installed for private or non-private operation • Private operation prohibits the control operator from "listening in" unless switched in at the station location • Use of more than 15 db of inverse feedback assures negligible change of volume level regardless of varying speaker loads • U/L approved.

PRICES	List Price
MODEL MPS-10 (for 10 stations) Control Amplifier with tubes with AM-FM Tuner and Single Speed Manual Phonograph.....	\$432.00
MODEL MPS-20 (for 20 stations) Control Amplifier with tubes with AM-FM Tuner and Single Speed Manual Phonograph.....	445.50
MODEL MPS-30 (for 30 stations) Control Amplifier with tubes with AM-FM Tuner and Single Speed Manual Phonograph.....	459.00
MODEL MPS-40 (for 40 stations) Control Amplifier with tubes with AM-FM Tuner and Single Speed Manual Phonograph.....	47.50

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

# MASCO COMBINATION HIGH FIDELITY DUAL SPEED PORTABLE TRANSCRIPTION PLAYERS AND PUBLIC ADDRESS SYSTEMS



FOR STANDARD TRANSCRIPTIONS AND LONG-PLAYING RECORDS—  
OFFERING THE CRYSTAL, LP, OR VARIABLE RELUCTANCE PICKUP

## FEATURES:

May be operated at 78, 33 $\frac{1}{3}$  or 45 R.P.M. • Variable-Speed adjustment lever • Varies basic speeds • Dual-Speed motor • Heavy-duty 12" PM speaker and 25 feet of cable • Individual microphone and phono inputs; allows mixing of voice and phonograph • Individual Bass and Treble controls allow effective control of tonal requirements • Individual motor and amplifier switch allows equipment to be used as a record player • U/L approved • 10 watts Push-Pull Output, 14 watts peak power • Carrying Weight: 36 lbs. • Rugged metal speaker grill • All-plywood carrying case—covered in attractive two-tone tweed and calf-trim fabricoid with corner protectors.

## PRICES AND DESCRIPTION

	List Price
<b>MT-16</b> —For standard and transcription recordings and microphone. Uses the Astatic #400 Arm with QT-3M Cartridge with osmium-tipped replaceable stylus. Dual speed motor, speed adjustment lever. COMPLETE PORTABLE .....	\$159.50
<b>MT-16L</b> —For long-playing, standard and transcription recordings and microphone. Uses one Astatic #400 Arm with the LQD "turnover" dual cartridge, with osmium-tipped replaceable stylus. Dual speed motor, speed adjustment lever. COMPLETE PORTABLE .....	\$175.00
<b>MT-16L-3</b> —Has constant speed motor 33 $\frac{1}{3}$ , 78 and 45 RPM for long-playing standard and transcription recordings and microphone. Has all other features of the Model MT-16L. COMPLETE PORTABLE .....	\$159.50

All Prices Plus Federal Excise Tax

	List Price
<b>VR-16S</b> —For standard and transcription recordings and microphone. Uses the G.E. variable reluctance magnetic cartridge mounted in a tangent transcription arm. Built-in scratch suppressor, dual speed motor, speed adjustment lever. COMPLETE PORTABLE .....	\$189.50
<b>VR-16L</b> —For long-playing, standard and transcription recordings and microphone. Uses the new G.E. variable reluctance magnetic "twist" cartridge mounted in a tangent transcription arm. Built-in scratch suppressor, dual speed motor, speed adjustment lever. COMPLETE PORTABLE .....	\$189.50
<b>VR-16L-3</b> —Has constant speed motor 33 $\frac{1}{3}$ , 78 and 45 RPM for long-playing standard and transcription recordings and microphone. Has all other features of the Model VR-16L. COMPLETE PORTABLE .....	\$189.50

All Prices Plus Federal Excise Tax

## 16" PORTABLE TRANSCRIPTION PLAYERS AND PUBLIC ADDRESS SYSTEMS FOR 78, 33 $\frac{1}{3}$ AND 45 RPM RECORDINGS

Designed for Convenience, Versatility, and Ruggedness—U/L Approved

### MODEL TD-16 Transcription Player



16"—For long-playing, standard and transcription recordings and microphone.

**FEATURES:** Has a built-in 5 watt AC amplifier • Plays standard, long-playing and transcription recordings • Has separate microphone input • Case is of modern design and covered in two-tone tweed and calf-trim fabricoid • Heavy-duty 8" PM speaker with 10 ft. of cable and plug mounted in the removable cover • Separately controlled inputs for phono and microphone • Microphone and phono may be mixed or used independently • U/L approved.

PRICE	List Price
TD-16 Complete Portable Transcription Player.....	\$124.95

Plus Federal Excise Tax

### MODEL T-16

16" Transcription Player for Standard, Long-Playing and Transcription Recordings

**FEATURES:** Plays standard, long-playing and transcription recordings • Case made of plywood and covered in two-tone tweed and calf-trim fabricoid • Heavy-duty 6" PM speaker with 10 ft. of cable with plug mounted in the removable cover • Uses 2 $\frac{1}{2}$  watt high-quality amplifier with separate volume and tone controls • The three-speed motor is free from wow or rumble • The Astatic Model 400 Arm has dual "turnover" cartridge correctly weighted to assure long record life • Permanent needles are replaceable • U/L approved.



PRICE	List Price
T-16 Complete Portable Transcription Player.....	\$97.95

Plus Federal Excise Tax

### MODEL MRP-16 DUAL SPEED 16" RECORD PLAYER



**FEATURES:** Model MRP-16 is a deluxe high quality two-speed 33 $\frac{1}{3}$  and 78 RPM portable transcription player for recordings up to 16 inches. It uses a dual speed motor with variable speed changer lever and an Astatic 400 arm with dual needle "turnover" cartridge for playing both standard and microgroove records. Case is all plywood with attractive two-tone fabricoid covering and reinforced corners. Operates from 117 v. AC, 60 cycles.

PRICE	List Price
MODEL MRP-16 RECORD PLAYER.....	\$79.95

Plus Federal Excise Tax

### MODEL MSD-16 Deluxe Combination Transcription Player and Public Address System

For standard, Transcription and Long-playing Recordings and Microphone

**FEATURES:** 14 watt push-pull 6V6 amplifier that has microphone, phono inputs, separate bass, treble tone controls • 2 heavy-duty 12" PM speakers each with 25 ft. cable with plugs • 1 dual-speed motor, 33 $\frac{1}{3}$  and 78 RPM with variable speed change lever • 1 Astatic model 400 Arm with the LQD "turnover" dual cartridge • 1 three-section portable, plywood case covered in two-tone tweed and calf-trim fabricoid • U/L approved.



PRICE	List Price
MODEL MSD-16 Transcription Player .....	\$219.95

Plus Federal Excise Tax

Write for Catalog No. 50 for Complete Amplifier Specifications

WEST OF ROCKIES ADD 5% TO ABOVE LIST PRICES •

Specifications and prices subject to change without notice.

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

# THE MASCO ECONOMY LINE



## 8 WATT SOUND EQUIPMENT

**AMPLIFIER FEATURES:** Microphone and phono input • Electronic mixing • Variable tone control • Standard voice coil output • 8 Watts undistorted output.

### AMPLIFIER SPECIFICATIONS FOR ME-8

POWER OUTPUT.....8 Watts  
 PEAK POWER.....12 Watts  
 INPUTS.....Two: Microphone and Phono  
 FREQUENCY RESPONSE...50 to 10,000 CPS  $\pm$ 2DB  
 SENSITIVITY:  
 Microphone......007 Volts for 8 Watts  
 Phonograph......4 Volts for 8 Watts  
 CONTROLS.....Three: Microphone, Phono, Tone  
 TUBES.....Four: 1-6SJ7, 1-6BF5, 1-6L6G, 1-5Y3GT (rectifier)  
 OUTPUT IMPEDANCES.....3.2 and 8 Ohms  
 HUM LEVEL......25 DB below Zero Level  
 POWER CONSUMPTION.....63 Watts

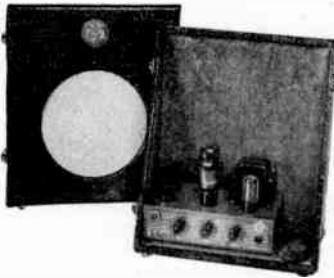
OPERATION.....117 Volts, 60 Cycles  
 DIMENSIONS.....10" x 5 1/2" x 4 1/2" high

### PRICES List Price

ME-8 Amplifier with tubes..... \$47.50  
 Shipping Weight 14 lbs.

MES-8 Portable system..... 89.95  
 Shipping Weight 24 lbs.

MES-8 Portable System Consists of:  
 1—8 Watt amplifier, with tubes  
 1—10" PM Speaker  
 1—25' Cable and plug  
 1—Portable carrying case Model 3030  
 1—Astatic JT-30 microphone with cable and connectors



MES-8

## 18 WATT SOUND EQUIPMENT

**AMPLIFIER FEATURES:** Tapped Output, 2-4-8-15-500 ohms • Beam Power Output 2-6L6G • Electronic Mixing Overall • Full Range Controls • Plug-in Phono Top • Plays 10" or 12" Records • U/L Approved • Available with Three-speed Motor.

### AMPLIFIER SPECIFICATIONS — Models ME-18, ME-18P

POWER OUTPUT.....18 Watts  
 PEAK POWER.....24 Watts  
 GAIN.....Microphone 118 DB, Phono 74 DB  
 CONTROLS.....Three: Microphone, Phono, Tone. With On-Off Switch  
 INPUTS.....Two: Microphone and Phono  
 TUBES.....Five: 1-6SJ7, 1-6SC7, 2-6L6G, 1-5Y3GT (rectifier)  
 OUTPUT.....Tapped 2-4-8-15-500 Ohms  
 POWER CONSUMPTION.....(ME-18) 107 Watts, 117 Volts, 60 CPS  
 HUM LEVEL......56 DB below 18 Watts  
 FREQUENCY RESPONSE.....50 to 10,000 Cycles  $\pm$  2 DB  
 DIMENSIONS.....(ME-18P) 12" x 10" x 8" high  
 DIMENSIONS.....(ME-18) 12" x 6 1/2" x 7 1/2" high

### PRICES

ME-18 Amplifier with tubes, with streamline cover... \$ 71.95  
 Shipping Weight 17 lbs.

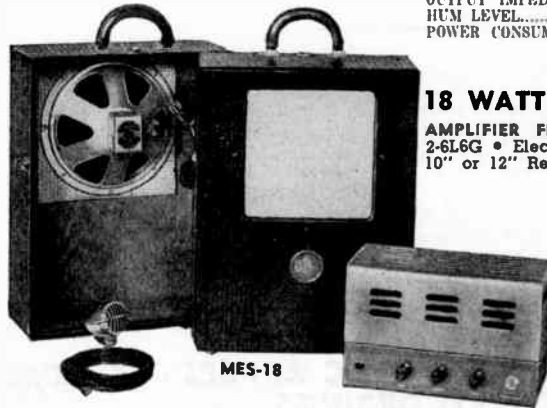
ME-18P Amplifier, with tubes, with phono top..... 97.50  
 Shipping Weight 26 lbs.

MES-18 Complete portable system..... 147.95  
 Shipping Weight 38 lbs.

MES-18P Complete portable system..... \$173.50  
 Shipping Weight 47 lbs.

MES-18P Portable System Consists of:  
 1—ME-18 or ME-18P Amplifier, with tubes  
 2—12" PM speakers  
 2—25-ft. Cable and plugs  
 1—Portable carrying case Model 3040  
 1—Astatic JT 30 microphone with 12-ft. cable and connectors

The models ME-18P amplifier and MES-18P system are available with a three-speed motor and all purpose pick-up with "turnover" cartridge. Add to List Price \$10.00. Specify when ordering.



MES-18



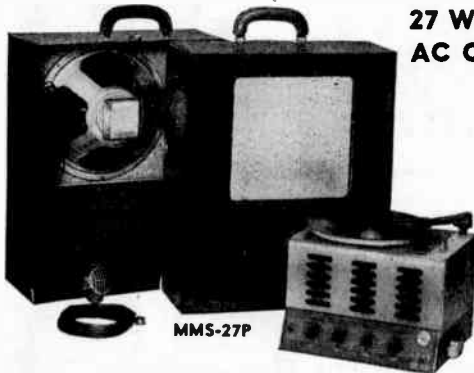
ME-18P

## 27 WATT MOBILE AMPLIFIER FOR 6 VOLT DC AND 115 VOLT AC OPERATION with SINGLE OR THREE SPEED PHONO TOP

**AMPLIFIER FEATURES:** Peak power 40 watts • Self-contained power supplies • "Stand-by" battery saver switch • Extra heavy duty vibrator • Full output AC or DC operation • Ripple-free operation • Rugged construction • Available with Astatic Model AB-8M Pickup • Supplied with Power Cables • U/L Approved.

### AMPLIFIER SPECIFICATIONS FOR MM-27P

POWER OUTPUT.....27 Watts  
 PEAK POWER.....40 Watts  
 GAIN.....Microphone 125 DB, Phono 78 DB  
 CONTROLS.....Four: Two Microphones, Phono, Tone  
 SWITCHES.....On-Off AC, On-Off Phono Motor, Stand-By Battery Saver Switch  
 INPUTS.....Three: Two Microphones, One Phono  
 TUBES.....Six: 2-6SC7, 1-6SJ7, 2-6L6G, 1-5V4G (rectifier)  
 OUTPUT.....Tapped 2-4-8-15-500 Ohms  
 POWER CONSUMPTION.....AC 130 Watts, 8 Volt DC, 25 Amps.  
 HUM LEVEL.....AC, 55 DB below Output of 27 Watts DC, Ripple-Free  
 FREQUENCY RESPONSE.....50 to 10,000 CPS  $\pm$  2 DB  
 DIMENSIONS.....12" x 11" x 8" high



MMS-27P

### PRICES

MM-27P 25 watt mobile phono-top amplifier, with tubes, with single speed motor..... \$175.00  
 Shipping Weight 39 lbs.

MMS-27P 25 watt mobile phono-top complete portable system with single speed motor..... 254.00  
 Shipping Weight 82 lbs.

MMO-27P 25 watt mobile phono-top, complete outdoor system ..... 299.95

### List Price

MMO-27P Outdoor System Consists of:  
 1—MM-27P Phono top amplifier, with tubes  
 2—Masco-University Model MA-25 driver units  
 2—Masco-University Model PH reflex trumpets  
 2—25' Cables and plugs  
 1—Astatic JT-30 microphone with cable and connectors

MMS-27P Portable System Consists of:  
 1—MM-27P Phono top amplifier, with tubes  
 2—12" PM speakers  
 2—25' Cables and plugs  
 1—Portable carrying case Model 3050  
 1—Astatic JT-30 microphone with cable and connectors

To secure a LOW-IMPEDANCE INPUT for amplifiers, see PAGE B-13

### WEST OF ROCKIES ADD 5% TO ALL LIST PRICES

Amplifiers licensed under U.S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company. Specifications and prices subject to change without notice.

If Astatic Model AB-8M counterbalanced pickup is desired, add to List \$9.75. The Models MM-27P amplifier, MMS-27P portable system, and MMO-27P outdoor system are available with a three-speed motor and all-purpose pickup with "turnover" cartridge. Add to List Price \$10.00. Specify when ordering.

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

# THE MASCO ECONOMY LINE



## 27 WATT SOUND EQUIPMENT

**AMPLIFIER FEATURES:** Output Tapped, 2-4-8-15-500 Ohms • Two Microphones and Phono • Electronic Mixing Overall • Beam Power 6L6 Output • Undistorted 27 Watts Output • Three Separate Inputs • U/L Approved.

### AMPLIFIER SPECIFICATIONS FOR MODEL ME-27:

POWER OUTPUT.....27 Watts  
 PEAK POWER.....38 Watts  
 GAIN.....Microphone 125 DB, Phono 78 DB  
 CONTROLS.....Four—Two Microphones, Phono, Tone, with On-Off Switch  
 INPUTS.....Three—Two Microphones, One Phono  
 TUBES.....Six: 1-6SJ7, 2-6SC7 2-6L6G, 1-5V4G (rectifier)  
 OUTPUT.....Tapped 2-4-8-15-500 Ohms  
 POWER CONSUMPTION.....100 Watts, 117 Volts, 60 CPS  
 HUM LEVEL.....55 DB below 27 Watts  
 FREQUENCY RESPONSE.....50 to 10,000 Cycles  $\pm$  2 DB  
 DIMENSIONS.....15" x 8" x 8"

### PRICES

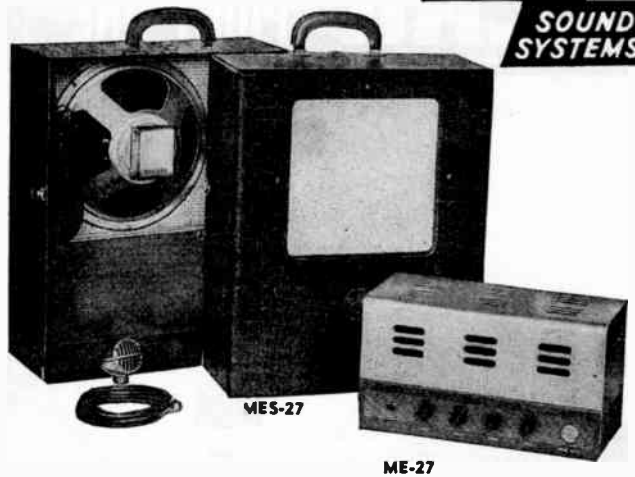
### List Price

ME-27—Amplifier with tubes, with streamline cover..... \$ 93.50  
 Shipping Weight 30 lbs.

MES-27—Complete portable system..... \$172.50  
 Shipping Weight 54 lbs.

### MES-27 Portable System Consists of:

- 1—ME-27 Amplifier, with tubes
- 2—12" PM speakers
- 2—25-ft. Cables and plugs
- 1—Portable carrying case Model 3050
- 1—Astatic JT-30 microphone with cable and connectors



## 36 WATT SOUND EQUIPMENT

**AMPLIFIER FEATURES:** Three Input Channels • Bass and Treble Tone Equalizers • Electronic Mixing Overall • Peak Power 45 Watts • U/L Approved.

### AMPLIFIER SPECIFICATIONS for ME-36 and ME-36R

POWER OUTPUT.....36 watts  
 PEAK POWER.....45 watts  
 GAIN.....Microphone 125 DB, phono 78 DB  
 CONTROLS.....Five—Two microphones, phono, 1-bass, 1-treble  
 Separate On-Off Switch on Changer  
 INPUTS.....Three—Two microphones, one phono  
 TUBES.....Seven—2-6SJ7, 1-6SC7, 1-6SN7GT, 2-6L6G, 1-5U4G  
 (rectifier)  
 OUTPUT.....Tapped 2-4-8-15-500 ohms  
 POWER CONSUMPTION.....(ME-36) 150 watts, 117 volts, 60 cps  
 HUM LEVEL.....58 DB below 36 watts  
 FREQUENCY RESPONSE.....50 to 10,000 cycles  $\pm$  2 DB  
 DIMENSIONS.....(ME-36) 15" x 8" x 8" high  
 DIMENSIONS.....(ME-36R) 15" x 15" x 9" high

### PRICES

### List Price

ME-36 Amplifier with tubes, with streamline cover..... \$113.50  
 Shipping Weight 30 lbs.

MES-36 Complete portable system..... 102.50  
 Shipping Weight 58 lbs.

ME-36R—Amplifier with tubes, with Webster Model  
 100 three speed changer mounted on top of cover..... 205.00  
 Shipping Weight 48 lbs.

### MES-36 Portable System Consists of:

- 1—ME-36 Amplifier with tubes
- 2—12" PM Speakers
- 2—25' cables and plugs
- 1—Astatic JT-30 microphone with cable and connectors
- 1—Portable carrying case Model 3050

The Model ME-36R cannot be supplied  
 in a portable system



**MODEL ME-36R**  
 Featuring the  
 Webster Model 100  
 Three-Speed Changer

## 52 WATT AMPLIFIER

**AMPLIFIER FEATURES:** Separate Bass and Treble Equalizers • Peak Output 64 Watts • Completely Fused • Hum-free Operation • Universal Output • Four 6L6G Tubes • Full Electronic Mixing • U/L Approved.

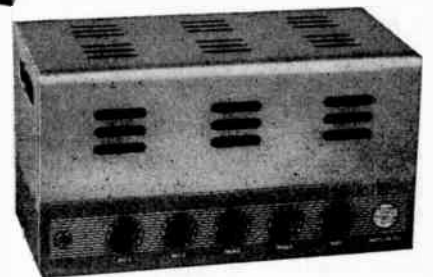
### AMPLIFIER SPECIFICATIONS for MODEL ME-52

POWER OUTPUT.....52 watts  
 PEAK POWER.....64 watts  
 GAIN.....Microphone 130DB, Phono 80DB  
 CONTROLS.....Five—Two Microphones, Phono, 1-Bass, 1-Treble  
 With On-Off Switch  
 TUBES.....Nine—1-6SJ7, 2-6SC7, 4-6L6G, 2-5V4G (rectifiers)  
 INPUTS.....3—Two Microphones, One Phono  
 OUTPUT.....Tapped at 2-4-8-15-500 Ohms  
 POWER CONSUMPTION.....215 Watts, 117 Volts, 60 CPS  
 HUM LEVEL.....61 DB below 52 Watts  
 FREQUENCY RESPONSE.....50 to 10,000 Cycles  $\pm$  2 DB  
 DIMENSIONS.....16" x 10" x 10" high

### PRICE

### List Price

ME-52 Amplifier with tubes, with streamline cover..... \$139.50  
 Shipping Weight 40 lbs.



ME-52

To secure a LOW-IMPEDANCE INPUT for  
 amplifiers, see PAGE B-13

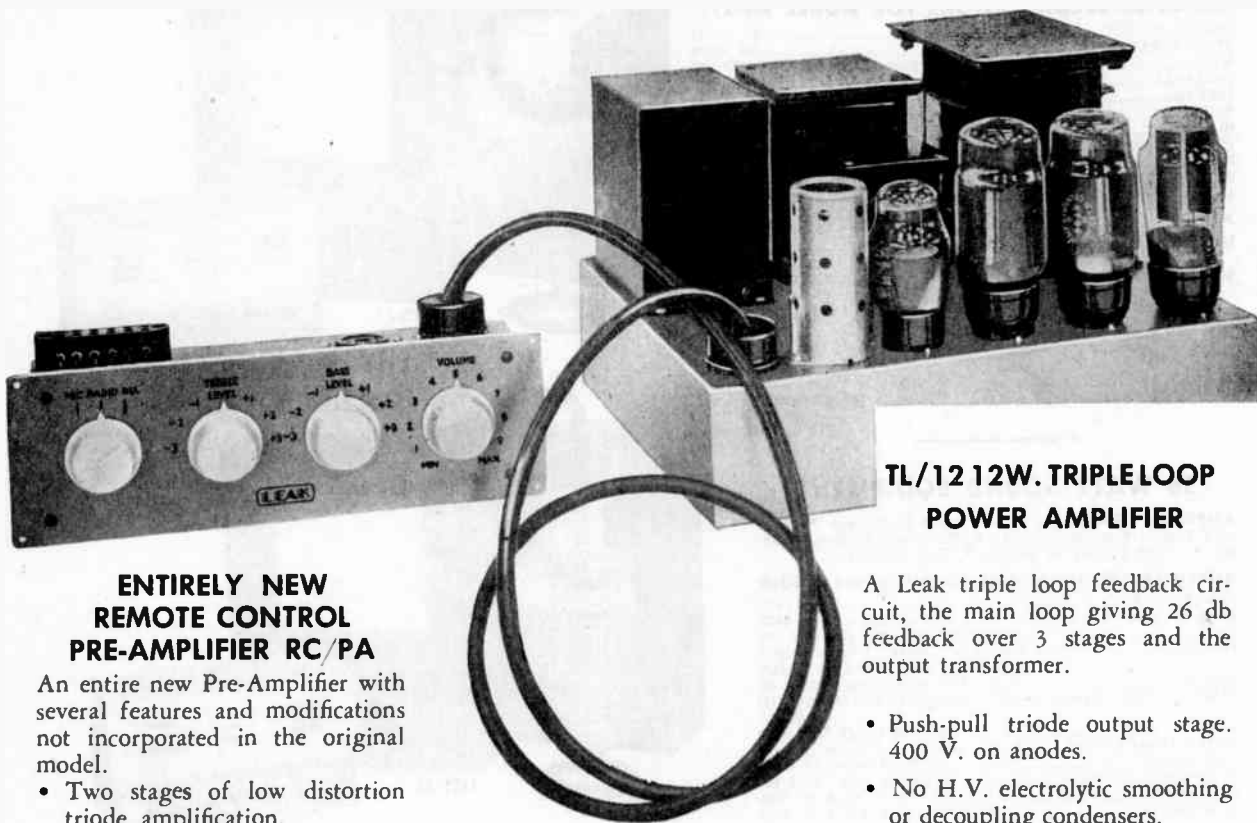
### WEST OF ROCKIES ADD 5% TO ALL LIST PRICES

Amplifiers licensed under U. S. patents of Western Electric Company, Inc., and American Telephone and Telegraph Company. Specifications and prices subject to change without notice.

**MARK SIMPSON MANUFACTURING CO., Inc. • LONG ISLAND CITY, N. Y.**

# LEAK "POINT ONE"

BRITAIN'S BEST AUDIO AMPLIFIER  
DISTORTION: 0.1%



### ENTIRELY NEW REMOTE CONTROL PRE-AMPLIFIER RC/PA

An entire new Pre-Amplifier with several features and modifications not incorporated in the original model.

- Two stages of low distortion triode amplification.
- Input switching for radio, magnetic pickup and crystal pickup.
- Pickup positions embody low frequency compensation *plus* an additional 15 db at 50 c/s in three steps.
- Three steps of treble loss are available for variation of roll off.
- Treble rise and bass loss also available.
- AC supply switch incorporated in volume control, enabling power amplifier to be switched off from the remote control pre-amplifier.
- Pilot light.

The unit will mount on motor-board through a cutout of 10 1/8" x 3 1/8" or it can be bolted to the power amplifier, in which case it becomes portable when a top cover is used.

For use only with Leak Amplifier.

By check of the National Physical Laboratory (equivalent National Bureau of Standards) for TL/12 SPECIFICATION IS GIVEN HIGHER RATING THAN CLAIMS LISTED HERE. Certificate available.

### TL/12 12W. TRIPLE LOOP POWER AMPLIFIER

A Leak triple loop feedback circuit, the main loop giving 26 db feedback over 3 stages and the output transformer.

- Push-pull triode output stage. 400 V. on anodes.
- No H.V. electrolytic smoothing or decoupling condensers.
- Impregnated transformers; tropically finished components.
- H.V. and L.V. supplies for pre-amp. and radio units.
- Distortion: at 1,000 c/s and 10 W. output, 0.1%; at 60 c/s and 10 W. output, 0.19%; at 40 c/s and 10 W. output 0.21%.
- Hum and Noise:—72 to —80 db on 10 W.
- Frequency response:  $\pm 0.1$  db, 20 c/s-20 kc/s.
- Sensitivity: 160 mV.
- Damping Factor: 20. Input impedance: 1 Meg. Output impedances:  $2\omega$ ;  $7-9\omega$ ;  $15-20\omega$ ;  $28-36\omega$ . Phase margin  $20^\circ \pm 10^\circ$ . Gain margin 10 db + 6 db.

25 W. model available.

Pre-Amplifier and Power Amplifier, Complete..... **\$179.20**  
Amplifier Only ..... **147.20**

**BRITISH INDUSTRIES CORPORATION**

**New York 13, N. Y.**

# BOGEN HIGH POWER SOUND EQUIPMENT

## MODEL E75

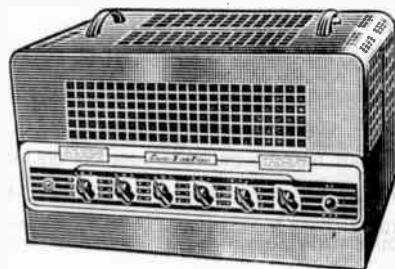
70 WATTS

### SPECIFICATIONS

POWER OUTPUT: 70 watts (2 - 35 watt power amplifier) at less than 4%. PEAK POWER: 100 watts.  
 FREQUENCY RESPONSE: 30-14,000 cycles,  $\pm 1$  db.  
 HUM: Fund.: -70 db. Mic.: -59 db.  
 OUTPUT IMPEDANCE: Each power amplifier tapped at 4-8-15-500-1000 ohms.  
 POWER CONSUMPTION: 290 watts, 117 V, 50-60 cycles AC.  
 TUBES: Total 14: 2-6SF5, 2-6SL7GT, 2-6F6G, 2-7Z4, 4-6L6G, 2-5U4G.  
 DIMENSIONS: 17 $\frac{1}{2}$ " long, 10" high, 12 $\frac{1}{2}$ " deep.

E75 HIGH IMPEDANCE AMPLIFIER:  
 Complete with tubes:  
 List Price.....\$223.75

EL75 LOW IMPEDANCE AMPLIFIER:  
 Same as E75, but first microphone input is low impedance 200 ohms. 50 or 500 ohms available if specified.  
 List Price.....\$252.25



Model E75

## MODEL HX50

50 WATTS

### SPECIFICATIONS

POWER OUTPUT: 50 watts at less than 3%. PEAK POWER: 90 watts.  
 FREQUENCY RESPONSE: 20/20,000 cycles  $\pm 2$  db.  
 TONE CORRECTOR RANGE: bass control: -30 to +20 db at 100 cycles; treble control: -14 to +21 db at 10,000 cycles.  
 HUM: Fund.: -65 db. Mic.: -58 db.  
 OUTPUT IMPEDANCE: 4-8-15 ohm and 2 constant voltage taps (70 and 140 V).  
 POWER CONSUMPTION: 240 watts, 117 V, 50-60 cycles AC.  
 TUBES: Total 12: 5-6SC7, 2-6SL7, 1-6SN7, 1-5R4GY, 2-807, 1-5Y3.  
 DIMENSIONS: 17" long, 9" high, 14" deep.

THREE MICROPHONE CHANNELS — ONE PHONOGRAPH CHANNEL — DUAL ELECTRONIC TONE CORRECTORS — CONSTANT VOLTAGE OUTPUT UNDERWRITERS' LABORATORIES APPROVED  
 The proudest achievement in Bogen's 15 years of sound leadership. Incorporates the new Bogen ANTI-FEEDBACK CONTROL which permits easy "tuning out" of acoustic feedback. Allows greater output to be used—makes mike placement less critical—stabilizes entire sound system.



Model HX50

HX50 HIGH IMPEDANCE AMPLIFIER:  
 Complete with tubes.  
 List Price.....\$254.00

HXL50 LOW IMPEDANCE AMPLIFIER:  
 Same as HX50 but first microphone input is low impedance 200 ohms. (50 or 500 ohms available if specified.)  
 List Price.....\$276.50

## MODEL H50

50 WATTS

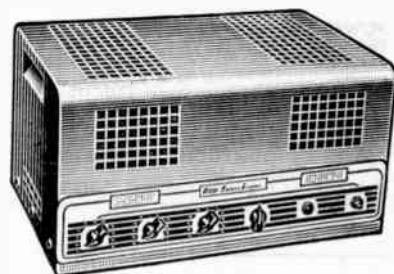
### SPECIFICATIONS

POWER OUTPUT: 50 watts at less than 5%. PEAK POWER: 90 watts.  
 FREQUENCY RESPONSE: 30-20,000 cycles,  $\pm 2$  db.  
 GAIN: Microphone inputs (2): 120 db. Phono input (1): 80 db.  
 HUM: Fund.: -74 db. Mic.: -59 db.  
 OUTPUT IMPEDANCE: 4-8-15 ohms and two constant voltage taps (70 V and 140 V).  
 POWER CONSUMPTION: 210 watts, 117 V, 50-60 cycles AC.  
 TUBES: Total 9: 3-6SC7, 1-6SL7, 1-6SN7, 2-807, 1-5R4GY, 1-5Y3.  
 DIMENSIONS: 17" wide, 12 $\frac{1}{2}$ " deep, 9 $\frac{1}{4}$ " high.

TWO MICROPHONE CHANNELS — ONE PHONOGRAPH CHANNEL — BASS-TREBLE TONE CONTROL — CONSTANT VOLTAGE OUTPUT — UNDERWRITERS' LABORATORIES APPROVED  
 Push-Pull 807 output with constant voltage output taps to simplify line matching transformer calculations.

H50 HIGH IMPEDANCE AMPLIFIER:  
 Complete with tubes.  
 List Price.....\$193.00

HXL50 LOW IMPEDANCE AMPLIFIER:  
 Same as H50 but first microphone input is low impedance, 200 ohms. 50 or 50 ohms available if specified.  
 List Price.....\$215.50



Model H50

## MODEL HX30

30 WATTS

### SPECIFICATIONS

POWER OUTPUT: 30 watts at 2%. PEAK POWER: 45 watts.  
 FREQUENCY RESPONSE: 50-18,000 cycles,  $\pm 1.5$  db.  
 GAIN: Microphone inputs (3): 121 db. Phono input (1): 85 db.  
 HUM: Fund.: -67 db. Mic.: -60 db.  
 OUTPUT IMPEDANCE: 4-8-15-500 ohms and 70 volts.  
 POWER CONSUMPTION: 140 watts, 117 V, 50-60 cycles AC.  
 REMOTE CONTROL PROVISION: Built-in—permits mixing and fading two of the 4 available inputs from a remote point.  
 TUBES: Total 10: 5-6SC7, 2-6SL7GT, 2-6L6G, 1-5U4G.  
 DIMENSIONS: 17" wide, 9" high, 14" deep

THREE MICROPHONE CHANNELS — ONE PHONOGRAPH CHANNEL — DUAL ELECTRONIC TONE CORRECTORS — REMOTE CONTROL OF GAIN — UNDERWRITERS' LABORATORIES APPROVED  
 Revolutionary Bogen anti-feedback control permits tuning out acoustic feedback for higher useable output, greater stability.



Model HX30

HX30 HIGH IMPEDANCE AMPLIFIER:  
 Complete with tubes.  
 List Price.....\$199.50

HXL30 LOW IMPEDANCE AMPLIFIER:  
 Same as HX30 but first microphone input is low impedance, 200 ohms. 50 or 500 ohms available if specified.  
 List Price.....\$222.00

FOR FURTHER INFORMATION ON AMPLIFIERS AND COMPLETE BOGEN SYSTEMS ASK FOR THE LATEST BOGEN CATALOG PRICES IN ZONE 2 ARE APPROXIMATELY 5% HIGHER \* ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DAVID BOGEN CO., INC., NEW YORK 12, N. Y.



# BOGEN MEDIUM POWER SOUND EQUIPMENT

## MODEL H30 30 WATTS

TWO MICROPHONE CHANNELS — ONE PHONOGRAPH CHANNEL  
SIX POSITION MULTI-RANGE TONE CORRECTOR  
LOW NOISE LEVEL — UNDERWRITERS' LABORATORIES  
APPROVED

### SPECIFICATIONS

POWER OUTPUT: 30 watts at less than 5%.  
PEAK POWER: 40 watts.  
FREQUENCY RESPONSE: 30-12,000 cycles,  $\pm 2.5$  db.  
GAIN: Microphone: 119 db. Phono: 77 db.  
HUM: Fund.: -48 db. Mic.: -60 db.  
OUTPUT IMPEDANCE: 4-8-16 ohms and 70V-TAP (167 ohms.)  
POWER CONSUMPTION: 140 watts, 117 V, 50-60 cycles AC.  
TUBES: Total 7: 3-6SF5, 1-6SL7, 2-6L6G, 1-5U4G.  
DIMENSIONS: 15 1/2" long, 11" deep, 7 1/2" high.

H30 HIGH IMPEDANCE AMPLIFIER:  
Complete with tubes.  
List Price \_\_\_\_\_ \$120.75

HL30 LOW IMPEDANCE AMPLIFIER:  
Same as H30 but first microphone input is low impedance, 200 ohms. (50 or 500 ohms available if specified.)  
List Price \_\_\_\_\_ \$143.25



Model H30

## MODELS F30M and F30A

30 WATT AMPLIFIERS  
With Built-in Phonographs



Model F30A

The perfect answer to a general duty portable amplifier with built-in phonograph. F30M has a built-in single speed (78 RPM) manual record player. F30A uses a single speed (78 RPM) Webster automatic record changer.

F30 Systems are ideal for square dances, funeral parlor installations, clubs, rental systems.

F30A — List Price \_\_\_\_\_ \$186.50

F30M — List Price \_\_\_\_\_ 158.75

F30A with Webster 3 speed automatic record changer — List Price \_\_\_\_\_ 214.00

## MODEL H15 15 WATTS

TWO MICROPHONE CHANNELS — ONE PHONOGRAPH CHANNEL  
SIX POSITION MULTI-RANGE TONE CORRECTOR  
LOW HUM AND NOISE LEVEL — UNDERWRITERS'  
LABORATORIES APPROVED

### SPECIFICATIONS

POWER OUTPUT: 15 watts at less than 5%.  
PEAK POWER: 25 watts.  
FREQUENCY RESPONSE: 30-12,000 cycles,  $\pm 1.5$  db.  
GAIN: Microphone channels (2): 115 db. Phono channels (1): 74 db.  
HUM: Fund.: -70 db. Mic.: -60 db.  
OUTPUT IMPEDANCE: 4-8-16 ohms and 70 V.  
POWER CONSUMPTION: 95 watts, 117 V, 50-60 cycles AC.  
TUBES: Total 7: 3-6SF5, 1-6SL7GT, 2-6L6G, 1-5Y3G.  
DIMENSIONS: 15 1/2" long, 10 3/4" deep, 7 1/2" high.

H15 HIGH IMPEDANCE AMPLIFIER:  
Complete with tubes.  
List Price \_\_\_\_\_ \$103.75

HL15 LOW IMPEDANCE AMPLIFIER:  
Same as H15 but first microphone input is low impedance, 200 ohms. 50 or 500 ohms available if specified.  
List Price \_\_\_\_\_ \$126.25



Model H15

## MODEL HE10 10 WATTS

ONE MICROPHONE CHANNEL — ONE PHONOGRAPH CHANNEL  
SIX POSITION MULTI-RANGE TONE CORRECTOR — PUSH-PULL OUTPUT  
FIVE TUBE, HIGH GAIN CIRCUIT — LOW NOISE LEVEL  
UNDERWRITERS' LABORATORIES APPROVED

### SPECIFICATIONS

POWER OUTPUT: 10 watts at 4%.  
PEAK POWER: 15 watts.  
FREQUENCY RESPONSE: 60-10,000 cycles,  $\pm 1.5$  db.  
GAIN: Mic. channel: 117 db. Phono channel: 66 db.  
HUM: Fund.: -66 db. Mic.: -59 db.  
OUTPUT IMPEDANCE: 4-8-15-500 ohms.  
POWER CONSUMPTION: 70 watts, 117 V, 50-60 cycles AC.  
TUBES: Total 5: 1-6SJ7, 1-6SL7, 2-6V6, 1-5Y3GT.  
DIMENSIONS: 7" deep, 11" wide, 7 1/4" high.



Model HE10

HE10 HIGH IMPEDANCE AMPLIFIER:  
List Price \_\_\_\_\_ \$64.75

HE10 LOW IMPEDANCE AMPLIFIER:  
Complete with tubes. Same as HE10 but microphone input is low impedance, 200 ohms. 50 or 500 ohms available on transformer.  
List Price \_\_\_\_\_ \$87.25

FOR FURTHER INFORMATION ON AMPLIFIERS AND COMPLETE BOGEN SYSTEMS ASK FOR THE LATEST BOGEN CATALOG  
PRICES IN ZONE 2 ARE APPROXIMATELY 5% HIGHER • ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DAVID BOGEN CO., INC., NEW YORK 12, N. Y.

# BOGEN MOBILE SOUND EQUIPMENT

## MODEL HX632

### 32 WATT MOBILE SYSTEM

#### SPECIFICATIONS

POWER OUTPUT: AC: 32 watts at less than 5%.  
DC: 25 watts at 5%.

PEAK POWER: 40 watts.

FREQUENCY RESPONSE: 30-12,000 cycles  $\pm 2$  db.

GAIN: Mic. channel: 121 db. Phono channel: 80 db.

HUM: AC: -70 db.; DC: -60 db.

OUTPUT IMPEDANCE: 4-8-15-500 ohms, 70 V.

POWER CONSUMPTION: 120 watts, 117 VAC;  
23.5 amps., 6 V DC.

TUBES: Total 7: 2-6SL7GT, 2-6SF5, 2-6L6G,  
1-5U4G.

DIMENSIONS: 16" long, 16 $\frac{3}{4}$ " wide, 10 $\frac{1}{2}$ " high.

UNIVERSAL OPERATION 6 VOLT DC OR 110 VOLT AC  
ONE MICROPHONE CHANNEL — ONE PHONOGRAPH CHANNEL  
BUILT-IN PHONOGRAPH — UNDERWRITERS' LABORATORIES  
APPROVED  
SEPARATE BASS AND TREBLE CONTROLS



Model HX632

HX632 AMPLIFIER: Complete with tubes and phono.  
List Price \_\_\_\_\_ \$262.50

HX632TU OUTDOOR SYSTEM: Includes: HX632 amplifier with tubes; 2 Bogen-University LH trumpets with MA25 units; 1 Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.  
List Price \_\_\_\_\_ \$416.75

HX632TJ OUTDOOR SYSTEM: Same as HX632TU substituting 2 Jensen VH24 trumpets.  
List Price \_\_\_\_\_ \$426.75

## MODEL H623

### 23 WATT MOBILE SYSTEM

#### SPECIFICATIONS

POWER OUTPUT: AC: 23 watts at 5%.  
DC: 20 watts at 5%.

PEAK POWER: 30 watts.

FREQUENCY RESPONSE: 30-14,000 cycles  $\pm 2.5$  db.

GAIN: Microphone channel: 116 db. Phono channel: 73 db.

HUM: AC: Fund.: -74 db.; Mic.: -60 db.  
DC: Fund.: -75 db.; Mic.: -62 db.

OUTPUT IMPEDANCE: 4-8-15 ohms and 70 V.

POWER CONSUMPTION: 115 watts, 117 V. AC;  
14 amp., 6 V DC.

TUBES: Total 6: 2-6SF5, 1-6SL7GT, 2-6L6G, 1-7Z4.

DIMENSIONS: 15 $\frac{1}{4}$ " long, 10 $\frac{1}{2}$ " deep, 10 $\frac{1}{8}$ " high.

UNIVERSAL OPERATION 6 VOLT DC OR 110 VOLT AC  
ONE MICROPHONE CHANNEL — ONE PHONOGRAPH CHANNEL  
SIX POSITION TONE CORRECTOR  
BUILT-IN PHONOGRAPH — UNDERWRITERS' LABORATORIES  
APPROVED

H623 AMPLIFIER: Complete with phono and tubes.  
List Price \_\_\_\_\_ \$186.25

H623TJ OUTDOOR SYSTEM: Includes: H623 amplifier with tubes; 1 Jensen VH20 projector unit, 1 Bogen-Shure 710 crystal microphone with stand adapter, 7' cable and plug.  
List Price \_\_\_\_\_ \$259.25

H623TU OUTDOOR SYSTEM: Same as H623TJ substituting Bogen-University PH trumpet with MA25 unit.  
List Price \_\_\_\_\_ \$260.25



Model H623

## MODEL E66

### 6 WATT MOBILE SYSTEM

#### SPECIFICATIONS

POWER OUTPUT: 6 watts at 5%. PEAK POWER: 8 watts.

FREQUENCY RESPONSE: 60-9,000 cycles,  $\pm 2$  db.

GAIN: Microphone channel (1): 110 db. Phono channel (1): 75 db.

HUM: AC: -50 db.; DC: -62 db.

OUTPUT IMPEDANCE: 4-8-15 ohms.

POWER CONSUMPTION: 50 watts, 117 V AC;  
7 amps., 6 V DC.

TUBES: Total 4: 1-6SJ7, 1-6SL7GT, 1-6L6GA,  
1-6X5GT.

DIMENSIONS: 6 $\frac{1}{8}$ " wide, 9 $\frac{1}{4}$ " deep, 6 $\frac{1}{8}$ " high.

ONE MICROPHONE CHANNEL — PHONOGRAPH JACK — STANDBY POSITION ON POWER SWITCH — 110 V AC OR 6 V DC OPERATION



Model E66

MODEL E66 AMPLIFIER: Complete with tubes.  
List Price \_\_\_\_\_ \$75.25

MODEL E66F SYSTEM: Includes: 1-E66 amplifier with tubes, 1 University 1B8 trumpet, 1 Bogen-Shure 710 crystal microphone with stand adapter, 7' cable and plug.  
List Price \_\_\_\_\_ \$117.75

MODEL E66J SYSTEM: Same as above but trumpet is Jensen VH-91.  
List Price \_\_\_\_\_ \$117.75

FOR FURTHER INFORMATION ON AMPLIFIERS AND COMPLETE BOGEN SYSTEMS ASK FOR THE LATEST BOGEN CATALOG  
PRICES IN ZONE 2 ARE APPROXIMATELY 5% HIGHER \* ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DAVID BOGEN CO., INC., NEW YORK 12, N. Y.

# BOGEN HIGH FIDELITY EQUIPMENT

## MODEL PX15 15 WATT PHONO AMPLIFIER

### SPECIFICATIONS

POWER OUTPUT: 15 watts at less than 2% distortion. PEAK POWER: 30 watts.  
 FREQUENCY RESPONSE: 30-20,000 cycles  $\pm 1\frac{1}{2}$  db.  
 TONE CORRECTOR RANGE: Bass control: -23 db. to +20 db. at 60 cps. Treble control: -20 db. to +20 db. at 10,000 cps.  
 GAIN: Magnetic: 106 db.; Crystal: 78 db.  
 HUM: -75 db (referred to rated output).  
 OUTPUT IMPEDANCE: 4-8-16-500 ohms.  
 POWER CONSUMPTION: 117 V, 50-60 cycles, 105 watts.  
 TUBES: Total 6: 1-125J7, 1-12AH7, 1-6SL7, 2-6L6G, 1-5Y3GT.  
 DIMENSIONS: 15" x 8" x 9 $\frac{1}{4}$ ".

THE VERY FINEST IN HIGH FIDELITY FOR THE MOST CRITICAL LISTENER  
 New rangemaster control corrects for various conditions of record noise. Built-in pre-amplifier for G.E., Pickering, Astatic and similar magnetic pickups. Preamplifiers and voltage amplifier tubes use D.C. heated filaments for minimum hum. Dual tone controls provide bass boost and attenuation, treble boost and attenuation. Fifteen watts output at less than 2%. Provision for simple external switching of pickup and tuner removing preamplifier load when tuner is in the circuit. Underwriters' Laboratories approved.

PX15 AMPLIFIER and tubes (less cage).  
 List Price ..... \$145.75

EXT-5: 4 ft. control extension kit for PX15, to facilitate cabinet installations.  
 List Price ..... \$21.25

CAG15—Cage for PX15 or PX15C.  
 List Price ..... \$6.60



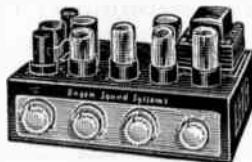
Model PX15

## MODEL DB10 10 WATT PHONO AMPLIFIER

### SPECIFICATIONS

POWER OUTPUT: 10 watts at 3%.  
 PEAK POWER: 15 watts.  
 FREQUENCY RESPONSE: 30-18,000 cps  $\pm 1$  db.  
 GAIN: Phono: 70 db.; with preamp. section: 92 db.  
 HUM: -68 db. (referred to rated output).  
 OUTPUT IMPEDANCE: 4, 8 and 16 ohms.  
 POWER CONSUMPTION: 70 watts at 117 v, 60 cps.  
 TUBES: 1-6SC7, 1-6SL7, 2-6V6GT, 1-5Y3GT.  
 DIMENSIONS: 11" w. x 7" d. x 7 5/16" h. (with cage.)  
 WEIGHT: 15 lbs.  
 TONE CONTROL: Bass: +19 to -20 db at 100 cps.  
 Treble: +14 to -16 db at 10,000 cps.

FOR TRUE HIGH FIDELITY AT MODERATE COST  
 Separate bass and treble controls. Built-in preamplifier for G.E., Pickering, Astatic and similar magnetic pickups. Provision for simple external switching of pickup and tuner, removing preamplifier load when tuner is in circuit. Extremely low hum and noise level. Underwriters' Laboratories Approved.



Model DB10

DB10 AMPLIFIER and tubes (less cage).  
 List Price ..... \$82.50

EXT-4: 4 ft. control extension kit for DB10, to facilitate cabinet installations.  
 List Price ..... \$17.50

CAG8—Cage for DB10 or DB10C.  
 List Price ..... \$5.25

## MODEL PH10 10 WATT MULTI-RANGE PHONO AMPLIFIER

### MODEL PH10 AMPLIFIER:

Complete with tubes.  
 List Price ..... \$51.25

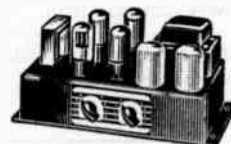
EXT-2: 4 ft. control extension kit for PH10, to facilitate cabinet installations.  
 List Price ..... \$10.00

MULTI-RANGE TONE SWITCH WITH FOUR LABORATORY SELECTED RESPONSE CURVES — VIRTUALLY HUMLESS PERFORMANCE IN ANY TONE POSITION — PUSH-PULL OUTPUT.

### SPECIFICATIONS

POWER OUTPUT: 10 watts at 5%.  
 PEAK POWER: 14 watts.  
 FREQUENCY RESPONSE: (Full Range) 40-15,000 cps  $\pm 1$  db.  
 GAIN: 72 db.  
 INPUT IMPEDANCE: (1) 500,000 ohms.

OUTPUT IMPEDANCE: 3.2 and 8 ohms.  
 HUM: -80 db. (referred to rated output).  
 POWER CONSUMPTION: 60 watts, 117 V, 60 cycles.  
 TUBES: Total 4: 1-6SL7GT, 2-6V6GT, 1-5Y3GT.  
 DIMENSIONS: 5" x 11" x 3" (overall height 6").



Model PH10

## DUAL SPEED HIGH FIDELITY PORTABLE TRANSCRIPTION PLAYER

### MODEL DP16 —For standard, transcription and long playing records and microphone.



Model DP16

Player is housed in sturdy  $\frac{3}{8}$ " plywood case, covered in heavy airplane cloth. Amplifier employs famous Bogen PH10 circuit. Jensen 10" speaker is mounted in removable cover. Two separate constant speed synchronous motors for 78 and 33 $\frac{1}{2}$  RPM. Record carrying compartment built-in. The Model DP16 uses a single ASTATIC N400 arm with LQD turn-over cartridge. Excellent for schools, broadcast stations, advertising agencies, lecturers, and social clubs. Underwriters' Laboratories Approved.

### SPECIFICATIONS

POWER OUTPUT: 10 watts at less than 5%.  
 PEAK POWER: 14 watts.  
 FREQUENCY RESPONSE: 40-15,000 cps  $\pm 1$  db.  
 GAIN: Phono channel: 68 db; Microphone channel: 115 db.  
 HUM: Phono channel: -75 db (referred to rated output) in flat response. Microphone channel: -58 db.  
 INPUT IMPEDANCE: Phono channel: 500,000 ohms. Microphone channel: 2 megohms.

OUTPUT IMPEDANCE: 8 ohms.  
 POWER CONSUMPTION: 85 watts — 117 V 60 cycle AC (with motor).  
 TUBES: Total 5: 1-6SJ7, 1-6SL76T, 2-6V6GT, 1-5Y3GT.  
 DIMENSIONS: 20 $\frac{1}{4}$ " deep, 18 $\frac{1}{2}$ " wide, 12 $\frac{1}{4}$ " high.  
 MODEL DP16—Complete with tubes, speaker.  
 List Price ..... \$170.75

WRITE FOR DESCRIPTIVE HIGH FIDELITY FOLDER LISTING ADDITIONAL UNITS.  
 PRICES IN ZONE 2 ARE APPROXIMATELY 5% HIGHER \* ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DAVID BOGEN CO., INC., NEW YORK 12, N. Y.

# BOGEN CENTRALIZED SOUND SYSTEMS AND COMMUNO-PHONES

**BOGEN CENTRALIZED SCHOOL SOUND SYSTEMS:** The entirely new Bogen centralized school systems now make available to progressive educators an instructional tool for which they have long sought. Simple—yet versatile—the new systems provide for radio and record program transmission selectively to any or all classrooms. Skillful design, which embodies many exclusive features, enables the entire school body to participate in dramatic presentations, school debates and similar activities where the audience was previously limited to the seating capacity of the auditorium.

Bogen Centralized School Sound Systems are designed to meet every requirement of the modern educational institution, regardless of size. They comply fully with requirements of the U. S. Office of Education and the RMA. Simplicity of operation enables the administrator to reduce confusion and thus to assure efficient effective work in all departments. Versatility of the systems speed learning, provide instant communication for fire drills and supplement the general routine.

Write for Complete Descriptive Catalog C9-49S.

**BOGEN CUSTOM DIVISION:** The Custom Division of the David Bogen Co. is maintained for the express purpose of offering engineering consultation on custom built requirements. This technical service covers initial design and layout of electrical specifications of any sound installation, large or small.

Although the David Bogen Co. manufactures the largest and most complete line of standard and De Luxe sound equipment, very often a customer's problem requires the design and construction of special equipment to meet particular requirements.

We invite you to submit your sound problems, technical inquiries, or request for quotations on special equipment to our Custom Division. If no specifications are available for your particular problem, merely send a description and pencilled sketch of the intended installation to our Custom Division. Its Engineering Staff is equipped with the finest facilities in the country and they will be glad to aid you in the solution of your particular problem, without obligation.

## NEW BOGEN DELUXE COMMUNO-PHONE SYSTEMS

### THREE VERSATILE MODELS TO SOLVE EVERY INTERCOMMUNICATION PROBLEM

#### MODEL "X"—Universal Deluxe Series for 115V 60 cycle AC

1. BOGEN MODEL "X" IS COMPLETELY UNIVERSAL. The one model will serve installations requiring a single master and several remote stations — installations requiring several master stations — or installations requiring several master stations and several remote stations. Remote stations are available to permit selective initiation of calls to master stations.
2. HAND-RUBBED FURNITURE-FINISHED CABINETS to complement the furnishings of the nation's best offices.
3. TYPEWRITER KEYBOARD ACTION for push button selection of stations.
4. TYPEWRITER BAR PRESS-TO-TALK SWITCH.
5. AUTOMATIC BUSY SIGNAL.
6. 3 WATTS AUDIO OUTPUT — reserve power to take noisy installations in stride.
7. PROVISION FOR PLUG-IN CONNECTION OF HANDSETS — permitting complete privacy of conversation, without need to operate the press-to-talk bar.
8. PROVISION FOR QUICK DISCONNECT OF MASTER STATIONS for ease of installation or transfer.
9. BALANCED LINES; 60 ohms.
10. UNDERWRITERS' LABORATORIES APPROVED.

#### MODEL "U"—Universal Standard Series for 115V AC-DC

The new — completely universal Model "U" Communo-Phone is the AC-DC version of the Model "X." It incorporates most of the functional and style features of the deluxe unit. Hand-rubbed cabinets — typewriter keyboard action for push button station selection — typewriter bar press-to-talk switch — provision for plug-in handset — provision for quick disconnect of the master station — 60 ohm balanced lines — Output Power is 1½ watts — no busy signal — Underwriters' Laboratories approved.

#### MODEL "D"—Moderately Priced Dual-Function Units for 115V AC-DC

The new Model "D" Communo-Phone is designed to serve installations requiring either a single master and several remote stations or several master stations only. It will not serve systems requiring a combination of several master and several remote stations, and it operates on voice coil lines. In all other respects the Model "D" is the equivalent of the Model "U." Underwriters' Laboratories approved.

	List Price
MODEL 11X—MASTER can select up to 10 stations (masters or remotes in any combination)	\$ 99.25
MODEL 21X—MASTER can select up to 20 stations (masters or remotes in any combination)	124.00
MODEL 11U—MASTER can select up to 10 stations (masters or remotes in any combination)	82.75
MODEL 21U—MASTER can select up to 20 stations (masters or remotes in any combination)	109.00
MODEL RS50—REMOTE can reply when called by master and can also initiate calls to one X or U Master	23.00
MODEL RS30—REMOTE can reply when called by master and can also initiate calls to three X or U Masters	26.00
MODEL RS110—REMOTE can reply when called by master and can also initiate calls to ten X or U Masters	42.00
MODEL UX—HANDSET plugs into any X, U or D master	31.50
MODEL JU—JUNCTION BOX is used in all X, U or D systems	7.60
MODEL 11D—MASTER can select up to 10 stations (exclusively masters or remotes)	67.60
MODEL 21D—MASTER can select up to 20 stations (exclusively masters or remotes)	90.85
MODEL RS5—REMOTE can reply when called by master and can also initiate calls to master (for use with 11D or 21D masters)	19.50
MODEL UX—HANDSET plugs into any master	31.50
MODEL JU—JUNCTION BOX	7.60



Illustrated: Model 21X, 21U, 21D Master

PRICES APPROXIMATELY 5% HIGHER IN ZONE 2 • ASK FOR LATEST BOGEN COMMUNO-PHONE CATALOG

DAVID BOGEN CO., INC., NEW YORK 12, N. Y.

# CHALLENGER SOUND EQUIPMENT



## 8 WATT AMPLIFIER

- Individual controls for microphone, phonograph, selectone.
- Plug in connection for speaker line.
- Inverse feedback for better response and regulation.
- Underwriters' Lab. Approved.

### SPECIFICATIONS

Power Output: 8 watts.  
Response: 30-12,000 c.p.s.  $\pm 2$  db.  
Gain: Mic.: 108 db. Phono: 71 db.  
Output Impedances: 4, 8 and 16 ohms.  
Tone Control: SelectTone.

Tubes: 1—6SF5, 1—6SJ7, 1—6L6GA, 1—5Y8GT.  
Dimensions (with cage): 11" Wide x 7" Deep x 7 1/4" High.  
MODEL CH8—8 watt amplifier with tubes, less cage.

List Price .....\$47.25

## 18 WATT UNIVERSAL 115V AC-6V DC AMPLIFIER

- Individual controls for microphone, phonograph, selectone.
- Inverse feedback for better response and regulation.
- Built-in constant speed phonograph.
- Underwriters' Lab. Approved.

### SPECIFICATIONS

Response: 30-12,000 c.p.s.  $\pm 2$  db.  
Gain: Mic.: 118 db. Phono: 78 db.  
Output Impedances: 4, 8, 15 ohms, 70 volts.  
Tone Control: SelectTone.  
Tubes: 2—6SF5, 1—6SL7GT, 2—6V6GT, 1—7Z4.

Dimensions: 15" Wide x 10" Deep x 10" High.  
MODEL CH618—18 watt universal amplifier and tubes, Cage AC and DC cable and built-in phono. top.  
List Price .....\$139.25



Model CH618

## MODEL CH18—18 WATT AMPLIFIER

Features individual controls for microphone, phono, SelectTone; inverse feedback for better regulation and frequency response; two speaker plug-in sockets; constant voltage output for easy speaker matching. Amplifier with tubes and Cage. Underwriters' Lab. Approved.

List Price .....\$70.50

### SPECIFICATIONS

Power Output: 18 watts.  
Response: 30-12,000 c.p.s.  $\pm 2$  db.  
Gain: Mic.: 118 db. Phono: 78 db.  
Output Impedances: 4, 8, 15 ohms, 70 volts.  
Tone Control: SelectTone.  
Tubes: 2—6SF5, 1—6SL7GT, 2—6V6GT, 1—5Y8GT.  
Dimensions: 14" Wide x 8" Deep x 8" High.



Model CH30X

MODEL CH30X—30 watt amplifier, tubes and built-in phono. top. List Price .....\$110.25

MODEL CH30XP-1—Complete portable system containing 1-CH30X amplifier with tubes; 2-12" Alnico V PM speakers, each with 25 ft. cable and plug, mounted in split portable case which also carries amplifier; 1 BOGEN-Shure 710 Crystal Microphone with Stand Adapter, 7 ft. cable and plug.  
List Price .....\$181.00

## 30 WATT AMPLIFIER

### FEATURES

- Individual controls for two microphones, phonograph, selectone.
- Terminal strip and 2 speaker plug-in sockets for connection of speaker lines.
- Moulded bakelite sockets throughout.
- Inverse feedback for better response and regulation.
- Extractor type fuse. • Recessed carrying handles.
- Underwriters' Lab. Approved.

### SPECIFICATIONS

Power Output: 30 watts.  
Response: 30-12,000 c.p.s.  $\pm 2$  db.  
Gain: Mic. No. 1: 118 db.  
Mic. No. 2: 118 db.  
Phono: 85 db.  
Output Impedances: 4, 8, 15 ohms, 70 volts.  
Tubes: 2-6SC7, 1-6SL7GT, 2-6L6G, 1-5U4G.  
Tone Control: SelectTone.  
Dimensions: CC80: 15" W. x 10" D. x 8" High.

MODEL CH30—30 watt amplifier, tubes and cage. List Price .....\$88.00

MODEL CH30P-1—Complete portable system containing 1-CH30 amplifier with tubes, cage; 2-12" Alnico V PM speakers, each with 25 ft. cable and plug, mounted in split portable case which also carries amplifier; 1 BOGEN-Shure 710 Crystal Microphone with Stand Adapter, 7 ft. cable and plug.  
List Price .....\$156.75



Model CH30

## 6 WATT MOBILE AMPLIFIER



- Universal mounting permits 4 alternate mounting positions.
- Remote control of standby to reduce current drain.
- Vibrator replaceable from front without dismantling amplifier or removing cage.
- Complete chassis, removable for service by removing 4 screws.
- Fused DC power cable built in.
- Primary power circuit physically isolated from high gain circuit for minimum hum.

### SPECIFICATIONS

Power Output: 6 watts. Tubes: 2—6SF5, 1—6L6GA, 1—6X5GT.  
Gain: 109 db. Dimensions: 3 1/4" Wide x 8" Deep x 7" High.  
Output Impedances: 4, 8, 15 ohms.

MODEL CD6—6 watt amplifier with tubes, cage and DC cable. List Price .....\$56.50

SELECTONE tone corrector is a unique feature of CHALLENGER amplifiers. Four distinctive frequency responses, judged best by critical audience preference tests, are instantly available: "Deep Bass"—ideal for old records; "Mellow"—useful for tuners; "Crisp"—best for speech; "Brilliant"—for hi-fidelity.

## 60 WATT AMPLIFIER

### FEATURES

- 2 Micro., 1 phono. input.
- PP 807 output.
- Inverse feedback.
- Two oil filled filter capacitors.
- Constant voltage output.
- Underwriters' Label Approved.

### SPECIFICATIONS

Response: 30-12,000 c.p.s.  $\pm 2$  db.  
Gain: Mic. 1: 120 db; Mic. 2: 120 db; Phono: 85 db.  
Output Impedances: 4, 8, 15 ohms, 70 volt, 140 volt.  
Tubes: 2—6SL7GT, 1—6V6GT, 2—807, 1—5Y8GT, 1—5R4GY.  
Dimensions: 17" Wide x 11 1/2" Deep x 9 1/4" High.  
MODEL CH60—60 watt amplifier, tubes. List Price .....\$141.75



Model CH60

COMPLETE SYSTEMS—CHALLENGER amplifiers may be purchased as part of complete systems consisting of amplifier, one or more speakers (in baffles for indoor use—trumpets for outdoors), speaker cables and plugs, microphone (with handle, interlocking base and cable), portable carrying case. Write for Catalog No. C1048.

## CHALLENGER INTERCOMM SYSTEMS



CHALLENGER 200 SYSTEM—Complete with 50 ft. of cable and plugs. List Price .....\$39.95

CHALLENGER 200 is a complete system—a master, a remote station and 50 ft. of cable. Operates 117V. AC-DC. Dual-Duty volume control keeps remote "alive" or permits master to silence it. Excellent for nursery, restaurant, business use. Underwriters' Lab. Approved.

CHALLENGER 600 Master may be used in one of two systems: (1) A single master with up to five remote stations; (2) An all master system of six stations. Operates 117 V AC-DC. In sturdy beautiful polystyrene cabinet. Remote can initiate calls also. Underwriters' Lab. Approved.

CHALLENGER 600 MASTER with tubes. List Price .....\$35.50  
CHALLENGER 600 REMOTE STATION. List Price .....\$11.75



For further information on CHALLENGER Amplifiers, Systems and Intercomms, ask for latest CHALLENGER catalog. PRICES APPROXIMATELY 5% HIGHER IN ZONE 2.

CHALLENGER AMPLIFIER CO., NEW YORK 12, N. Y.

Newcomb

CUSTOM

K

SERIES AMPLIFIERS

Designed and Built To The Very Highest Standards of Quality In The Entire Industry



KX-25



KX-50



KX-6A

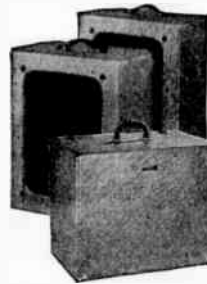


K50B



KX-2512X: Portable Sound System with KX-25 amplifier and two heavy duty, extremely efficient, speakers—each with 50 ft. of cable. System is carried in two cases, one for amplifier and one for two speakers as illustrated. Speakers face inside for maximum protection when carried. Mikes or mountings not included in price as requirements vary. SHIPPING WEIGHT: 98 lbs. LIST: (with tubes and plugs) \$475.20.

KA Amplifier case only. Fits all "K" Series model amplifiers. SIZE: 19" x 11 3/4" x 16 1/2". SHIPPING WEIGHT: 15 lbs. LIST: \$25.00.



KX-25R12X: Portable System identical to KX-2512X but is carried in three cases. Each speaker is mounted in an individual portable reflex baffle for utmost tone quality. Mikes or mountings not included. SHIPPING WEIGHT: 125 lbs. LIST: (with tubes and plugs) \$534.70.

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

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

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

**KX-25 POWER OUTPUT:** 25 watts design center rating, 30 watts max. at less than 3% distortion any output tap. **PEAK POWER:** 40 watts design center, 48 watts max. **INPUTS (6):** 5 mike (2 meg.), gain 123 db; 1 phono either Magnetic input gain 99 db based on 27,000 ohm input, bass equalization + 10 db or Crystal input 1/2 meg. gain 90 db **REMOTE CONTROL:** Use RC-6 remote control unit. **BASS TONE CONTROL:** Range —16 to +25 db. **TREBLE TONE CONTROL:** Range —30 to +20 db. **HUM:** —80 db controls off, —75 db crystal phono, —65 db mike

and magnetic pickup inputs (Referred to rated output). **CONTROLS (15):** 5 mike, 1 phono, 1 bass, 1 treble, 4 bandwidth, 1 master, 1 volume indicator (all under keylocked control cover) A.C. power switch. **TUBES (15):** 6—6SC7, 2—6J5, 1—6J7, 1—6SQ7, 1—6SN7, 2—6L6G, 1—6AF6G, 1—5U4G. **POWER CONSUMPTION:** 135 watts, 117 volts 60 cycles A.C. Max. Input 129 volts. **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4". **SHIPPING WEIGHT:** 40 lbs. **LIST: (with tubes) \$325.00. Plug Kit: \$5.68.**

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

**TUBES (18):** 6—6SC7, 2—6J5, 1—6SQ7, 1—6J7, 1—6SN7, 4—6L6G, 1—6AF6G, 2—5U4G. **POWER CONSUMPTION:** 235 watts, 117 volts 60 cycles A.C. Max. Input 129 volts. **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4". **SHIPPING WEIGHT:** 49 lbs. **LIST: (with tubes) \$395.00. Plug Kit: \$5.76.**

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

—16 to +25 db. **TREBLE TONE CONTROL:** Range —30 to +20 db. **HUM:** —60 db controls off, —80 db crystal —75 db mike and magnetic. **CONTROLS (12):** 5 mike, 1 phono, 1 bass, 1 treble, 1 master, 1 four position bandwidth (all under key locked cover), 1 A.C. power switch, 1 VU meter range switch (in rear). **TUBES (12):** 6—6SC7, 4—6J5, 1—6J7, 1—6X5. **POWER CONSUMPTION** 35 WATTS, 117 volts 60 cycles A.C. Max. Input 129 volts. **DIMENSIONS:** 9 3/8" x 17 3/4" x 14 3/4". **SHIPPING WEIGHT:** 32 lbs. **LIST: (with tubes) \$295.00. Plug Kit: \$4.34.**

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

and overload indicators as in KX-50. Ample multistage feedback to minimize effects of speaker load variations. Etched metal panel. **TUBES (10):** 1—6SJ7, 1—6SN7, 1—6SQ7, 4—6L6G, 1—6AF6G, 2—5U4G. **POWER CONSTRUCTION:** 230 watts 117 volts 60 cycles. 129 volts max. **DIMENSIONS:** 9 3/8" x 17 3/4" x 12 1/4". **SHIPPING WEIGHT:** 45 lbs. **LIST: (with tubes) \$179.50. Plug Kit: \$2.05.**

### NEWCOMB CUSTOM PORTABLE SYSTEMS

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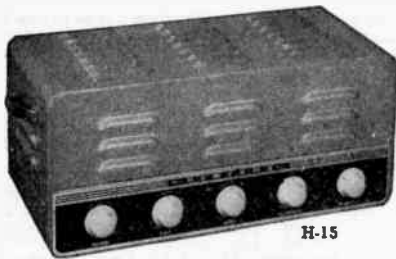
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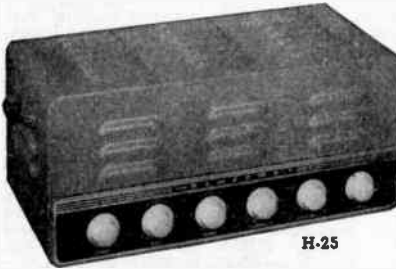
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SERIES AMPLIFIERS

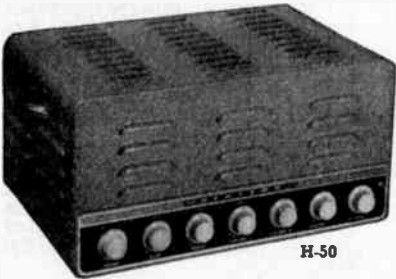
Compare These Deluxe Amplifiers with Any Other Brand at Any Price



H-15



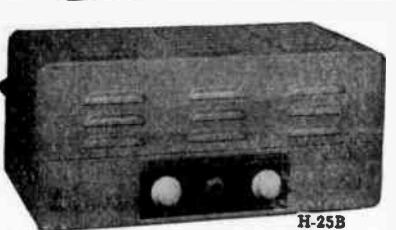
H-25



H-50



H-4



H-25B



H-50B

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

- ★ 20-20,000 cycles  $\pm$  2 db
- ★ Full Power any output tap
- ★ Less than 5% distortion
- ★ 90% of rated power at less than 2%

- ★ Remote Control provision—all mikes
- ★ U/L approval
- ★ Continuous duty—longer life parts
- ★ Wired for plug-in input transformers

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

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

(5): 1 mike-phonograph, 1 mike, 1 bass, 1 treble, 1 A.C. power switch. **REMOTE CONTROL:** Use RC-2 remote control unit. **TUBES (7):** 2-6SF5, 1-6SJ7, 1-6SN7, 2-6L6G, 1-5Z4. **POWER CONSUMPTION:** 85 watts, 117 volts 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 8 1/4" x 19" x 10 1/8". **SHIPPING WEIGHT:** 23 lbs. **LIST:** (with tubes) \$129.50. **Plug Kit:** \$3.36.

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

(6): 2 mike, 1 mike-phonograph, 1 bass, 1 treble, 1 A.C. power switch. **REMOTE CONTROL:** Use RC-3 remote control unit. **TUBES (8):** 3-6SF5, 1-6SJ7, 1-6SN7, 2-6L6G, 1-5U6G. **POWER CONSUMPTION:** 125 watts, 117 volts 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 8 1/2" x 19" x 10 1/8". **SHIPPING WEIGHT:** 27 lbs. **LIST:** (with tubes) \$159.50. **Plug Kit:** \$4.12.

**H-50 POWER OUTPUT:** 50 watts design center rating, 60 watts max. at less than 5% distortion, any output tap. **PEAK POWER:** 80 watts design center, 90 watts max. **INPUTS (5):** 4 mike (2 meg.), gain 124 db, 1 phono (1/2 meg.), gain 81 db. **BOOSTER COUPLING JACK** for connecting H-25B or H-50B Boosters for 75 to 100 watts or more. **BASS TONE CONTROL:** Range -21 to +16 db. **TREBLE TONE CONTROL:** Range -27 to +10 db. **HUM:** -72 db phono input, -62

db mike inputs (referred to rated output). **CONTROLS (7):** 3 mike, 1 mike-phonograph, 1 bass, 1 treble, 1 A.C. power switch. **REMOTE CONTROL:** Use RC-4 remote control. **TUBES (12):** 4-6SF5, 1-6SJ7, 1-6SN7, 4-6L6G, 2-5U4G. **POWER CONSUMPTION:** 225 watts, 117 volts 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 9 1/4" x 19" x 12 1/2". **SHIPPING WEIGHT:** 42 lbs. **LIST:** (with tubes) \$215.00. **Plug Kit:** \$5.00.

**H-4 Mixer Pre-Amplifier** with built-in power supply. Extremely low hum. Suitable for feeding telephone lines or booster amplifiers such as the H-25B or H-50B. Output +22 db at less than 5% distortion. +21 db at less than 2%. **INPUTS** for three mikes (2 meg.), gain 90 db, 1 phono (1/2 meg.), gain 51 db. **HUM:** Better than, -80 db from phono input or -75 db, mike inputs. Requires RC-3 remote control unit. Includes master control and genuine VU meter with

meter range extension switch. **BASS TONE CONTROL:** Range -16 to +14 db. **TREBLE TONE CONTROL:** Range -27 to +13 db. **TUBES (7):** 3-6SF5, 1-6SJ7, 1-6SN7, 1-6J5, 1-6X5. **POWER CONSUMPTION:** 30 watts, 117 volts 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 8 1/8" x 19" x 10 1/8". **SHIPPING WEIGHT:** 21 lbs. **LIST:** (with tubes) \$129.50. **With VU Meter Cover:** \$165.00. **Plug Kit:** \$2.82.

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

with H-4 Pre-amplifier. Built for long life. **TUBES (5):** 1-6SJ7, 1-6J5, 2-6L6G, 1-5U4G. **POWER CONSUMPTION:** 120 watts, 117 volts, 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 8 1/8" x 19" x 10 1/8". **SHIPPING WEIGHT:** 25 lbs. **LIST:** (with tubes) \$109.50. **Plug Kit:** \$1.39.

**H50B Booster Amplifier** — Performance, Power and Output Impedances are same as H-50 with but one input of 1/2 meg. impedance, gain 71 db. Provision for plug-in bridging or low impedance transformer. Etched metal panel with pilot light, A.C. switch and volume control. Built for long

life. Ideal for use with H-4 Pre-Amp. **TUBES (8):** 1-6SJ7, 1-6J5, 4-6L6G, 2-5U4G. **POWER CONSUMPTION:** 220 watts, 117 volts, 60 cycles A.C. Max. input 129 volts. **DIMENSIONS:** 9 1/4" x 19" x 12 1/2". **SHIPPING WEIGHT:** 38 lbs. **LIST:** (with tubes) \$139.50. **Plug Kit:** \$1.39.

### Newcomb Deluxe Portable Systems

**H-1512R** Portable sound system with H-15 amp. and two 12" speakers, each with 25 ft. cables, in split case 11 1/8" x 20 1/2" x 21" of sturdy plywood covered with airplane type fabric. Kickproof grills protect speakers. Mikes or mountings not included as requirements vary. **SHIPPING WEIGHT:** 54 lbs. **LIST:** (with tubes and plugs) \$202.35.

**H-2512Q** Portable sound system with H-25 amp. and two heavy duty 12" speakers, each with 25 ft. cable, in split case 11 1/8" x 20 1/2" x 21" of sturdy plywood covered with airplane type fabric. Kickproof grill protects speakers. Mikes or mountings not included. **SHIPPING WEIGHT:** 61 lbs. **LIST:** (with tubes and plugs) \$253.10.



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



E-1010S



E-17  
E-25



E-50



E-2512R  
E-1712R



E-10M



E-25MP

**E-10 AMPLIFIER** . . . Delivers full 10 watts from push-pull 6V6 tubes. Inputs for mike and phono. **SPECIFICATIONS** . . . POWER OUTPUT: 10 watts at less than 5% distortion. FREQUENCY RESPONSE: 40 to 15,000 cycles  $\pm 2$  db. Inputs (2): 1 mike (2 meg.), gain 116 db; 1 phono ( $\frac{1}{2}$  meg.), gain 77 db. TONE CONTROL: Range 0 to  $-24$  db. MULTI-STAGE INVERSE FEEDBACK CIRCUIT. OUTPUT IMPEDANCES: 4, 8 and 16

**E-17 AMPLIFIER** . . . A conservative 17-watt amplifier with separate bass and treble tone controls, phonograph bass boost, multistage inverse feedback circuit, and provision for conversion to low impedance mike input. Input controls for mike and phono. **SPECIFICATIONS** . . . POWER UNIT 17 watts at less than 5% distortion. FREQUENCY RESPONSE:  $\pm 2$  db, 40 to 15,000 cycles. INPUTS: 1 mike (2 meg.) gain 115 db; 1 phono ( $\frac{1}{2}$  meg.), gain 77 db. OUTPUT IMPEDANCES:

**E-25 AMPLIFIER** . . . A dependable full 25-watt amplifier with inputs for two mikes and one phono, separate bass and treble tone controls, phono bass boost, multistage inverse feedback circuit, and provision for conversion to low impedance mike inputs. **SPECIFICATIONS** . . . POWER OUTPUT: 25 watts at less than 5% distortion. FREQUENCY RESPONSE:  $\pm 2$  db, 40 to 15,000 cycles. INPUTS (3): 2 mike (2 meg.), gain 117 db; and 1 phono ( $\frac{1}{2}$  meg.), gain 77 db.

**E-50 AMPLIFIER** . . . A distortion-free conservatively rated 50-watt amplifier using push-pull parallel 6L6 tubes and multistage inverse feedback circuit. Has inputs for two mikes and one phono, separate bass and treble tone controls, phono bass boost, and provision for conversion to low impedance mike inputs. **SPECIFICATIONS** . . . same as E-25 except as following: POWER OUTPUT:

**E-10M MOBILE AMPLIFIER** . . . The Model E-10-M is a particularly rugged, dependable, low cost 10 watt mobile amplifier, designed for use on 6 V.D.C. or 117 volts, 60 cycles A.C. power. Features push-pull beam power output tubes with inverse feedback for low distortion; Standby battery saver switch; New freedom from vibrator hash; Special mounting to simplify removal of chassis for servicing; Inputs for mike and phono; Sturdy Jones connectors for battery and A.C. cables. **SPECIFICATIONS** . . .

**E-25MP PHONO TOP MOBILE AMPLIFIER** . . . A full 25 watts from either 6 V. Storage Battery or 117 V. A.C. at new low price. Consumes least possible current per watt output. "Standby" switch reduces battery consumption, keeps tubes warm for instant use. Separate A.C. power and turntable switches. Heavy duty Jones plugs and receptacles provide dependable connections to battery or A.C. power source. **SPECIFICATIONS** . . . POWER OUTPUT: A full 25 watts at less than 5% distortion from either 117 volts A.C. or 6-volt storage battery. RESPONSE:  $\pm 2$  db, 50-15,000 cycles. INPUTS for two mikes (2 meg.) gain 119 db; and one phono ( $\frac{1}{2}$  meg.), gain 78 db. HIGH FREQUENCY ATTENUATOR range, 28 db. CIRCUIT FEATURES: Multi-

**E-25M** . . . Same as E-25MP, Mobile Amplifier, with cover, tubes, less phono unit. Power consumption: 91 watts A.C. or 17 amps. from 6 V.D.C. Dimensions:  $8\frac{3}{4}$ " x  $14\frac{1}{8}$ " x 8" high. SHIPPING WT.: 27 lbs. LIST: (with tubes and plain cover) \$154.50. Plug Kit: \$2.56.

**NEWCOMB UTILITY PORTABLE SYSTEMS**

**E-1010S** . . . 10-watt basic port. system with 10" speaker, 25 ft. cable and plug; and 1 E-10 Amplifier. Mike and stand not included in price as requirements vary. SIZE:  $12\frac{1}{4}$ " x  $15\frac{3}{4}$ " x  $8\frac{3}{4}$ ". SHIPPING WT.: 25 lbs. LIST: \$94.85.

**E-1712R** . . . 17-watt dual 12" speaker portable system with 2 efficient speakers, each with 25 ft. cable and plug, and 1 E-17 amplifier. Mikes and stands not incl. SIZE:  $12\frac{1}{4}$ " x  $17\frac{1}{4}$ " x 13". SHIPPING WT.: 48 lbs. LIST: \$150.80.

**E-2512R** . . . 25-watt basic port. system with two efficient 12" speakers, each with 25 ft. cable and plug and 1 E-25 amplifier. Mikes and stand not included. SIZE:  $21\frac{1}{4}$ " x  $17\frac{1}{4}$ " x 13". SHIPPING WT.: 49 lbs. LIST: \$171.55.

ohms to octal socket. TUBES (5): 1-6SC7, 1-6SF5, 2-6V6GT and 1-6X5GT. FINISH: Silver-gray hammertone baked enamel. PANEL: Genuine etched metal. DIMENSIONS (incl. cover):  $5\frac{1}{4}$ " x  $10\frac{3}{8}$ " x  $6\frac{3}{4}$ " high. POWER CONSUMPTION: 60 watts at 117 volts; 60 cycles A.C. SHIPPING WEIGHT: Amplifier only, less cover, 9 lbs. Including cover,  $10\frac{1}{2}$  lbs. LIST: (with tubes) \$49.50. Cover: \$4.50. Plug Kit: \$1.35.

4, 8, 16 and 500 ohms. TUBES (5): 1-6SC7, 1-6SJ7, 2-6L6G, 1-5Z4. PANEL: Etched metal, illuminated. FINISH: Silver-gray hammertone baked enamel. DIMENSIONS: (incl. cover):  $8\frac{3}{4}$ " x  $14\frac{1}{8}$ " x 8" high. POWER CONSUMPTION: 75 watts at 117 volts, 60 cycles A.C. SHIPPING WT.: 18 lbs. LIST: (with tubes less cover) \$74.00. Cover \$5.50. Phono Cover \$28.50\*. Changer Cover \$79.50\*. Plug Kit: \$1.80. (\*Plus Excise Tax.)

OUTPUT IMPEDANCES: 4, 8, 16 and 500 ohms. TUBES (6): 1-6SJ7, 1-6SC7, 1-6J5, 2-6L6G and 1-5Z4. FINISH: Two-tone hammertone baked enamel. PANEL: Etched metal, illuminated. POWER CONSUMPTION: 90 watts at 117 volts; 60 cycles A.C. SHIPPING WT.: 19 lbs. LIST (with tubes less cover) \$94.00. Cover \$5.50. Phono Cover \$28.50\*. Changer Cover \$79.50\*. Plug Kit: \$2.56. (\*Plus Excise Tax.)

50 watts at less than 5% distortion. Mike gain 120 db.; phono gain 79 db. OUTPUT IMPEDANCES: 4, 8, 16 and 250 ohms. TUBES (6): 1-6SJ7, 1-6SC7, 1-6J5, 4-6L6G and 2-5Z4. DIMENSIONS (including cover):  $11\frac{1}{4}$ " x  $14\frac{3}{4}$ ". POWER CONSUMPTION: 170 watts at 117 volts; 60 cycles A.C. SHIPPING WT.: 31 lbs. LIST: (with tubes) \$154.50. Plug Kit: \$2.56.

POWER OUTPUT: 10 watts at less than 5% distortion. FREQUENCY RESPONSE: 50 to 15,000 cycles  $\pm 2$  db. Mike Input (2 megs.), gain 115 db; Phono Input ( $\frac{1}{2}$  meg.), gain 75 db. OUTPUT IMPEDANCES: 4, 8, and 16 ohms. Jewelled pilot lamp. Etched metal panel. Silver-tone-gray, baked enamel hammertone finish. TUBES (5): 1-6SC7, 1-6SF5, 2-6V6GT, 1-6X5GT. POWER CONSUMPTION: 60 watts at 117 volts A.C. 8 amps at 6 V.D.C. SHIPPING WEIGHT:  $13\frac{1}{2}$  lbs. LIST: (with tubes) \$69.50. Plug Kit: \$1.10.

stage inverse feedback, resistance capacity coupling, phase correction for phono motor, 2000 volt Hermetically sealed oil buffer condenser. OUTPUT IMPEDANCES: 4, 8, 16 and 500 ohms to two octal speaker sockets and impedance selector. PHONOGRAPH MOTOR: Constant speed 78 R.P.M. PICKUP: Crystal. TUBES (7): 1-6SC7, 1-6SJ7, 1-6J5, 2-6L6, 2-6X5GT. POWER CONSUMPTION: 107 watts at 117 volts, 60 cycles A.C. or 20.5 amps. including phono motor from 6-volt storage battery. FINISH: Silver-gray hammertone baked enamel. PANEL: Etched metal, illuminated. DIMENSIONS (including cover):  $8\frac{3}{4}$ " x  $14\frac{1}{8}$ " x 10" high overall. SHIPPING WT.: 30 lbs. LIST: (with tubes and phono cover) \$169.50. Plug Kit: \$2.56 (Excise Tax on cover).

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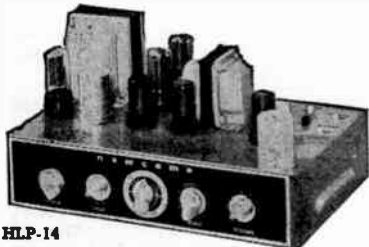


KXLP-30

**KXLP-30** A phonograph amplifier unsurpassed by any other in the field, regardless of price. Ample power permits use of KX Series dual tone control circuit. Provides tonal range and balance unattainable in less costly circuits, and controlled emphasis of desirable but power-consuming fundamental bass tones, avoiding emphasis of harmonic bass—the "Boomy" or one-tone bass so unacceptable to true music lovers. U/L approved. Features "Magic Red Knob" Record Condition Compensator and built in magnetic pick-up pre-amplifier.

**SPECIFICATIONS:** POWER OUTPUT: 30 watts at less than 5% distortion with flat power output versus frequency curve. FREQUENCY RESPONSE: 20 to 20,000 cycles  $\pm 1$  db. Response of magnetic and variable reluctance inputs corrected for requirements of these pickups. INPUTS: For radio and choice of crystal or variable reluctance pickup inputs. GAIN: Crystal input, 50 db. at  $\frac{1}{2}$  meg. input impedance. Magnetic or

variable reluctance input, 112 db. at  $\frac{1}{2}$  meg., input impedance of 95 db. at 10,000 ohms. Signal required at radio input for full output is 6.6 volts. BASS TONE CONTROL: 0 to +22 db. with special curve shape for maximum emphasis of fundamental bass tones and minimum emphasis of harmonic bass. TREBLE TONE CONTROL: -25 db. to +25 db. RECORD CONDITION COMPENSATOR: Five positions: #1, radio #2, records, condition "A" (Perfect); #3, records, condition "B"; #4, records, condition "C"; #5, records, condition "D" (badly worn, very noisy). HUM BALANCER CONTROL: To correct variation in tubes. OUTPUT IMPEDANCES: 3, 4, 6, 8, 16 and 500 ohms to octal socket. POWER CONSUMPTION: 150 watts, 129 volts, 60 cycles A.C. for use on 105-129 volts. TUBES (7): 1-6SC7, 3-6J5, 2-6L6G, 1-5U4G. DIMENSIONS: Chassis:  $13\frac{1}{2}$ " x  $9\frac{1}{2}$ " x 3". Height overall,  $7\frac{7}{8}$ ". WEIGHT: 22 lbs. LIST: (with tubes) \$225.00. Plug Kit: \$.68.



HLP-14

**HLP-14** Brings to music lovers new listening pleasure in a unit less expensive than the KXLP-30. It, too, features the "Magic Red Knob" record condition compensator. Built-in pre-amplification and equalization, required for new low level pickups, make the HLP-14 ideal for the lower cost home installation. Exceptional tonal balance at whisper volumes is an outstanding feature. U/L approved.

**SPECIFICATIONS:** POWER OUTPUT: 14 watts at less than 5% distortion with wide flat power output versus frequency curve. PEAK POWER OUTPUT: 19 watts. FREQUENCY RESPONSE: 30 to 15,000 cycles  $\pm 1$  db for crystal pickup and radio inputs. Magnetic and variable reluctance inputs have response adjusted to requirements of

these pickups. INPUTS: Same as KXLP-30. GAIN: Crystal input 90 db. at  $\frac{1}{2}$  meg. input impedance. Magnetic or variable reluctance input 109 db. at  $\frac{1}{2}$  meg. or 92 db. at 10,000 ohms impedance. Signal from radio required for full output is 4.2 volts. TONE COMPENSATION: Variable. BASS TONE CONTROL: 0 to +16 db. TREBLE TONE CONTROL: -29 db. to +12.5 db. RECORD CONDITION COMPENSATOR: (Same as KXLP-30). OUTPUT IMPEDANCES: 3, 4, 6, 8, 16 and 500. POWER CONSUMPTION: 75 watts, 129 volts, 60 cycles A.C. for use on 105-129 volts. TUBES (6): 1-6SC7, 1-6S17, 1-6J5, 2-6V6GT and 1-5Y3LT. DIMENSIONS: Chassis,  $13\frac{1}{2}$ " x  $8\frac{1}{2}$ " x 3". Height overall:  $6\frac{3}{4}$ ". WEIGHT: 13 lbs. LIST (with tubes) \$139.50. Plug Kit: \$.68.



P-10A

**P-10A** This remarkable new amplifier has a frequency response with  $\pm 1$  db. from 30 to 15,000 cycles and delivers a full clean 10 watts. Includes distortion free, individual bass and treble tone controls for bass boost and treble boost or attenuation. Plus three individual inputs to permit connection of Radio, Phono and T.V. without need of switching. Basic amplifier designed for high impedance inputs. Plug-in pre-amp, illustrated, permits use of all magnetic cartridges. Circuit includes multi-stage inverse feedback. The low hum level achieved is of utmost importance when used with modern efficient speakers in bass reflex cabinets operated in quiet rooms. The low price makes it the truly outstanding buy in the field. U/L approved.

**SPECIFICATIONS:** INPUTS: (3  $\frac{1}{2}$  meg.; Gain, 75 db. Bass tone control range 0 to +16 db. Treble tone control range: -25 db. to +15 db. Output Impedances: 4, 8 and 16 ohms. Etched metal panel, grey baked enamel hammertone finish. Tubes (5): 1-6SC7, 1-6SF5, 2-6V6GT and 1-6X5GT. Dimensions:  $11\frac{1}{2}$ " x  $6\frac{1}{4}$ " x  $5\frac{3}{4}$ " high. Power consumption: 60 watts at 117 volts, 60 cycles A.C. WEIGHT:  $7\frac{1}{4}$  lbs. LIST: (with tubes) \$59.50. Plug Kit: \$.72.

**MPA** Plug-in Pre-Amplifier provides additional gain and equalization needed for magnetic pickups with the P-10A. Includes effective scratch suppressor that can be cut in or out at will by means of a switch. LIST: \$10.00.



G-12

## PROFESSIONAL MUSICAL INSTRUMENT AMPLIFIER

**G-12** Gives full, clear true tones at any desired volume. Lightness and beautiful appearance. Plus exceptional ruggedness and dependability characterize the Model G-12. There are three inputs with ample gain for Musical Instruments, plus an additional higher gain input for a microphone. Entire unit weighs only 20 $\frac{1}{2}$  lbs. for easy carrying. The amplifier frequency response is 30 to 15,000 cycles. Special circuit designed for musical instruments, provides a full 12 watts power at less than 5% distortion (over 90% of full output at less than 2% distortion). Exceptionally efficient big full 12" Alnico V permanent magnet speaker in an acoustically designed enclosure. A kickproof grill gives real

protection for speaker. Case construction gives needed rigidity for best tone and freedom from rattles and strength necessary to stand the abuse of constant traveling. Amplifier mounting screws enter into metal inserts. The case is covered in durable, washable, airplane type fabric. Truly a professional instrument. Built for years of trouble free service under the most rugged conditions. U/L Approved.

**SPECIFICATIONS:** Power Consumption: 65 watts at 117 volts, 60 cycles A.C. Tubes (5): 1-6SC7, 1-6SF5, 2-6V6GT, and 1-5Y3GT. Size:  $9\frac{1}{4}$ " deep x  $14\frac{1}{2}$ " x  $18\frac{3}{8}$ " high. WEIGHT: 23 lbs. LIST: (with tubes) \$99.50.

## RESTAURANT AMPLIFIER

**PM-10** PM-10 differs from usual phono or P.A. Amplifiers in that a switch on the panel cuts music and selects area to be paged. When paging, tonal adjustments set for music are automatically cut and flat response is substituted for proper voice quality. Paging Switch returns to music and music response when released. Operator has choice of paging "All" or a selected area. Bass boost tone control and separate high frequency tone control for boost or attenuation give desired response for music. Ideal for use with Long Playing Microgroove Changers for good music at lowest cost with added feature of paging. U/L Approved.

**SPECIFICATIONS:** POWER OUTPUT: 10 watts at less than 5% distortion. Frequency Response:  $\pm 1$  db., 40 to 15,000 cycles. Mike Input (2 meg.) gain 105 db. Phono Input ( $\frac{1}{2}$  meg.) gain 77 db. Bass tone control range: 0 to +14 db. Treble Tone Control Range: +15 db. to -22 db. Output Impedances: .7, 1.4, 4, 8, and 16 ohms. Etched metal illuminated panel. Two-toned, grey, baked enamel hammertone finish. Tubes (5): 1-6SC7, 1-6SN7, 2-6V6GT, 1-6X5GT. Dimensions:  $11\frac{1}{2}$ " x  $6\frac{1}{4}$ " x  $6\frac{3}{8}$ " high. WEIGHT: 10 $\frac{1}{4}$  lbs. LIST: (with tubes and cover) \$79.50. Plug Kit: \$1.63.



Newcomb

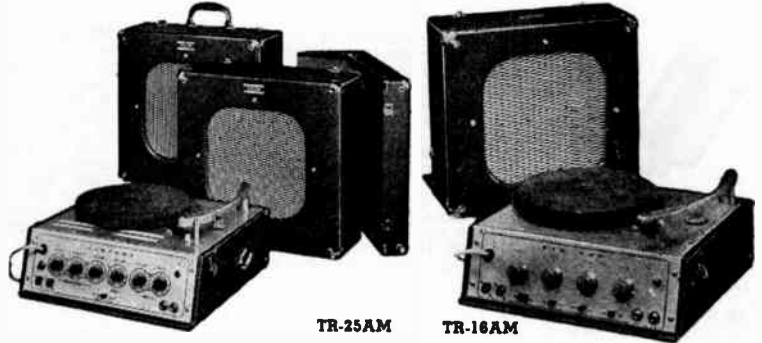
AUDIO PRODUCTS COMPANY

6824 LEXINGTON AVENUE • LOS ANGELES 38, CALIFORNIA

Newcomb

# COMBINATION TRANSCRIPTION PLAYERS—P. A. SYSTEMS

**TR-25AM** A 25 watt, 3-speed transcription player and P.A. system that plays all records up to 17 1/4". Features 2 mike inputs and separate tone controls for phono and mike with second mike unaffected by either set of tone controls. Speed control knob provides variation from any of the three basic speeds, 33 1/2, 45 or 78 rpm. Scratch suppressor controls surface noise. Pickup is twist type, dual needle G.E. variable reluctance. "Floating Sound" prevents needle skipping due to jars. Two 12" speakers in split case, protected by kickproof metal grills. Each has 25' cord. Amp-phono case is 16 1/4" x 16 1/4" x 7 7/8", weighs 36 lbs. Speaker case 16 1/4" x 16 1/4" x 12", weighs 19 lbs. Power Output: 25 watts at less than 5% distortion. Frequency response ±2 db 40-15,000 cycles. Inputs for 2 high impedance mikes, gain 120 db. Tubes (10) 2-6SC7, 1-6SJ7, 1-6SN7, 4-6V6GT, 2-5Y3. Output impedances 4 c. 8 ohms to two speaker sockets. Power consumption 130 watts 117 volts 60 cycles A.C. including phono motor. LIST: \$299.50.



TR-25AM

TR-16AM

**TR-16AM** Deluxe 10 watt, 3-speed player and P.A. system plays all records up to 17 1/4". Separate mike and phono volume controls allow mixing. Individual bass and treble tone controls prevent phono bass boost from adding unwanted bass to mike. 3-speed motor is also variable. Has extra speaker socket, an A.C. receptacle, and a radio jack for connecting to phono changer or B-100 radio. Scratch suppressor controls surface noise. Pickup is G.E. dual needle, vari-

able reluctance, magnetic. "Floating Sound" avoids needle skipping. 12" Alnico #5PM dynamic speaker in removable lid with 25' cord and kickproof grill. Size: 14 3/4" x 15 3/4" x 11 7/8". Weight 33 lbs. Power consumption 70 watts 117 volts 60 cycles A.C. including phono motor. Amp. response ±2 db 50-10,000 cycles. Tubes (6) 2-6SC7, 1-6SJ7, 2-6V6GT, 1-6X5GT. LIST: \$199.50.



CR-11

**TR-16A** A 10 watt, 3-speed player and P.A. system with dual needle, crystal pickup. Has all features of TR-16AM except scratch sup-

pressor. Needles are semi-permanent, easily replaceable. Tubes (5) 1-6SC7, 1-6SJ7, 2-6V6GT, 1-6X5GT. Weight 33 lbs. LIST: \$179.50.

**TR-16M** A 10 watt, 2-speed player and P.A. system with G.E. variable reluctance, magnetic pickup and the Newcomb scratch suppressor.

Plays 33 1/2 and 78 rpm records up to 17 1/4". Otherwise identical to TR-16AM. LIST: \$179.50.

**TR-16** A 10 watt, 2-speed player and P.A. system with crystal pickup (no scratch suppressor)

otherwise identical to TR-16A. LIST: \$159.50.

**T-112R EXTRA SPEAKER** for TR-16 series. A 12" Alnico #5PM dynamic, with 25' cord, kickproof metal grill. Plywood case covered with

fabricoid. Size 16 1/4" x 16 1/4" x 7 7/8". Weight 12 lbs. LIST: \$45.00.

**CR-11 NEWCOMB-SHURE** hand or desk mike. For all TR models and R-16. New controlled reluctance principal combines good voice with

ruggedness. Has on-off switch. Comes with bracket for mounting in system case, 7' cable and plug. LIST: \$19.50.



T-112R



R-12

## NEWCOMB PORTABLE PHONOGRAPHS AND RADIOS

**R-12** Here is "Console" quality in a portable case only 13 3/4" x 14 1/8" x 7 3/4", weighing only 20 lbs. Complete A.C. construction. Has a 5 watt amp. with inverse feedback. A 3-speed turntable with crystal pickup and a 6" x 9" Alnico #5 dynamic speaker. Plays 33 1/2, 45 or 78 rpm records any size up to 12". Has tone

control, volume control and pilot light. "Floating Sound" prevents needle skipping. Case is plywood covered with fabricoid. Speaker grill is kickproof metal. Designed especially for classroom use, it is ideal wherever portable quality is desired. LIST: \$69.50.

**R-16** A 3-speed transcription player and P.A. system for schools. Weighs only 22 lbs. in case 14" x 15" x 8 1/2". Has a 5 watt straight A.C. amp. with inverse feedback and a 10" Alnico #5 dynamic speaker. A mike input jack and mixing volume control make it a practical P.A. system. Speaker section has 25' cord. Plays all

records 33 1/2, 45 or 78 rpm up to 17 1/4". "Floating Sound" prevents needle skipping. Panel includes pilot light, tone control, mike volume control, and phono volume control. Speaker protected by kickproof metal, case is plywood covered with fabricoid. LIST: \$99.50.

**RC-12** Combines a dependable 3-speed record changer with all the quality and performance features of the R-12 model. Plays all records up

to 12". Smartly styled case is plywood covered with fabricoid, size 14 3/8" x 9 5/8" x 18 1/2". Weighs only 31 1/2 lbs. LIST: \$99.50.

**B-100** A portable AM radio, extremely sensitive, gives exceptional performance in all areas. Has built-in loop. 3-gang design eliminates heterodynes squeals and assures adequate selectivity. Has jack for connection to any TR-16 series system for added volume. May also be used for headphones. All A.C. construction.

Speaker is 6" Alnico #5PM dynamic. Amp. design utilizes inverse feedback circuit and beam powered output. Plywood cabinet covered in two-toned fabricoid. Metal grill protects speaker. Size 7 3/8" x 14 1/4" x 8". Weighs 13 1/4 lbs. Tubes (6) 2-6SK7, 1-6SA7, 1-6SQ7, 1-6V6GT, 1-6X5GT. LIST: \$59.50.



R-16



RC-12



B-100

(All Models Subject to Excise Tax)

ALL MODELS U/L APPROVED

Newcomb

AUDIO PRODUCTS COMPANY

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Newcomb

TRANSFORMERS

INDUSTRIAL SOUND SYSTEM



TR-91: A distinct contribution to high quality P.A. systems. Features sextuple alloy and copper shielding for quiet operation right in amp. proper; alloy core and specially designed windings for extended frequency response from 20 to 20,000 cycles; plug base for easy installation without tools in any H or K series Newcomb amp. For use between 30-50 or 200-250 ohm mikes and grid. Shipping weight, 1 1/4 lbs. LIST: \$23.50.

TR-92: Input impedance 5,000 ohms to grid for bridging a 500-600 ohm line. Alloy shielded for minimum hum. When plugged into the socket provided on K50B, H50B, H25B, it converts these amps for use as bridging amps. Shipping weight, 1 1/4 lbs. LIST: \$19.50.

TR-100: Identical to TR-91 but designed for use between 125-150 or 500-600 ohm microphone and grid. LIST: \$23.50.



LS-4 LS-5

LS-2: (not shown) High Power Impedance matching auto-transformer having 28 impedance from 580 ohms to 1.21 ohms. Capacity 100 watts. Shipping weight, 5/4 lbs. LIST: \$19.50.

LS-4: Multi-winding general purpose transformer. Range of impedance from 3,000 to 18,000 ohms in steps of 1,500 ohms. Capacity 8 watts. LIST: \$9.50.

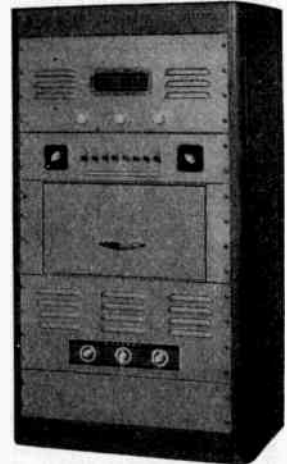
LS-5: Transformer: Similar to LS-4 with range of impedances from 500 to 3,000 ohms in steps of 250 ohms. Capacity 20 watts. LIST: \$10.50.



TC

TC: Weatherproof housing for use with all three transformers. Box size: 3 1/4" x 4" x 5 3/4". LIST: \$5.00.

MODEL 4151: Designed to furnish phonograph, A.M. Radio, or Wired Music, plus paging facilities to 6 selected areas. A 50 watt amplifier supplies ample power for the majority of applications. Operating controls include a monitor key, monitor volume control, an "all" key, and a program selector. Provides inputs for two microphones. Construction is by individual panels permitting future modifications to fit changing needs. Phono is enclosed in a ball bearing slide drawer. Radio is a dependable, full A.C., A.M. Radio. For detailed amplifier specifications refer to Model E-50. Special sockets permit use of plug-in type input transformers for low impedance mike input and balanced line wired music input when desired. Includes a monitor speaker wired to permit checking of program before connecting to various areas. Amplifier plate supply is relay operated. Model 4151-C same as above but wired for intercom.



Model 4151-C same as above but wired for intercom. RCT-6 remote control turret and adapter panel for 4151 system permits selection of any one or all of six areas from a remote point. Remote turret settings take precedence over 4151 panel keys. Contains 2 pilot lamps, one for main power and the other indicating microphone is "on." LIST: Model 4151 (with Tubes and Plugs) \$695.00. Model 4151C \$745.00. (Subject to excise tax.)



REMOTE CONTROL UNITS

Permit mixing and fading from a remote point all "H" Series microphone inputs. On "K" Series, all microphone inputs PLUS phonograph may be controlled. Up to 2000 ft. cable may be used. No inductive pickup. Models required for various amplifiers as follows:

RC-2 for H-15 amp. Requires ordinary 3 wire cable. Dimensions: 2 3/4" x 6" x 2 1/8". Shipping weight: 1 lb. LIST: \$9.00.

RC-3 for H-25 or H-4 amplifiers. Requires ordinary 4 wire cable. Dimensions: 2 3/4" x 6" x 2 1/8". Shipping weight: 1 lb. LIST: \$13.50.

RC-4 for H-50 amp. Requires ordinary 5 wire cable. Dimensions: 2 3/4" x 7 5/8" x 2 1/8". Shipping weight: 1 1/4 lbs. LIST: \$17.00.

RC-6 for KX-25, KX-50, KX-6A amplifiers. Requires ordinary 7 wire cable. Dimensions: 2 3/4" x 11 1/4" x 2 1/8". Shipping weight: 2 lbs. LIST: \$24.00.



RC-2 RC-3



RC-4



RC-6

LP-1 SCRATCH FILTER

Another contribution by Newcomb to improved record response for the most critical and demanding listener. Simple to install in commercial or professional systems or home phonographs. Can be connected easily by any serviceman. Wired between a crystal pickup and an amplifier, it greatly improves the response of the pickup and provides a remarkably effective control of needle scratch. Unlike other methods the LP-1 retains excellent brilliance of response. Four steps of adjustment provide adequate control for all records, regardless of quality. LIST: \$25.00.



MA-1 MAGNETIC PICKUP ADAPTER

MA-1 provides an inexpensive means of connecting variable reluctance pickups such as the new G.E., to any mike input. Added feature is incorporation of an effective scratch filter which may be cut in or out with a convenient switch. Initial wiring is for G.E. Pickup. Simple jumper charge quickly adapts the MA-1 for others such as Pickering, Lear, Astatic, etc. Size: 3" x 3 1/4" x 1 1/4". Shipping weight: 1 lb. LIST: \$5.00.



RACK ASSEMBLIES

For all the varied sound applications of schools, industry, churches, fairs, stadiums, Newcomb offers the basic elements for custom cabinet type rack systems. Designed for flexibility, the Newcomb rack equipment enables the engineer to assemble and install public address equipment of the highest quality, tailored to each customer's exact needs. Write for literature.

Newcomb

AUDIO PRODUCTS COMPANY

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# HAMILTON ELECTRONICS

## DS SERIES OF PORTABLE AMPLIFIER SYSTEMS

HAMILTON amplifier systems operate on 110-125 volt, 60 cycles, alternating current. Each system comes complete in all respects, including tubes, microphone, speakers and instructions.

Hamilton amplifier systems are housed in a single three-piece carrying case. Each piece fastens securely and easily. The upper halves each hold a heavy duty Jensen Alnico V speaker, plus a 25-foot cable with plug attached. The lower section of the case contains the perfect tone amplifier. The crystal microphone with shielded plug-in and 25 feet of cable rests in a special holder.

All the controls for the DS series amplifier are on the front panel, along with the toggle power switch, pilot light and protective fuse. Nothing is hidden or hard-to-get-at. The independent volume controls for both channels allow perfect mixing of sound. Bass-treble tone control permits tonal range from deep bass to high treble and allows for acoustical compensation wherever the equipment is used. Each Hamilton amplifier system has its own set of matched tubes, the larger units having the tubes clamped down.

### MODEL SPECIFICATIONS

**DS-720** — 20 watts. List Price \$175.00

Size: 14" x 12" x 20" Net wt.: 43 lbs. Shipping wt.: 52 lbs.

Tubes: 1-6SJ7, 1-6SL7, 2-6L6G, 1-5U4G. 12" speakers.

**DS-715** — 15 watts. List Price \$149.50

Size: 12" x 10" x 18". Net wt.: 34 lbs. Shipping wt.: 42 lbs.

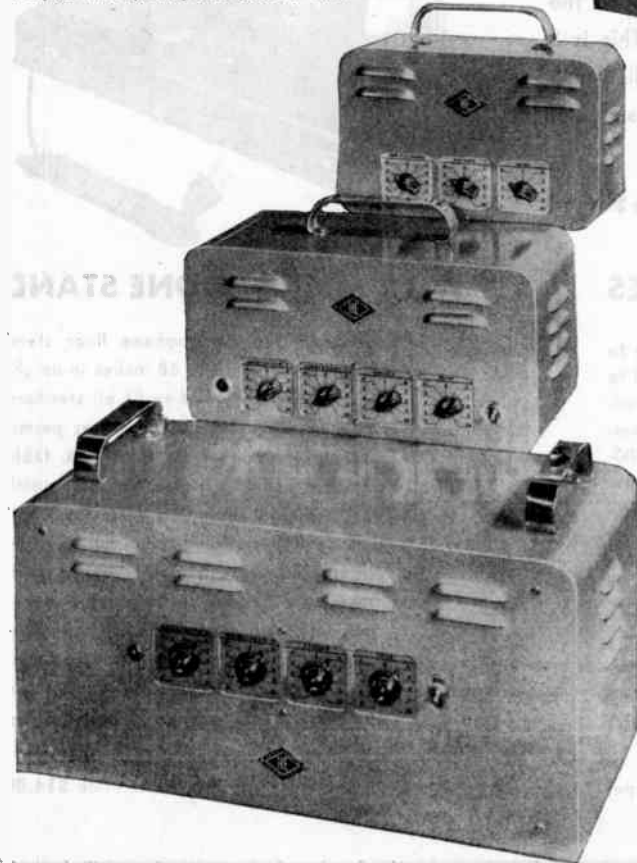
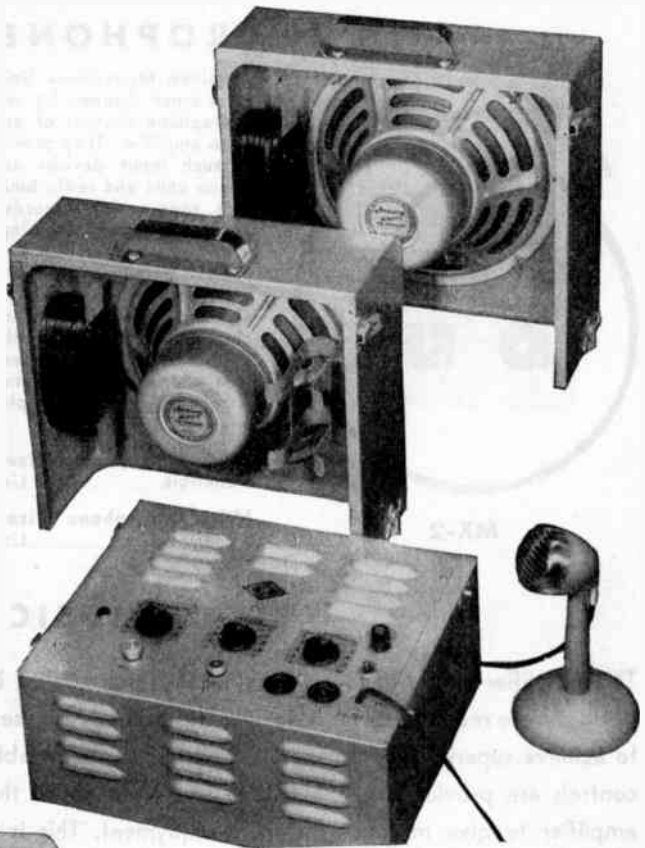
Tubes: 1-6SJ7, 1-6SL7, 2-6L6GT, 1-5Y3GT. 10" speakers.

**DS-710** — 10 watts. List Price \$124.50

Size: 11" x 9" x 16". Net wt.: 26 lbs. Shipping wt.: 38 lbs.

Tubes: 1-6SJ7, 1-6SL7, 2-6V6GT, 1-5Y3GT. 8" speakers.

**DYNAMIC MICROPHONE**—For a dynamic microphone instead of a crystal microphone, add \$5.00 to the list price.



## H SERIES OF AMPLIFIERS

**H-707-A SPECIFICATIONS** — 7-watt output. Tubes: 2-6SJ7, 1-6L6, 1-5Y3GT. Inputs: 1 Microphone, 1 Phono; both high impedance. Output impedances to voice coil. Operates on 117-volt, 60 cycles, draws 65 watts. Baked brown hammerloid finish. Size: 11" x 7" x 5". Net wt.: 9 lbs.; shipping wt.: 12 lbs. Audience coverage, up to 700 persons; area coverage, up to 4000 square feet. This is the ideal amplifier for all those smaller installations.

**H-707-A — List Price \$48.00**

**H-715-B SPECIFICATIONS** — 15-watt output. Tubes: 2-6SJ7, 1-6SL7, 2-6L6, 1-5Y3GT. Inputs: 2 Microphones, 1 Phono; all high impedance. Output impedances: 4, 8, 15 and 500 ohms. Operates on 117-volt, 60 cycles, draws 145 watts. Baked brown hammerloid finish. Size: 14" x 7 1/2" x 6 1/2". Net wt.: 14 1/2 lbs.; shipping wt.: 21 lbs. The tried and tested amplifier for general PA work. Many are in operation in garages, churches, factories, school auditoriums and restaurants. Will cover audiences up to 1500 people or an area of 8000 square feet.

**H-715-B — List Price \$76.00**

**H-730-B SPECIFICATIONS** — 30-watt output. Tubes: 3-6SJ7, 1-6SN7, 2-807, 1-5Z3. Inputs: 2 Microphones, 1 Phono; all high impedance. Output impedances: 4, 8, 15 and 500 ohms. Operates on 117-volt, 60 cycles, draws 100 watts. Baked brown hammerloid finish. Size: 10" x 20" x 8 1/2". Net wt.: 27 lbs.; shipping wt.: 45 lbs. An outstanding amplifier value, low in cost but high in quality. This amplifier will fill 75% of all sound job requirements.

**H-730-B — List Price \$127.50**

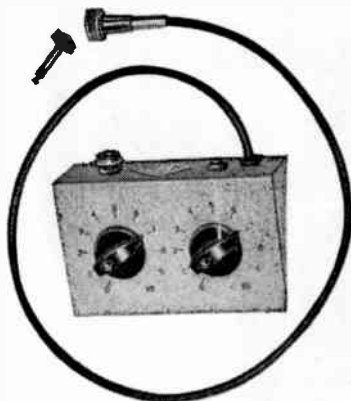
**H-750-B SPECIFICATIONS** — 50-watt output. Tubes: 3-6SJ7, 1-6SN7, 4-807, 1-83. Inputs: 2 Microphones, 1 Phono; all high impedance. Output impedances: 4, 8, 15 and 500 ohms. Operates on 117-volt, 60 cycles, draws 245 watts. Baked brown hammerloid finish. Size: 10" x 20" x 10". Net wt.: 31 lbs.; shipping wt.: 48 lbs. One of the finest amplifiers obtainable; only the highest quality parts and the best workmanship are put into it. The ideal amplifier for the large job where volume or coverage is needed. This is really high-power sound.

**H-750-B — List Price \$175.00**



# HAMILTON ELECTRONICS

## MX MICROPHONE MIXER UNITS

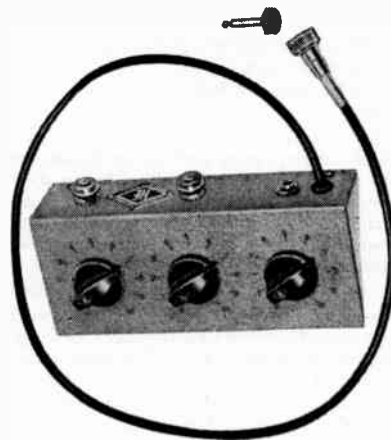


**MX-2**

Hamilton Microphone Units add 2 or 3 extra input channels for use into a single microphone channel of any high-impedance amplifier. They provide for the use of such input devices as microphones, phono units and radio tuners with amplifiers, tape or wire recorders and motion picture amplifiers. Each input channel on the mixer is equipped with its own volume control, permitting any degree of blending or mixing desired. The case is shielded and attractively finished in baked brown Hammerloid. Included with each mixer is a 33-inch shielded, rubber-covered cord with phone plug adapters, for use with Amphenol or standard phone plug connectors.

**MX-3 Microphone Mixer, 3 positions, 3 controls.....List Price \$14.00**

**MX-2 Microphone Mixer, 2 positions, 2 controls.....List Price \$12.00**



**MX-3**

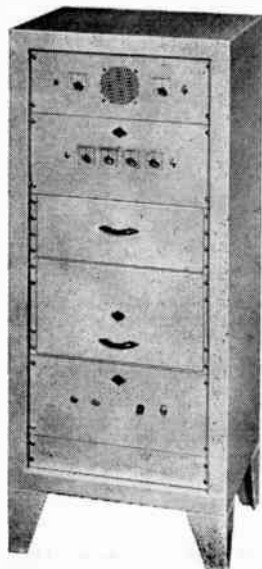
## TRIODE MUSIC AMPLIFIER

This amplifier is designed to provide the high-fidelity in performance required by music lovers. Triode tubes are used to achieve superior performance. Separate base and treble controls are provided to enable the listener to adjust the amplifier to give maximum listening enjoyment. This is a low-cost, high-quality amplifier but without the frills which add so much to the cost but which so many users cannot or will not properly operate.

**Triode Music Amplifier.....List Price \$86.00**



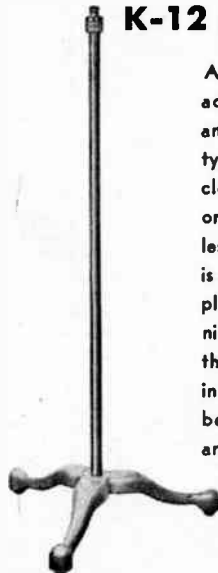
## RACK ASSEMBLIES



Rack assemblies are available to fit all requirements from small to large. Design is simple yet businesslike. Available for this assembly are 30-watt, 50-watt and 300-watt amplifier sections, preamplifiers with 3 to 6 channels, DC power supply units, sections for relay control, switching panels and changer and transcription drawers with ball-bearing slides. The design allows maximum flexibility for tailoring each job to the specific requirements of the customer. Finish is attractive baked brown Hammerloid.

**Rack Assemblies.** Submit specifications for prices.

## K-12 MICROPHONE STAND



A deluxe type microphone floor stand adjustable from 38 to 68 inches in height and with  $\frac{5}{8}$ -27 thread to fit all standard types of microphones. Three legs permit closer placement of stand to desk, table or pulpit, and give it greater stability with less likelihood of tipping over. The stand is made of heavy-gauge steel tubing triple plated, first with copper, second with nickel, and third with chrome, which is then highly polished. The base is finished in baked brown Hammerloid. Large rubber feet add to the stability of the stand and absorb floor shocks. Weight 10 lbs.

**K-12 Microphone Stand**  
List Price \$14.00

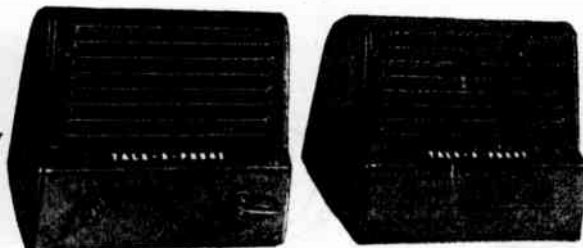
# TALK-A-PHONE

The World's Most Complete Line of  
**INTER-COMMUNICATION**  
Has Everything

"Elsie"  
(LC-2)

"Has Everything"

**TWO-STATION  
INTER-  
COMMUNICATION  
SYSTEM**



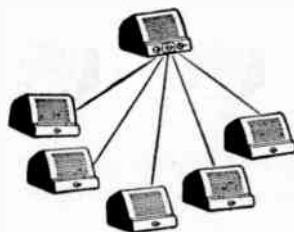
Complete with tubes, easy to follow instructions and 50 ft of cable.

List Price each system complete

**\$39<sup>95</sup>**

## "Take It Easy—Tell It to 'Elsie'"

Perfect for the home, office, farm, store, etc.—wherever two-way communication is needed between two points. Consists of one Master unit and one Sub-Station. System can be used either "Privately" or "Non-Privately." If "Non-Privately," the Talk-Listen control is not required to be used by persons at Sub-Station, and they are permitted to answer from distances even up to forty feet. Ideal for the nursery—you can keep tuned to baby's slightest move—no more getting up to see if baby is all right. Smartly styled matching cabinets of molded walnut Bakelite. Operates universally on 110-115 volts, AC or DC. The Sub-Station does not consume current and can be installed most anywhere. Cabinets measure 8 1/4" x 6 1/4" x 7 1/2". Weight packed, 12 lbs.



### LM-5; LM-10 MASTER SELECTIVE SYSTEMS

Consists of one Master Unit which can be connected with one or more (up to ten) Sub-Stations. The Master Station can talk "privately" to any one of the Sub-Stations or to all at one time. Sub-Stations can be connected "privately" or "non-privately". Has the TALK-A-PHONE "Silent Feature". Sub-Stations, whether connected "privately" or "non-privately", can originate calls to the Master Station. The Sub-Stations can be at considerable distances from the Master unit. Once a conversation has been initiated, with a "non-private" system, persons at Sub-Station locations need operate no controls and can reply from a distance. The Sub-Stations do not consume electric current and can be installed most anywhere. Cabinets measure 8 1/4" x 6 1/4" x 7 1/2". Weight packed — Master, 8 lbs., Sub-Stations, 5 lbs. Master Station operates universally on 110-115 volts, AC-DC.

be connected "privately" or "non-privately". Has the TALK-A-PHONE "Silent Feature". Sub-Stations, whether connected "privately" or "non-privately", can originate calls to the Master Station. The Sub-Stations can be at considerable distances from the Master unit. Once a conversation has been initiated, with a "non-private" system, persons at Sub-Station locations need operate no controls and can reply from a distance. The Sub-Stations do not consume electric current and can be installed most anywhere. Cabinets measure 8 1/4" x 6 1/4" x 7 1/2". Weight packed — Master, 8 lbs., Sub-Stations, 5 lbs. Master Station operates universally on 110-115 volts, AC-DC.

### Ordering LM-5; LM-10 Master Selective Systems

MODEL LM-5 Master Selective Station for five Sub-Stations, complete with tubes and easy-to-follow instructions. List Price ea. \$38.00

MODEL LM-10 Master Selective Station for ten Sub-Stations, complete with tubes and easy-to-follow instructions. List Price ea. \$51.00

MODEL LR-3 Sub-Station unit for LM-5 or LM-10 Master Station. List Price ea. \$12.75

No. 5303 (three-conductor) Cable. For use between each LR-3 Sub-Station and the LM-5 or LM-10 Master unit. List Price per foot 5c



### LS-5; LS-10 SUPER SELECTIVE SYSTEMS

Consists of all Master units. Extreme flexibility of inter-communication whereby any station in the system can call any other and carry on a two-way conversation. You can begin with two Masters and add up to a total of five in the case of the LS-5 units, or up to a total of ten in the case of the LS-10 units. As many as five private two-way conversations can be held at the same time with ten LS-10 Masters. Two private two-way conversations can be accommodated at the same time with the LS-5 system. All Master Stations are private. Stations cannot listen in on each other, nor can a third unit listen in on a conversation of two others. Variable volume, adjustable at each unit, provides for the incoming voice to be adjusted from a bare whisper to full volume that can be heard easily at a considerable distance. Stations can be located even 1000 or 2000 feet apart. Six-conductor cable providing for a total of five units is used with the LS-5 system and is run from the first unit to the second only, from the second to the third only, etc., until the last unit in the system is reached. Similarly, an eleven-conductor cable, providing for a total of ten units, is used for inter-connecting the LS-10 system. It is not necessary to run cable between the first and last units in the system. Cabinets measure 8 1/4" x 6 1/4" x 7 1/2". Weight packed, 8 lbs. Operates Universally on 110-115 volts, AC-DC.

### Ordering LS-5; LS-10 Super Selective Systems

MODEL LS-5 Super Selective unit for five stations, complete with tubes and easy-to-follow instructions. List Price ea. \$38.00

MODEL LS-10 Super Selective unit for ten stations, complete with tubes and easy-to-follow instructions. List Price ea. \$51.00

No. 5506 (six-conductor) Cable. For inter-connecting LS-5 units as outlined above. List Price per foot 11c

No. 9911 (eleven-conductor) Cable. For inter-connecting LS-10 units as outlined above. List Price per foot 20c

### ABOVE UNITS ALSO AVAILABLE IN GRAY CABINETS

For LC-2 System—add to List Price ea. \$5.00

For Other Stations Shown Above—add to List Price ea. \$2.50

**HOW TO DETERMINE CABLE NEEDS:** (A) For Master Selective Systems: Measure from Master to each Sub-Station to determine total cable needed. (B) For Super Selective Systems: Measure from first Master to second, to third, etc. Six-conductor cable is required for five-station system and eleven-conductor cable for ten-station system. (C) For two-station (LC-2) system use three-conductor cable.

Prices and Specifications Subject to Change Without Notice  
All prices 5% higher west of Rocky Mountains

CHICAGO

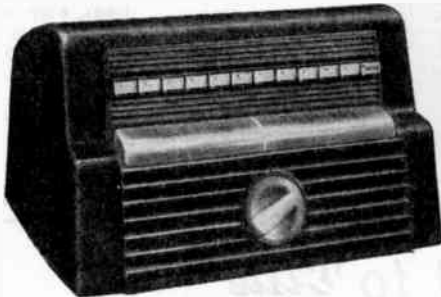
**TALK-A-PHONE CO.**

ILLINOIS

# TALK-A-PHONE

*"Chief Forty Niner"*  
DOES EVERYTHING—HAS EVERYTHING  
THE FINEST IN INTER-COMMUNICATION

Work faster, more efficiently, more economically — use the "Chief Forty-Niner." Eliminate "getting up and down," "going through" a busy switchboard, "waiting" to see your man. Touch of button gives you instant and direct two-way communication with sales, engineering, stockroom, shipping — without anyone leaving work. Direct that non-productive effort into productive results — add 20% to your day.



## ONE MODEL DOES EVERYTHING

TALK-A-PHONE's patented, exclusive "DYNASONIC" features gives you one model that "Does Everything." The same unit can be used for every type of application, whether it be as all Master Stations, or a Master and Staff Stations, or a number of Masters inter-mixed with Staff Stations. The Master Stations may talk with any other Master in the system as well as with all Staff Stations. Six, twelve, twenty and thirty capacity Master Stations can be used within the same system. The Staff Station may answer Master Stations and originate calls to one, two or six Master Stations, depending on its capacity. Staff Stations converse with Master Stations only. Staff Stations are not connected to electrical outlet.

Through its "DIFFERENTIAL STAFF" feature, TALK-A-PHONE permits any Staff Station to be used as either "Private" or "Non-Private", and also permits some Staff Stations to be "Private" and others "Non-Private" in the same system. "Private" Staff Stations have complete privacy, and no other station can "listen-in". Persons at "Non-Private" Staff Stations can answer from a distance up to 50 feet from the unit without leaving work. All Master and Staff Stations are assured of privacy, except where by choice, Staff Stations are designated as "Non-Private", in which case the Master Station can "listen-in" on the "Non-Private" Staff Stations.

**BEAUTIFULLY STYLED:** The Bakelite walnut cabinet of the "CHIEF FORTY-NINER" is unsurpassed in simplicity of design and appearance.

**TRANSLUCENT LIGHTING** further enhances its beauty as well as indicating whether the unit is "on" or "off."

**MULTI-MAGIC SELECTOR:** A patented exclusive TALK-A-PHONE feature. Twelve, twenty, thirty station capacity in SAME BEAUTIFUL CABINET with only TWELVE PUSH BUTTONS. Six-station Master has six push buttons.

**HOLD-A-MATIC CONFERENCE CONTROL:** TALK-A-PHONE "HOLD-A-MATIC" feature ALLOWS CONFERENCE between THREE or a GROUP OF STATIONS by merely selecting desired buttons.

**UNI-TRANS:** Gives you "DICTATION CONTROL."

**VOICE RANGE POWER:** The powerful, rugged amplifier gives you amazing, brilliant "voice range" power. Stations may be up to 3000 feet apart.

**DEPENDABILITY:** PROVED IN BILLIONS OF HOURS OF ACTUAL USE.

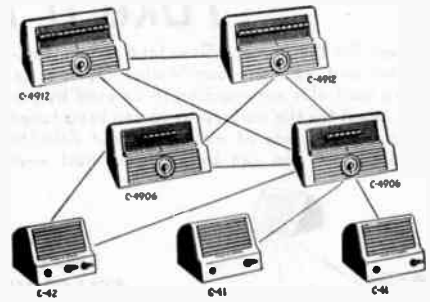
**PRIVACY EARPHONE:** Optional equipment on Master Stations. Provides listening privacy; and conversation with other Masters without continuous operation of touch bar.

**POWER PAGING:** Optional Booster for high power paging. May be added at any time.

**UNIVERSAL UNFAILING OPERATION:** Designed to withstand continuous day and night use. Operates anywhere on 110-120 volts, alternating current, 60, 50, 40 and 25 cycles; and 110-120 volts, direct current, at a cost of but a fraction of a cent a day.

**UNDERWRITERS' LABORATORIES APPROVED!**

**COMPLETE PACKAGE UNIT:** The "CHIEF FORTY-NINER" is complete with junction box — ready to plug in. Easy-to-follow instructions permit "anybody" to install TALK-A-PHONE.



All Master Stations and C-46 Staff Stations — 12" W x 9" D x 7" H.  
C-41 and C-42 Staff Stations — 8 1/4" W x 7 1/2" D x 6 1/4" H.

C-4906 Push button Master for six-station capacity, complete with tubes, junction box, and easy-to-follow instructions. Wt. 13 lbs. **List Price ea. \$72.50**

6212 CABLE — For inter-connecting C-4906. **List Price per foot 21c**

C-4912 Push button Master for twelve-station capacity, complete with tubes, junction box, and easy-to-follow instructions. Wt. 13 lbs.

**List Price ea. \$89.50**

C-4912X Same as C-4912 except equipped with privacy earphone. Wt. 13 lbs. **List Price ea. \$109.50**

6224 CABLE — For inter-connecting C-4912; C-4920; and C-4930. **List Price per foot 39c**

C-41 Staff Station for origination of call to one Master. Wt. 5 lbs. **List Price ea. \$18.70**

C-42 Staff Station for origination of calls to two Masters. Wt. 5 lbs. **List Price ea. \$28.00**

C-46 Push button Staff Station for origination of calls to six Masters. Wt. 9 lbs. **List Price ea. \$51.00**

6204 CABLE — For connecting C-41, C-42 and C-46 Staff Stations. **List Price per foot 8 1/2c**

Master Stations also available for twenty and thirty station capacities. All units are also available in Executive Gray Cabinets. Write for full details.

**HOW TO DETERMINE CABLE REQUIREMENTS:** To interconnect Master Stations, measure from first Master to second Master only, from second to third Master only, etc., and total. For C-4920 use two lengths of 6224 Cable, and for C-4930 use three lengths of 6224 Cable. To connect C-41 Staff Station, measure from Staff Station to the one Master to which Staff Station originates calls. To connect C-42 and C-46 Staff Stations, measure a separate length of cable from Staff Station to each Master Station to which Staff Station originates calls (for each C-42 or C-46, follow same procedure).

Manufactured under exclusive TALK-A-PHONE Patents. Licensed under U. S. Patents of A. T. & T. Co. and Western Electric Co. Inc. Prices and Specifications Subject to Change Without Notice  
All prices 5% higher west of Rocky Mountains

CHICAGO

TALK-A-PHONE CO.

ILLINOIS

# RCA ELECTRONIC COMPONENTS

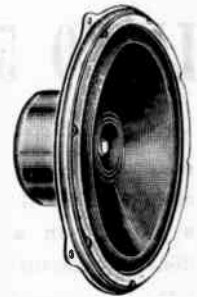
## SPEAKERS — PICKUPS



### PM LOUDSPEAKERS

QUALITY ENGINEERED TO INSURE DEPENDABLE PERFORMANCE

- Mounting Designed to RMA Standards.
- Dustproof, Rust-Resistant.
- Universal Transformer Mounting Bracket on All 4", 4" x 6" and 5" PM's.
- Felted Cone Gives Uniform Strength, Dependability and Smooth "Flutter-Free" Response.
- Rugged Mechanical Construction with Welded Housing Assembly.
- Exclusive RCA Magnet Clamping Spring Securely Locks Magnet in Position, except Types 423S1 and 304S2.
- Moisture-Resistant Voice-Coil Suspension Assures High Efficiency and Dependability.



RCA Duo-Cone 15" Speaker

### SPECIFICATIONS

#### Permanent Magnet Types

SIZE	TYPE No.	RESONANT FREQUENCY	MAGNET WEIGHT	VOICE COIL IMPEDANCE	MAXIMUM POWER HANDL'G CAP. (WATTS)	SUGG'D LIST PRICE*
2" x 3"	423S1	250-365	1.5 oz.	11.8 ohms at 1000 cycles	0.125	\$ 4.50
4" (shallow pot type)	304S2	175-225	1.0 oz.	3.2 ohms at 400 cycles	3	3.65
4"	404S2	170-225	1.47 oz.	3.2 ohms at 400 cycles	3	4.00
4" x 6"	246S2	150-200	0.68 oz.	3.2 ohms at 400 cycles	3	3.65
4" x 6"	446S2	150-200	1.47 oz.	3.2 ohms at 400 cycles	3	4.15
5"	205S2	150-200	0.68 oz.	3.2 ohms at 400 cycles	3	3.50
5"	405S2	150-200	1.47 oz.	3.2 ohms at 400 cycles	3	4.00
5" x 7"	257S1	120-140	1.47 oz.	3.2 ohms at 400 cycles	6	5.40
6"	306S1	100-140	1.47 oz.	3.2 ohms at 400 cycles	4	5.40
6" x 9"	269S1	95-120	2.4 oz.	3.2 ohms at 400 cycles	8	7.75
8"	208S2	75-95	2.15 oz.	6-8 ohms at 400 cycles	8	6.50
8"	208S4	75-95	2.15 oz.	3.2 ohms at 400 cycles	8	6.50
10"	410S1	75-125	6.8 oz.	6-8 ohms at 400 cycles	10	10.90
12"	112S1	65-90	2.15 oz.	3.2 ohms at 400 cycles	10	9.35
12"	412S6	65-90	6.8 oz.	3.2 ohms at 400 cycles	10	11.90
12"	412S7	65-90	6.8 oz.	6-8 ohms at 400 cycles	10	13.00
15"	515S1	40-55	2 lbs.	16 ohms at 400 cycles	25	55.00

#### Field Coil Types

SIZE	TYPE No.	RESONANT FREQUENCY	FIELD	VOICE COIL IMPEDANCE	MAXIMUM POWER HANDL'G CAP. (WATTS)	SUGG'D LIST PRICE
4" x 6"	746S1	150-200	450 ohms at 65 ma.	3.2 ohms at 400 cycles	3	\$ 5.70
5"	705S1	150-200	450 ohms at 65 ma.	3.2 ohms at 400 cycles	3	5.70
6" x 9"	869S1	95-120	6 ohms at 1000 ma.	3.2 ohms at 400 cycles	8	7.75
12"	712S1	70-85	1000 ohms at 70 ma.	3.2 ohms at 400 cycles	12	11.90

\*Federal Excise Tax included.

### CRYSTAL PICKUPS

#### MAGIC TONE CELL

Replaces crystals in RCA Victor radio-phonographs and record players (1938 and later). Permanent-type jewel point stylus. At 400 cycles, it has approximate impedance of 200,000 ohms and an output of approximately 1½ volts. Stock No. 211X1. Sugg'd List Price: \$7.00.

#### SILENT SAPPHIRE

Interchangeable with 70 different phonograph crystals. Similar to Magic Tone Cell in design and characteristics, but smaller in size. Comes complete with crystal, mounting plate, screws, and complete electrical and mechanical installation data. (For additional information see RCA Crystal Pickup Data sheet, Form 3F622) RCA Silent Sapphire, Stock No. 212X1. Sugg'd List Price: \$7.00.

#### CRYSTAL PICK-UPS

Stock No.	Suggested List Price
9890	\$ 7.00
14820	11.00
31050	4.20
31156	4.75
33122	4.20
34307	4.20
37158	4.75
38598	7.25
38610	5.55
39686	4.75
39919	7.25
70332	7.25
70338	7.00
70339	7.00
Adapter Kit	
74067	6.00
74625	6.75
212X1	7.00*
211X1	7.00*

\*Only available in Standard Pkg. 10

#### SAPPHIRES

Stock No.	Suggested List Price
39564	\$ 1.40
72345	3.95
70915	3.95
74068	1.60
74818	2.25

A complete line of Service Parts is available for all RCA apparatus.

All prices in effect 5/1/50.



# GENERAL ELECTRIC

## ALNICO 5 PM LOUDSPEAKERS

All component parts of the new Alnico 5 Loudspeakers are made to the rigid specifications of G-E quality control. This feature, in addition to highly efficient manufacturing skill, combined with the "know-how" of G-E engineers, has made these new superb speakers possible — unsurpassed in fidelity, dependability and durability.



4"

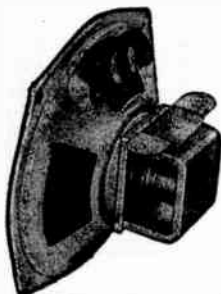
GENERAL ELECTRIC'S new 4-inch speakers are the result of years of intensive engineering research to produce units of reduced size with maximum efficiency for use in small portable and table model receivers. In addition to having the "stay-bright" finish and the aluminum foil base voice coil, the new 4-inch speakers are considerably lighter in weight and more compact. This reduction in weight and space has been accomplished through the use of Alnico 5 magnet material, all-weld construction, and smaller yoke assembly.

5 1/4"

GENERAL ELECTRIC'S 5 1/4-IN. PM speakers have all been designed and developed to provide full, true, low notes and excellent high frequency definition for voice or music reproduction. Skillful designing has been applied to all details to assure the best possible results.

6 1/2"

GENERAL ELECTRIC 6 1/2-inch loudspeakers are the result of years of persistent development to improve performance. Never were ideas introduced and combined with better quality materials. Greater sensitivity and power capacity in more compact space was achieved by these methods.



all size smaller. The speakers are capable of handling full audio power with very little distortion. These speakers are recommended for quality in design and faithful reproducing characteristics.

8"

The NEW ALNICO 5 PERMANENT MAGNET material was chiefly responsible for maintaining the excellent performance of the G-E 8-inch speakers and still keeping the over-



10"

GENERAL ELECTRIC'S new 10-inch P.M. speakers are the result of application of latest developments in scientific laboratory tone reproduction. Especially designed for brilliant reproduction of voice and music. They represent a perfect balance in relative factors of performance ability, cost, and appearance.



12"

GENERAL ELECTRIC'S powerful 12-inch permanent magnet loudspeakers are designed to provide faithful tone reproduction at high levels. They equal or surpass the performance of electro-dynamic speakers of the same size. All weld construction has minimized distortion at maximum operation levels by eliminating vibration.

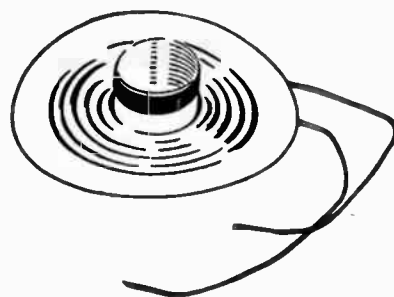
### SPEAKER CHARACTERISTICS

Cone Size, inches	Speaker Type	Watts Output	Alnico 5 Mag. Wt. Oz.	VC Imp Ohms	List Price
4	S-400D	4	1.8	3.2	\$ 4.25
4	S-402D	4	1.0	3.2	4.00
4	S-403D	4	.68	3.2	3.75
5 1/4	S-525D	4	1.8	3.2	4.75
5 1/4	S-526D	4	1.0	3.2	4.35
5 1/4	S-527D	4	.68	3.2	4.00
6 1/2	S-625D	4	1.8	3.2	5.50
6 1/2	S-626D	4	1.0	3.2	5.00
6 1/2	S-650D	8	3.98	3.2	6.75
8	S-800D	8	2.98	3.2	8.95
8	S-810D	12	6.8	3.2	12.00
8	S-818D	12	6.8	8	12.50
10	S-1000D	12	6.8	3.2	15.25
10	S-1001D	25	14.5	8	24.75
10	S-1003D	25	9.0	8	18.50
10	S-1012D	12	3.16	3.2	10.25
10	S-1018D	12	6.8	8	15.75
12	S-1200D	12	6.8	3.2	16.50
12	S-1201D	25	14.5	8	29.50
12	S-1203D	25	9.0	8	20.50
12	S-1212D	12	3.16	3.2	11.25
12	S-1218D	12	6.8	8	17.00
6 x 9	S-703D	8	1.47	3.2	7.50

### G-E LOUDSPEAKER FEATURES

ALNICO 5 MAGNET MATERIAL is one of the great wartime engineering developments. Its energy per unit volume — approximately three times as great as other magnets — has enabled G-E engineers to design a new line of smaller speakers with better performance characteristics.

ALL WELD CONSTRUCTION of the newly designed G-E Alnico 5 Loudspeakers not only reduces the weight and size but also increases the rigidity necessary for perfect alignment of all parts. It also eliminates the possibility of dust and moisture accumulation and simplifies the replacement of damaged cones.



ALUMINUM FOIL BASE VOICE COILS only are used in all G-E permanent magnet speakers. Exact concentric location with the collar of the spider assembly insures excellent alignment. Humidity or excessive temperature variations do not affect the aluminum foil voice coils, making this type of speaker ideal for receivers designed for use in export markets.

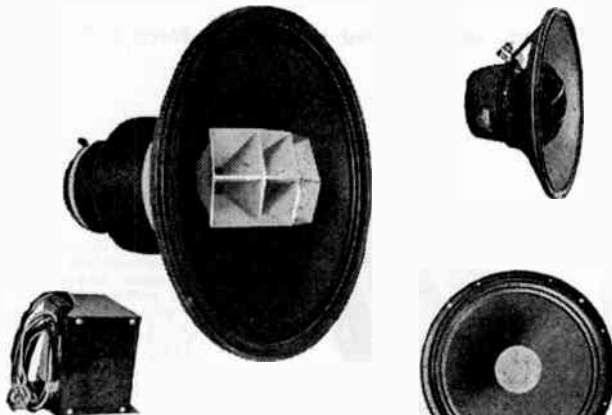
PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE

# Speakers, Cabinets, Multicellular Horns

# ALTEC

LANSING CORPORATION

1161 N. Vine Street  
Hollywood 38, Calif.  
161 Sixth Avenue  
New York 13, N.Y.



### MODEL 604B DUPLEX SPEAKER

604B, with its associated dividing network (N-1000B), is the finest single loudspeaker on the market. Meets critical requirements of broadcast and recording monitoring, public address and music distribution systems. Separate units for high and low frequencies. Voice coils made of edge-wound ribbon. Multicellular horn provides uniform sound distribution (60° hor., 40° vert.). 1,000 cycle crossover. V. C. and network impedance 16 ohms. Speaker handles 30 watts. Frequency response from 30 to 16,000 cps. Wt. including network, 40 lbs. Dimensions: 15 1/4" dia.; 11 1/4" deep.  
List price: \$166.67.  
N-1000B Network must be ordered as separate item. List price: \$24.00.

### 603B MULTICELL DIA-CONE SPEAKER

The 603B is the unanimous choice of those who require an economical, high-quality speaker. Offers high efficiency, broad distribution, wide frequency response, freedom from distortion. 8" 8 ohm voice coil is edge-wound. Dia-Cone principle provides extended frequency response. Multicellular horn loads high frequency diaphragm and distributes sound over 60° hor., 40° vert.: 15" cone insures full bass reproduction and 25 watt power-handling capacity. Weight: 18 lbs. Diameter: 15 1/4". Depth: 6 1/4".  
List price: \$84.00.

### 600B DIA-CONE SPEAKER

The 600B meets the needs of those whose discriminating tastes demand faithful reproduction of sound. Efficiency, small space requirements, light weight and superior quality of reproduction, make the 600B an ideal unit in the lower priced speaker field. Utilizes Dia-Cone principle. Similar in construction to the 603B. V. C. 8 ohms. Pwr. rating: 20 watts. Wt. 12 lbs. Dia. 12 1/4". Depth: 5 1/4".  
List price: \$54.24.

### 400B DIA-CONE SPEAKER

The 400B Dia-Cone was designed for use where the benefits of large-speaker performance cannot be utilized because of space and weight limitations. An extremely efficient, high quality unit, it is ideal for use in portable devices, airplanes, buses, etc. V. C. imp. 8 ohms. Pwr. rating: 12 watts. Wt. 4 lbs. Dia. 8 1/4". Depth: 3 1/4".  
List price: \$25.75.

## CABINETS

Engineered for high quality sound reproduction. Cabinets are made of heavy plywood. All joints are screwed and glued. Interiors padded to eliminate spurious rattles and reflections. Code letters show speaker size:

A-15"; B-12"; C-8".



**605**  
605-A  
Furniture  
Walnut or Mahogany  
H-38" W-30" D-16"  
List Price: \$180.00



**612**  
612-A, B  
Utility  
Blue Gray  
H-28 1/2" W-25 1/2"  
D-17 1/4"  
List Price: \$82.00



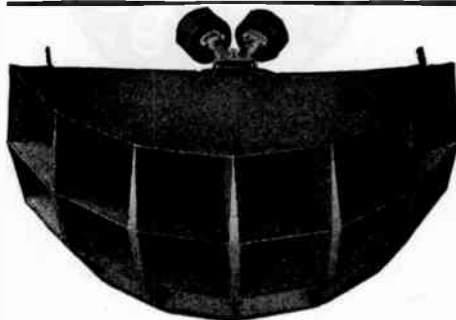
**614**  
614-A, B, C  
Portable  
Blue Gray  
H-24 1/2" W-18 1/2"  
D-14 1/4"  
List Price: \$56.00



**618**  
618-B, C  
Portable  
Slanting Front  
Blue Gray  
H-23" W-17"  
D-11 1/4"  
List Price: \$42.67



**620**  
620-A, B, C  
Furniture  
Walnut, Mahogany,  
White Birch  
H-33 1/2" W-26 1/2"  
D-11 1/4"  
List Price: \$60.00



### MULTICELLULAR HORNS

Altec Lansing multicellular horns are constructed from true exponential horn cells grouped in configurations to meet various sound distribution needs. The large multicellular horn is the best way to cover great distances and areas with high levels of acoustic power above 200-300 cps, and to direct this energy for maximum acoustic efficiency. Chart shows horns available. Throats must be ordered separately according to type required.

### 290 SPEAKER

Designed to fit on throats of Altec Lansing multicellular horns. So used, 290 speaker will produce sound level of 98 db (ref. 10<sup>-16</sup> watts/cm<sup>2</sup>) at 5' with input of 0.1 watt @ 1 kc. Mounted in cast bakelite ring, entire diaphragm and v.c. assembly is field replaceable. When used for all-range reproduction, attenuate frequencies below 800 cps. 80 watt capacity above 800 cps. 24 ohm v.a. under normal horn loading conditions. 6 1/4" dia. x 4 1/4" deep. Wt. 21 lbs.  
List price: \$200.00.



Horn Code #	Cell Configuration	Sound Distribution		Dimensions *L-W-H	Net Weight (Less Speakers)	LIST PRICE	Code No. Throat Required			Throat Code No.	LIST PRICE
		Horizontal	Vertical				1 Unit	2 Units	4 Units		
H-803	2 x 4	70°	35°	36 x 32 x 18	86	\$155.53	30162			30162	\$22.20
H-1003	2 x 5	90°	35°	35 x 40 x 18	131	216.67	30210	30170		30166	22.20
H-1203B	2 x 6	105°	35°	36 x 43 x 18	152	216.67	30210	30170		30210	22.20
H-1504	3 x 5	105°	60°	33 1/4 x 40 x 24	160	244.47	No.	No.		30170	44.40
H-1803	3 x 6	105°	55°	35 x 43 x 25	184	255.53	30166	30172	(2)30170	30172	44.40

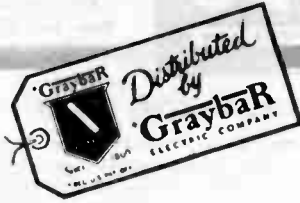
\* Overall length of horn including throat and 288 unit (s).

# Loudspeakers and Horns

# ALTEC

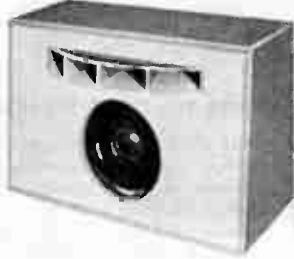
LANSING CORPORATION

1161 N. Vine Street  
Hollywood 38, Calif.  
161 Sixth Avenue  
New York 13, N.Y.



Formerly manufactured by Western Electric Co., Inc.

**757A** Where wide distribution and extended frequency range are required, the 757A is perfectly adapted. Ideal for recording studios, program distribution systems, and other applications where highest quality sound reproduction is required, the 757A provides excellent frequency response and wide angle of distribution. High frequency speaker and horn, low frequency speaker and network are housed in utility cabinet which may be finished to taste or mounted in walls or furniture. 60-15,000 cps. Impedance, 4 ohms. 30 watts. H-20"; W-30 1/2"; D-13 3/4". Weight 82 lbs. List Price: \$220.70



**728B**

Engineered to provide quality sound reproduction in speech and music monitoring and in public address systems. 60-10,000 cps. Impedance, 4 ohms. 30 watts. 12 1/2" dia. 3 3/8" deep. Weight, 17 lbs.

List Price: \$31.20

**754B**

Designed with phenolic diaphragm for outdoor use, this speaker is ideal for public address sound distribution systems, wired program service. Impervious to moisture and salt spray. 60-10,000 cps. Impedance, 4 ohms. 50 watts. Dimensions, 12 1/2" x 3 3/4". Weight, 17 lbs.

List Price: \$106.00



**755A**

Exceptional frequency response, small size and moderate power handling capacity provide an ideal combination for low level distribution systems where multiple speakers are used. Its small size makes wall installations practical and easy. 70-13,000 cps. Impedance, 4 ohms. 8 watts. Dimensions, 8 3/4" dia. x 3 1/8" deep. Weight, 4 3/4 lbs.

List Price: \$22.50

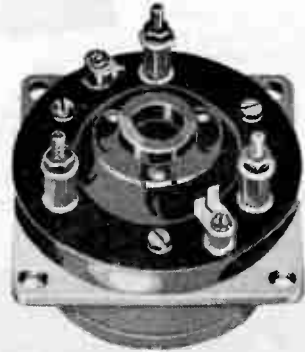
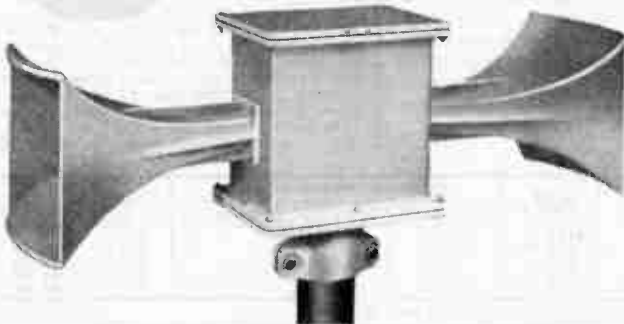
**KS-12047 HORN**

Rugged, weatherproof bi-directional horn for high-level paging or talk-back systems. Ideal for noisy locations such as railroad yards, mines, mills. Will work as microphone. Uses separately ordered 720A Receiver. Clamps on 2 1/2" pipe. 30 watts. L-31 5/8"; W-13 3/8". Weight, 24 lbs. List Price: \$148.50



**31A HORN**

Shown with 713A Receiver and 27A Receiver Attachment. Handles 25 watts, speech or music. W-23"; H-9"; D-15". Weight, 9 1/2 lbs. Gray finish. List Price: \$54.00



**720A RECEIVER**

500-6500 cps. 25 watts. 16 ohms. 4 1/8" x 4 7/8". Weight, 8 lbs. List Price: \$65.40

- 32A Horn ..... List Price: \$25.85
- KS-12024 Horn ..... List Price: \$31.20
- KS-12025 Horn ..... List Price: \$31.20
- KS-12027 Horn ..... List Price: \$61.95

# Smith - Nathaniel Baldwin

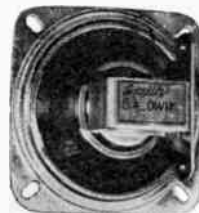
MANUFACTURED BY CONSOLIDATED RADIO PRODUCTS CO. CHICAGO 10, ILL.

## PERMANENT MAGNET MODELS

This series will be found suitable for direct replacement in equipment where cost and trouble-free operation are a serious consideration.

### PERMANENT MAGNET MODELS

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
3"	P3AR1	.88 oz.	3-4	1/2"	1.5	\$ 3.75
3 1/2"	P3AR1	.88	3-4	1/2"	1.5	3.75
3 1/2"	P3AS2	1.00	45	1/2"	1.5	4.00
3 1/2"	P3AS3	1.47	3-4	1/2"	2.	4.25
4"	P4AR1	.88	3-4	1/2"	1.5	4.00
4"	P4AS2	1.00	45	1/2"	2.	4.25
4"	P4AS3	1.47	3-4	1/2"	2.5	4.80
5"	P5AR1	.88	3-4	1/2"	3.	4.15
5"	P5AS2	1.00	45	1/2"	3.	4.50
5"	P5AS3	1.47	3-4	1/2"	3.5	4.85
5 1/4" Pin Cush.	P5QAS3	1.47	3-4	1/2"	3.5	5.00
6 1/2" Pin Cush.	P6AR1	.88	3-4	1/2"	3.	4.75
6 1/2" Pin Cush.	P6AS2	1.00	3-4	1/2"	3.25	5.00
6 1/2" Pin Cush.	P6AS3	1.47	3-4	1/2"	3.5	5.35
6 1/2" Pin Cush.	P6CR5	2.15	3-4	3/4"	4.	6.25
6 1/2" Pin Cush.	P6R6	3.16	3-4	3/4"	5.	7.00
6 1/2" Pin Cush.	P6OX6	4.84	3-4	1"	6.	8.75
6 1/2" Pin Cush.	P6Sun8	6.8	6-8	1"	8.	10.75
8"	P8CR5	2.15	3-4	3/4"	6.	7.75
8"	P8R6	3.16	3-4	3/4"	7.	8.50
8"	P8OX8	4.84	6-8	1"	8.	10.00
8"	P8Sun9	6.8	6-8	1"	10.	12.00
10"	P10R6	3.16	6-8	1"	8.	10.75
10"	P10OX8	4.84	6-8	1"	9.	12.25
10"	P10Sun9	6.8	6-8	1"	10.	14.50
12"	P12R6	3.16	6-8	1"	8.	11.50
12"	P12OX8	4.84	6-8	1"	10.	13.50
12"	P12Sun9	6.8	6-8	1"	12.	15.00



### OVALS

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
4" x 6"	P46AS1	.88 oz.	3-4	1/2"	3.	\$ 4.50
4" x 6"	P46AS3	1.47	3-4	1/2"	3.5	5.50
5" x 7"	P57AS3	1.47	3-4	1/2"	4.	5.75
5" x 7"	P57CR6	2.15	3-4	3/4"	5.	6.75
6" x 8"	P6R6	3.16	3-4	3/4"	6.	8.00
6" x 8"	P6OX8	4.84	3-4	1"	7.	8.75
6" x 8"	P6Sun9	6.8	6-8	1"	8.	12.00

### COAXIAL SERIES

Developed as an answer to an economical dual speaker system, the Coaxial Speaker should be used wherever quality is important.

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
12"	P12CO8	4.84 oz.	8	1"	10	\$30.00
12"	P12CO9	10.	8	1"	12	37.50
15"	P15CO9	10.	8	1 1/2"	14	50.00
15"	P15CORM26	26.	8	1 1/2"	22	70.00

### WEAHTEROID SERIES

For Outdoor Theatres and other similar applications. These Speakers are especially designed and constructed for use in the open. We highly Recommend this series for "drive-in" theatre installations.

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
4"	P4AS3W	1.47 oz.	3-4	1/2"	2.5	\$6.50
5"	P5AS3W	1.47	3-4	1/2"	2.5	6.85
6 1/2" Pin Cush.	P6CR7W	2.15	3-4	3/4"	4.	8.25
4" x 6"	P46AS3W	1.47	3-4	1/2"	3.5	7.50



# Smith — Baldwin Nathaniel

MANUFACTURED BY CONSOLIDATED RADIO PRODUCTS CO. CHICAGO 10, ILL.

## HIGH FIDELITY SERIES

These are Highly Recommended for any purpose where exceptional power handling ability and high-quality performance are essential.

### 10 OZ. PLUG ALNICO V



SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
8"	P88un10	10 oc.	8-8	1"	8	\$15.00
10"	P108un10	10	8-8	1"	10	18.50
12"	P128un10	10	8-8	1"	12	18.00
15"	P158un10	10	8-8	1"	15	25.00

### 15 OZ. RING ALNICO V

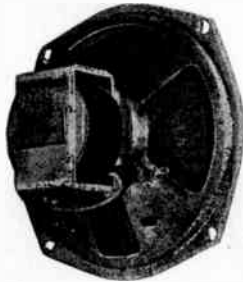
SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
12"	P12RM15	15 oc.	8-8	1 1/2"	14	\$28.50
15"	P15RM15	15	8-8	1 1/2"	16	35.00

### 1.66 LBS. RING ALNICO V

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
12"	P12RM26	26.6 oc.	8-8	1 1/2"	16	\$48.00
15"	P15RM26	26.6	8-8	1 1/2"	18	58.00

### 1.75 LBS. RING ALNICO V

SIZE	MODEL	MAGNET ALNICO V	VOICE COIL			LIST PRICE
			IMPED.	DIAM.	WATTS	
12"	P12RM28	28 oc.	8-8	1 1/2"	17	\$45.00
15"	P15RM28	28	8-8	1 1/2"	21	63.00



### FIELD COIL MODELS

SIZE	MODEL	FIELD COIL		VOICE COIL			LIST PRICE
		RESISTANCE	WATTS	IMPED.	DIAM.	WATTS	
3 1/2"	E3MT65	450	4.	3-4	1 1/2"	2.	8 4.50
4"	E4MT65	450	4.	3-4	1 1/2"	2.	4.75
4"	E4MT10	1000	4.	3-4	1 1/2"	2.	4.75
4"	E4MT18	1800	4.	3-4	1 1/2"	2.	4.75
4"	E4MT27	3750	4.	3-4	1 1/2"	2.	4.75
4" x 8"	E48MT45	450	4.	3-4	1 1/2"	2.5	5.00
4" x 8"	E48MT10	1000	4.	3-4	1 1/2"	2.5	5.00
4" x 8"	E48MT18	1800	4.	3-4	1 1/2"	2.5	5.00
4" x 8"	E48MT27	3750	4.	3-4	1 1/2"	2.5	5.00
5"	E5MT45	450	4.	3-4	1 1/2"	2.5	5.00
5"	E5MT10	1000	4.	3-4	1 1/2"	2.5	5.00
5"	E5MT18	1800	4.	3-4	1 1/2"	2.5	5.00
5"	E5MT27	3750	4.	3-4	1 1/2"	2.5	5.00
6" plus	E6VMT	6 Voh	4.	3-4	1 1/2"	2.	5.75
6" plus	E6MT45	450	4.	3-4	1 1/2"	2.	5.75
6" plus	E6MT10	1000	4.	3-4	1 1/2"	2.	5.75
6" plus	E6MT18	1800	4.	3-4	1 1/2"	2.	5.75
6" plus	E6MT27	3750	4.	3-4	1 1/2"	2.	5.75
6" x 8"	E8VMT	8 Voh	4.5	3-4	1 1/2"	2.	7.50
6" x 8"	E8MT10	1000	4.5	3-4	1 1/2"	2.	7.50
6" x 8"	E8MT18	1800	4.5	3-4	1 1/2"	2.	7.50
6" x 8"	E8MT27	3750	4.5	3-4	1 1/2"	2.	7.50
8"	E8MT45	450	4.5	3-4	1 1/2"	2.	7.50
8"	E8MT10	1000	4.5	3-4	1 1/2"	2.	7.50
8"	E8MT18	1800	4.5	3-4	1 1/2"	2.	7.50
8"	E8MT27	3750	4.5	3-4	1 1/2"	2.	7.50
10"	E10MT10	1000	8.5	8-8	1	8.	10.50
10"	E10MT18	1800	8.5	8-8	1	8.	10.50
12"	E12MT10	1000	8.5	8-8	1	10.	12.00
12"	E12MT18	1800	8.5	8-8	1	10.	12.00
15"	E15MT10	1000	8.5	8-8	1	15.	15.00

We also Manufacture Impedance Matching Transformers.  
Write for Complete Catalog.





# Jensen



## Concert SPEAKERS

JENSEN Concert Series speakers have long been known and acclaimed by the trade and by users for their plus performance. From the earliest days, Concert speakers have been recognized by such familiar designations as A12-PM, PM8-C and others and have been known as the finest speakers anywhere available for heavy-duty applications. Now, in greatly improved design, they are highly

recommended for any purpose where exceptional power handling ability and high-quality performance are essential. Standard fidelity models are listed on this page.

Concert speakers are attractively finished in blue-gray lacquer and completely dustproofed. Field coil models are equipped with bum neutralizing coils.



### ALNICO 5 PM MODELS

Nominal Size	Model No.	Stock No.	†Gap Energy Level	DIMENSIONS, Inches			VOICE COIL			*Transformer Size	List Price
				O.D.	Depth	Baffle Opening	Diam. In.	Imped. Ohms	Power Watts		
15"	P15-N	ST-654	6.6	15 1/4	8	13 1/4	1 1/2	8	20.0	1x1"	\$60.50
	P15-P	ST-655	4.6	15 1/4	8	13 1/4	1 1/2	8	18.0	1x1"	52.00
	P15-Q	ST-678	3.2	15 1/4	8	13 1/4	1 1/2	8	10.0	7/8 x 7/8"	38.50
12"	P12-N	ST-656	6.6	12 1/2	7	10 1/2	1 1/2	8	18.0	1x1"	54.00
	P12-P	ST-657	4.6	12 1/2	6 7/8	10 1/2	1 1/2	8	16.0	7/8 x 7/8"	44.00
	P12-Q	ST-673	3.2	12 1/2	6 7/8	10 1/2	1 1/2	8	14.0	7/8 x 7/8"	30.55
	P12-R	ST-103	2.2	12 1/2	6 7/8	10 1/2	1	6-8	12.0	7/8 x 7/8"	21.45
10"	P10-Q	ST-676	3.2	10 1/2	5 1/2	8 3/4	1 1/4	8	12.0	7/8 x 7/8"	28.95
	P10-R	ST-121	2.2	10 1/2	5 1/2	8 3/4	1	6-8	10.0	7/8 x 7/8"	20.35
8"	P8-Q	ST-677	3.2	8 1/2	4 1/8	6 3/4	1 1/4	8	10.0	7/8 x 7/8"	26.60
	P8-R	ST-169	2.2	8 1/2	4	6 3/4	1	6-8	9.0	7/8 x 7/8"	16.80

Model P8-Q weatherproof design. No transformer mounting facilities.

### FIELD COIL MODELS

Nominal Size	Model No.	Stock No.	†Gap Energy Level	DIMENSIONS, Inches			VOICE COIL			FIELD		*Transformer Size	List Price
				O.D.	Depth	Baffle Opening	Diam. In.	Imped. Ohms	Pwr. Watts	Resist. Ohms	Power Watts		
15"	F15-N	ST-661	6.6	15 1/4	8 3/8	12 1/2	1 1/2	8	20.0	4000	17.5	1x1"	\$48.40
	F15-N	ST-662	6.6	15 1/4	8 3/8	12 1/2	1 1/2	8	20.0	5300	17.5	1x1"	48.40
	F15-Q	ST-663	3.2	15 1/4	8 3/8	12 1/2	1 1/2	8	14.0	1000	12.0	7/8 x 7/8"	31.35
12"	F12-N	ST-666	6.6	12 1/2	7 1/8	10 1/2	1 1/2	8	18.0	4000	17.5	1x1"	40.15
	F12-N	ST-667	6.6	12 1/2	7 1/8	10 1/2	1 1/2	8	18.0	5300	17.5	1x1"	40.15
	F12-Q	ST-668	3.2	12 1/2	7 1/8	10 1/2	1 1/2	8	14.0	1000	12.0	7/8 x 7/8"	23.10

\*Size recommended. See Transformer listing. †Millions of ergs. Field resistance for full excitation will rise approximately 20%.

### AUDITORIUM SPEAKERS‡

The first highly-efficient large-size speaker was designed and produced by JENSEN in 1928. It was named the "Auditorium" and never were critics more consistent in its endorsement as the utmost in heavy-duty speakers. For more than 20 years JENSEN Auditorium speakers have set the highest standards for efficiency, response characteristics and faithful performance. Today, the Auditorium line has been completely redesigned and comprises undeniably the best known and most highly respected speakers available, second only to JENSEN Coaxials. They are recommended for theatres, public address systems, fine electronic musical instruments, where the utmost in quality reproduction and power handling ability are required.

Nominal Size	Model No.	Stock No.	†Gap Energy Level	DIMENSIONS, Inches			VOICE COIL			*Transformer Size	List Price
				O.D.	Depth	Baffle Opening	Diam. In.	Imped. Ohms	Pwr. Watts		
18"	PMJ-18	ST-541	28.1	18	9 3/4	15 3/4	2 1/2	8	30	1x1 1/4"	\$264.50
15"	P15-L	ST-758	13.6	15 1/4	8	13 1/4	2	8	25	1x1 1/4"	108.60

\*Size recommended. See Transformer listing. †Millions of ergs.

### Q8P HIGH-FREQUENCY SPEAKER



Designed to reproduce the high frequencies from 4,000 to 15,000 cps., when used with dividing network (such as A40-1) and suitable low frequency speaker. Impedance, 16 ohms. Overall diameter, 5 1/2". Depth, 3 5/8". P.M. design.

Q8P—H.F. Speaker. ST-589. List Price.....\$14.65

ST-605—Mounting Arms. Set of 4. List Price.....\$1.60

### A40-1 NETWORK



This uniquely designed two-channel network is offered to those who wish to assemble their own two-way speaker systems, or add a high-frequency speaker to an existing single speaker. Frequency division is at 4,000 cps., with an attenuation outside pass band of 10-12 db per octave. Low frequency channel will accommodate any suitable 8 ohm 12" or 15" speaker. High channel takes one to four Q8P High Frequency Speakers (16, 8 and 4 ohm taps). Input, 500 ohms. High Frequency Range Control Switch feature included. Specify

ST-604—List Price.....\$39.40



# Jensen



## JENSEN HYPEX PROJECTORS



VH-24  
VH-20  
VH-15



VH-91



V-21

Because of the Hypex formula (Patent 2,338,262) giving wider sound distribution and greatly improved acoustical performance, JENSEN Hypex projectors are superior to the usual "exponential" type horns. The Alnico 5 unit is entirely enclosed within the one-piece rigid horn yet easily removed and replaced. Stainless steel and other corrosion-resistant materials and specially treated steel parts insure against weather exposure. Models VH-24, VH-20 and VH-15 have mounting brackets with clutch-type heavy "U" trunnions which afford complete flexibility of adjustment with positive locking into desired position. Weatherproof terminal boxes provide easy, solderless connections with no exposed terminals. Model VH-91 has a universal mounting bracket which permits pointing in any direction and secure locking by a single wing nut.

### SPECIFICATIONS

Model No.	Stock No.	Cut-Off, CPS	Acoust. Path, In.	Coverage Angle Degrees	Power Rating Watts	Voice Coil Imped. Ohms	Diam. In.	Length, In.	Trans.* Core Size	List Price
VH-24	ST-685	110	58	75	25	16	25	22 3/4	1x1 1/4	\$74.50
VH-20	ST-684	140	52	80	25	16	21	20 1/4	1x1 1/4	63.00
VH-15	ST-757	180	36	90	15	8	16	15	3/4 x 3/8	47.00
VH-91	ST-171	800	16	100	15	8	8 3/4	7 3/4	3/4 x 3/8	32.50

\*Not included.

## HYPEX "Three-sixty" PROJECTORS



VR-11

Designed for the reproduction of speech and music signals at high efficiency where high noise levels exist. The Hypex formula, made famous by JENSEN Hypex projectors, is incorporated in their design giving greatly improved acoustical performance. With the sound distributed over a circle, they are especially suitable for installations where coverage of relatively large areas and suspension from the ceiling are desired. Model VR-11 is recommended for speech reproduction while Model VR-241, of larger size, is intended for speech and music reinforcement. Driver unit has phenolic diaphragm; VR-241 uses same diaphragm as VH-24 and VH-20; VR-11 uses same diaphragm as VH-15 and VH-91. VR-241 is equipped with weatherproof terminal box with connecting cable passing through rubber grommet and leads attached to screw terminals provided. VR-11 has two-conductor rubber-covered cable for connections. Both equipped with heavy eyebolt at top for suspension.



VR-241

### SPECIFICATIONS

Model No.	Stock No.	Cut-Off, CPS	Acoust. Path, In.	Coverage Angle Degrees	Power Rating Watts	Voice Coil Imped. Ohms	Diam. In.	Length, In.	Trans.* Core Size	List Price
VR-241	ST-789	140	54	360	25	16	25	22	1x1	\$79.00
VR-11	ST-791	280	18	360	15	8	11	10 3/4	3/4 x 3/8	40.00

\*Not included.

## MODEL V-21 DRIVER UNIT

This driver unit incorporates the driver element used in the new Hypex projectors and is electrically and mechanically interchangeable with the former U-20 ST-630 and U-201 ST-732 Driver units. It is designed for replacement service on former Models H-20 ST-726, H-201 ST-733 and H-24 ST-727 Hypex horns. Unit is PM type and equipped with internal screw terminals. Flange is designed for 1/4" bolt attachment, with three 1/8" holes spaced 120 degrees apart on a radius of 2 3/4". Voice coil input 16 ohms and power rating 25 watts.

Model V-21 Driver Unit, ST-787.....List Price \$32.50

## SPEECH MASTER PROJECTORS

Sturdy construction, overall mechanical protection, double dust-proofing, streamline design and exceptional acoustical performance recommend these projectors for paging and intercommunication. PM design. Good talk-back performance in PA systems. Hammered gray finish; chrome trim. RC 36" cord. Space within case for 1/2" x 1/2" transformer.



AR-10



AP-10

## TYPE "S" PROJECTOR

These projectors are complete assemblies of specially designed driver unit and acoustic system, utilizing the Peri-Dynamic principle and correctly engineered projector horn. Response is unusually good in the 100-cycle region and good efficiency is maintained to 5500 cycles, thus qualifying the projector for music and speech reproduction. Projector is suitable for use indoors or out because it is completely weatherproofed. Complete with plugs but without stand.



SPH-81

Model SPH-81 Projector, ST-633.....\$82.50  
EA-5 Adjustable Stand, ST-730.....5.00

Model No.	Stock No.	V.C. Imped. Ohms	Power Watts	Diam. In.	Depth In.	List Price
AP-10	ST-590	3-4	5	5	4 1/2	\$19.95
AP-10	ST-591	45-50	5	5	4 1/2	17.00
AP-11	ST-592	3-4	5	5	4 1/2	15.00
AP-11	ST-593	45-50	5	5	4 1/2	14.35
AR-10	ST-643	3-4	6	10	8	22.00
AR-10	ST-644	45-50	6	10	8	20.75





# Jensen



H-510

## GENUINE JENSEN WIDE-RANGE SERIES

No longer is truly good listening ruled out by cost or size restrictions. Now music can come to life for everyone, for Genuine JENSEN Wide Range loudspeakers include small sizes as well as large . . . low-cost units as well as more expensive models.

The four new JENSEN Coaxial speakers which replace all previous models embody the latest developments in loudspeaker design: the Wide-Range ACOUSTIC LENS for h-f dispersion (in Model H-510), annular Diaplane radiators, and new Hypex contour h-f horns. As a result these speakers achieve thrillingly realistic instrumental

and vocal tone quality and subtly satisfying "presence" low in cost in comparison with previous highest-quality systems. The term "high-fidelity" applied to these Coaxial systems connotes wider frequency range, greater response uniformity and better polar characteristics.



K-210



K-410  
K-310

Typical of JENSEN leadership is the ACOUSTIC LENS used on Model H-510 Coaxial. This lens acts in conjunction with the h-f horn to distribute h-f radiation uniformly over a wide angle, insuring constant balance and high quality reproduction throughout the whole room.

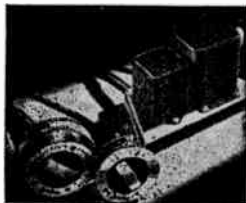
## COAXIAL SPEAKERS

Nominal Size	Model No.	Stock No.	Input Imped. Ohms	Power Watts	Freq. Range Rating†	Baffle Opening In.	O.D. In.	Depth In.	List Price
15"	H-510	ST-828	16	25	+7 LIM	18 1/2	15 1/2	9 1/8	\$148.50
15"	K-410	ST-829	16	20	+7 LIM	18 1/4	15 1/2	9	99.50
15"	K-310	ST-830	16	16	+7 LIM	18 1/4	15 1/2	8 1/2	61.90
12"	K-210	ST-831	8	12	+7 LIM	10 1/2	12 1/2	6 1/8	36.75

## EXTENDED-RANGE LOUSPEAKERS (+ 6 LIM)

Nominal Size	Model No.	Stock No.	*Gap Energy Level	Dimensions, Inches			Voice Coil Imped. (Ohms)		Pwr. Watts	Transformer Size†	List Price
				O.D.	Depth	Baffle Open	Diam. In.				
15"	P15-NX	ST-817	6.6	15 1/2	8	18 1/2	1 1/2	8	18.0	1" x 1"	\$63.00
12"	P12-NX	ST-819	6.6	12 1/4	7	10 1/2	1 1/2	8	16.0	1" x 1"	56.10
	P12-RX	ST-825	2.2	12 1/2	6 1/8	10 1/2	1	6-8	11.0	7/8" x 7/8"	23.65
	P12-SX	ST-821	1.5	12 1/2	6 1/8	10 1/2	1	6-8	9.0	7/8" x 7/8"	19.80
10"	P10-RX	ST-886	2.2	10 1/2	5 1/4	8 3/4	1	6-8	9.0	7/8" x 7/8"	22.55
	P10-SX	ST-823	1.5	10 1/2	5 1/4	8 3/4	1	6-8	8.0	7/8" x 7/8"	18.45
8"	P8-RX	ST-887	2.2	8 1/2	4	6 3/4	1	6-8	8.0	3/4" x 3/4"	19.55
	P8-SX	ST-825	1.5	8 1/2	3 1/2	6 3/4	1	6-8	7.0	3/4" x 3/4"	15.60
6"	P6-TX	ST-826	1.1	6 1/2	2 3/4	5 1/2	3/4	3-4	5.0	5/8" x 5/8"	9.90
5"	P5-TX	ST-827	1.1	5 1/2	2 1/2	4 1/2	3/4	3-4	4.0	1/2" x 1/2"	8.80

\*Millions of ergs. †Size recommended. ‡See page C-11 for explanation.



### CONTROL NETWORK

Adjustable level and high-frequency range controls for Models H-510, K-410 and K-310 Coaxial speakers. Mounts directly on speaker housing. Plug-in connections. Input impedance 16 ohms. May be used with Impedance-Adjusting Transformers. Chassis complete with network, speaker connection cord and plug, Level Control and H-F Range Control on individual 80" cables for remote mounting on

cabinet, satin brass flush-type escutcheons, bar knobs and mounting screws.

A-110 Control Network, ST-832.

List Price \$26.50

### H-F CONTROL

"L"-type variable control for "shelving" high-frequency response of Model K-210 Coaxial. Impedance 16 ohms. Complete with flush-type satin brass escutcheon and bar knob.

ST-836 Control

List Price \$4.85



### IMPEDANCE-ADJUSTING TRANSFORMERS

Designed to provide alternative input impedances for Models H-510, K-410 and K-310 Coaxial speakers. High-fidelity. Switch on chassis gives choice of two impedance values. No wiring necessary, connecting plug inserted in socket on speaker terminal panel. May be used with Model A-110 Control Network.

Model T-101 Transformer Assembly, ST-833. Impedance 4 and 8 ohms. List Price \$12.00

Model T-102 Transformer Assembly, ST-834. Impedances 500-600 and 350 ohms. List Price \$12.00

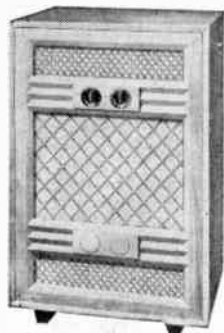
Model T-103 Transformer Assembly, ST-835. Impedances 10,000 and 5,000 ohms, center tapped. For plate or high-impedance line coupling. List Price \$12.00



# Jensen



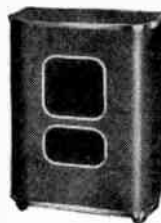
## BASS REFLEX CABINETS



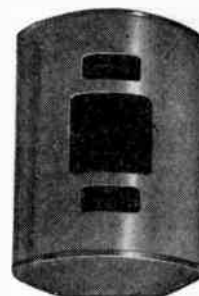
TYPE M



TYPE D



TYPE B



TYPE H

**Type M CUSTOMODE IMPERIAL CABINET** is a distinguished example of fine furniture, embodying the famous Bass Reflex principle, and designed to enclose a 15-inch JENSEN speaker. While intended as a basic unit in the CUSTOMODE line Type M Reproducer cabinet may be used alone as a separate speaker cabinet and its clean, simple lines will harmonize with any room decoration, formal or informal. Available in either Cordovan or Blonde Mahogany, with harmonizing grille fabric. Four concealed cutouts are provided, any two of which may be used for the Bush-type H-F Range and Level Controls. Foot assembly is furnished loose, so that cabinet may be placed on end or side, as required. There is space atop the cabinet for a large receiver, thus making one compact ensemble.

**Type D IMPERIAL CABINET** is handsomely styled, suitable for any environment, and is well constructed of beautifully striped satin finish veneered walnut, with interlaced bronze strip grille over matching fabric. They are available in two sizes: for 15-inch and for 12-inch speakers. For those requiring the modern touch in home decoration, the Imperial Type B cabinet is also offered in an attractive blonde finish.

**Type B UTILITY CABINET** is designed for those who desire inexpensive but durably built enclosures. They are well constructed of impregnated composition board and finished in hammered brown lacquer. Three sizes are available: for 15-inch, 12-inch and 8-inch speakers. Feet, unmounted are furnished.

**Type H SECTOR CABINET** for 8-inch speakers, is especially designed for installations where multiple speakers are required for public entertainment or paging. With front curved to a 14 1/4" radius, they fit anywhere—in corners, on walls, at intersection of ceiling and wall, or on posts. They may be mounted in pairs or clusters for wide-angle sound distribution. They are perfectly adapted to all interior sound installations because of their reasonable price, small size and high-quality performance due to their Bass Reflex design. They are built around a frame of solid wood; with wood composition replacing the usual plywood panels. Finished in brown lacquer, covering colors may be applied to match the locale of the installation. Brackets and screws are furnished for mounting.

Jensen No.	Stock No.	Speaker Size	Finish	DIMENSIONS, Inches			Shipping Weight, Lbs.	List Price
				Height	Width	Depth		
M-252	ST-768	15"	Blonde Mahogany	36	24	18	70	\$89.65*
M-352	ST-788	15"	Cordovan Mahogany	36	24	18	70	89.65*
D-151	ST-157	15"	Regular Walnut	31	27 3/4	18 3/8	50	77.50
D-251	ST-763	15"	Blonde Walnut	31	27 3/4	18 3/8	50	79.50
B-151	ST-743	15"	Brown Lacquer	30 3/4	27 1/4	12 1/4	48	58.00
D-121	ST-156	12"	Regular Walnut	31	27 3/4	18 3/8	50	77.50
D-221	ST-762	12"	Blonde Walnut	31	27 3/4	18 3/8	50	79.50
B-121	ST-742	12"	Brown Lacquer	28 1/2	23 3/4	11 1/8	34	48.95
B-81	ST-741	8"	Brown Lacquer	22 3/4	18	9	24	34.65
H-81	ST-141	8"	Brown Lacquer	22 3/4	17 3/4	8 1/2	14	24.75

\*Net Price.

### NEW JENSEN FREQUENCY RANGE RATING SYSTEM

20,000 CYCLES	JENSEN F.R. RATING	HEARING REFERENCES		TYPICAL USES
		ULTRA HIGH	MUSIC	
3,000 CYCLES	+8 LIM	ULTRA HIGH	AUDIBILITY LIMIT (BEST EARS—TONE TEST)	BROADCAST MONITORING
	+7		NOISE SOUND EFFECTS PERCUSSION INSTRUMENTS	
	+6	HIGH	BEST-EARS } MUSIC MAXIMUM AUDIBLE RANGE (Average Home Conditions)	CUSTOM RADIO-PHONOGRAPH INSTALLATIONS
	+5			
	+4			
	+3			
	+2	MEDIUM	INDUSTRIAL SOUND	
	+1			LOW

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### JENSEN Customode



CUSTOMODE is the JENSEN "building-block" solution for the problem of housing the custom home entertainment system. Shown is only one of countless combinations which may be assembled from a few basic units. Ask for descriptive folder.

Instead of the former practice of stating frequency limits of loudspeakers in cycles, the r-f region between the minimum useful limit for music and maximum limit for hearing has been divided into eight steps, each of which is just distinguishable from the next as an audible difference for music. The rating of a speaker is determined from the highest interval in which loudness is maintained at a significantly high percentage of normal. The table at left relates the ratings to hearing and typical applications.



# Jensen



## IMPEDANCE MATCHING TRANSFORMERS

Loudspeakers are relatively low-impedance devices with voice coil impedance values ranging from 8 to 50 ohms. Vacuum tube power output stages on the other hand, are high-impedance devices with impedance load rated anywhere from 1,000 to 14,000 ohms. To reconcile these widely differing impedances, output or impedance matching transformers must be inserted between the signal output and the loudspeaker voice coil. To determine which transformer is to be used in any given case, first of all find out the impedance of the loudspeaker in question and then locate for that speaker the

transformer which will match nearest the impedance of the signal source. Differences of the order of 10% are usually of no importance but if a close match cannot be obtained, it is best to select an impedance value which will present a higher rather than lower-than-rated impedance to the output tubes. Thus where a 5,000-to-16 ohm transformer is needed, it would be better to select a 6,000-to-16 ohm unit than a 4,000-to-16 ohm unit. For full and complete treatise on impedance matching, consult Jensen Technical Monograph No. 2. (Price 25c).

### ADJUSTABLE IMPEDANCE

**Type "ZX"** For matching conventional "plate" impedance values. Adjustments are easily made with flexible lead and pin-tip jack. Impedance values: voice coil, 4,500, 7,000, 10,000 and 14,000 ohms. All except voice coil are center-tapped for push-pull tubes.

#### Cased Type. Pin-Tip Adjustment. Not Mountable on Speaker.

Stock No.	Core Size	Impedance	Mtg. Ctrs., Inches	Power Watts	For Use With:	List Price
ZX-3000	1x1 1/4"	8	1 1/2 x 3 3/8"	35.0	PLJ-18, PMJ-18, P15-L, P15-LL	\$17.15
ZX-3001	1x1 1/4"	16	1 1/2 x 3 3/8"	35.0	VH-20, VH-24, VR-241, H-510	17.15

#### Uncased Type. Pin-Tip Adjustment. Mountable on Speaker.

ZX-1002	1/2 x 3/4"	8-8	2 3/8"	10.0	P12-T, P10-S, P10-SX, P10-T, P8-R, P8-S, P8-SX, P8-RX, VH-15, VR-11	5.00
ZX-1003	1/2 x 3/4"	6-8	3 1/4"	16.0	P15-Q, P12-P, P12-Q, P12-R, P12-RX, P12-S, P12-SX, P10-Q, P10-R, P10-RX, P8-P, P8-Q, P8-RX, K-210	7.20
ZX-1007	1x1"	8	3 3/4"	25.0	P15-N, P15-NX, P15-P, P12-N, P12-NX	9.75

**Type "ZY"** Same as Type "ZX" except for matching "line" impedance values. Impedances: 500, 1,000, 1,500, 2,000 and voice coil. No center tap available.

#### Cased Type. Pin-Tip Adjustment. Not Mounted on Speaker.

ZY-4000	1x1 1/4"	8	1 1/2 x 3 3/8"	35.0	PLJ-18, PMJ-18, P15-L, P15-LL	\$17.15
ZY-4001	1x1 1/4"	16	1 1/2 x 3 3/8"	35.0	VH-20, VH-24, VR-241, H-510	17.15

#### Type "Z" Pin-Tip Adjustment. Mountable on Speaker.

ZY-2005	1x1"	8	3 3/4"	25.0	P15-N, P15-NX, P15-P, P12-N, P12-NX	9.75
ZY-2003	1/2 x 3/4"	6-8	3 3/4"	16.0	P15-Q, P12-P, P12-Q, P12-R, P12-S, P12-SX, P10-Q, P10-R, P8-P, P8-Q, K-210	7.20
ZY-4004	1/2 x 3/4"	8-4	2 3/8"	10.0	P8-T	5.00
ZY-2002	1/2 x 3/4"	6-8	2 3/8"	10.0	P12-T, P10-S, P10-SX, P10-T, P8-R, P8-S, P8-SX, VH-15, VR-11	5.00
ZY-4002	1/2 x 3/4"	8-4	2 3/8"	6.5	P8-U, P8-V, P6-T, P6-X, P6-V	3.35
ZY-4005	1/2 x 3/4"	6-8	2 3/8"	6.5	VH-91	3.35

**Types "ZP" and "ZL"** Lower priced than "ZX" or "ZY" Types but perfectly satisfactory when used in proper application. Soldering iron required for making adjustments on terminal block.

#### Solder Lug Terminals. Mountable on Speaker.

ZP-1023	1/2 x 3/4"	4500/3-4 7000/3-4 10000/3-4 14000/3-4	2	3.5	P6-X, P5-V, P5-X, P4-X, P5-TX	2.15
ZP-1025	1/2 x 3/4"	1500/3-4 2000/3-4 3500/3-4	2	3.5	P6-X, P5-V, P5-X, P4-X, P5-TX	2.15
ZL-2021	1/2 x 3/4"	500/3-4 1000/3-4 1500/3-4 2000/3-4	2	3.5	P6-X, P5-V, P5-X, P4-X, P5-TX	2.15
*ZP-1024	1/2 x 3/4"	4500/3-4 7000/3-4 10000/3-4 14000/3-4	2 1/2	6.5	P8-U, P8-V, P6-T, P6-TX, P6-V	2.50
*ZP-1026	1/2 x 3/4"	4500/6-8 7000/6-8 10000/6-8 14000/6-8	2 1/2	6.5	VH-91	2.50
ZL-2022	1/2 x 3/4"	500/6-8 1000/6-8 1500/6-8 2000/6-8	2 1/2	6.5	VH-91	2.50

### Type "Z"

### FIXED IMPEDANCE

#### Cased Type, Screw Terminals. Not Mountable on Speaker.

Stock No.	Impedance	For Use With:	List Price
Z-2731	500/16 or 8	PLJ-18, PMJ-18, P15-L, P15-LL, P15-NL, VH-20, VH-24	\$21.40
Z-2732	16/8	PLJ-18, PMJ-18, P15-L, P15-NL, VH-20, VH-24	20.25
Z-2733	16/8	XP-101	12.00

#### Uncased, Pig-tail Leads.

Z-1888	500/6-8		
Z-2386	*3000/6-8		
Z-2387	*5000/6-8		
Z-3341	*6000/6-8	P15-N, P15-NX, P15-P, P12-N, P12-NX, P15-N, P12-N	\$6.00
Z-1891	*10000/6-8		
Z-2241	*14000/6-8		
Z-3346	500/16	VH-20, VH-24, VR-241	6.00
Z-3319	500/6-8		
Z-3320	*3000/6-8		
Z-3321	*5000/6-8		
Z-3318	*6000/6-8		
Z-3322	*10000/6-8		
Z-3323	*14000/6-8		
Z-3329	500/3-4		
Z-3330	*3000/3-4		
Z-3331	*5000/3-4		
Z-3332	*6000/3-4		
Z-3333	*10000/3-4		
Z-3334	*14000/3-4		
Z-3324	500/6-8		
Z-3325	*3000/6-8		
Z-3326	*4500/6-8		
Z-3309	*7000/6-8		
Z-3327	*10000/6-8		
Z-3328	*14000/6-8		

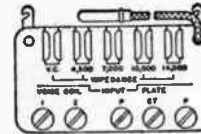
#### Cased Type, Solder Lug Terminals. Not Mountable on Speaker.

Stock No.	Impedance	For Use With:	List Price
Z-3344	500/8 or 4	PMJ-18, P15-L, P15-N, P15-NX	\$13.50
Z-3342	500/16 or 8	P15-N, P15-NX, P15-P, P12-N, P12-NX, VH-20, VH-24, VR-241	10.25
Z-3343	500/8 or 4		10.25

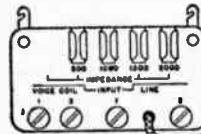
#### Uncased, Mountable on Speaker.

Z-3335	500/3-4		
Z-3336	*3000/3-4		
Z-3337	*4500/3-4		
Z-3338	*7000/3-4	P8-T, P10-S, P8-S, P8-T	2.75
Z-3339	*10000/3-4		
Z-3340	*14000/3-4		
Z-3310	500/3-4		
Z-3311	1500/3-4		
Z-3312	2000/3-4		
Z-3313	2500/3-4		
Z-3314	*4500/3-4	P8-U, P8-V, P6-T, P6-TX, P6-V, P8-W, P6-U	1.80
Z-3315	*7000/3-4		
Z-3316	*10000/3-4		
Z-3317	*14000/3-4		
Z-3345	45-50/6-8	VH-91, VR-11	2.10
Z-3300	500/3-4		
Z-3301	1500/3-4		
Z-3302	2000/3-4		
Z-3303	2500/3-4		
Z-3304	4500/3-4	AP-10, AP-11, AR-10, P6-X, P5-TX, P5-V, P5-X, P4-X, P6-X, P6-W, P5-W, P5-X, F4-X, BK-51	1.80
Z-3305	*7500/3-4		
Z-3306	*10000/3-4		
Z-3307	*12000/3-4		
Z-3308	3-4 grid	All 3-4 ohm V.C. speakers	1.70

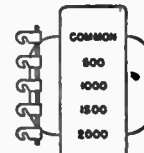
\*Center-tapped



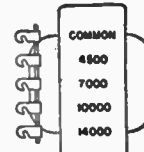
TYPE "ZX"



TYPE "ZY"



TYPE "ZL"



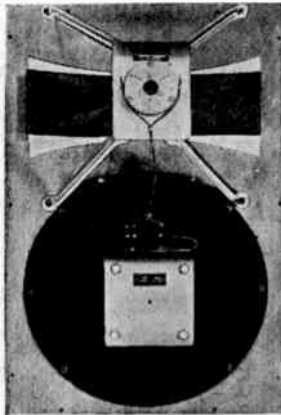
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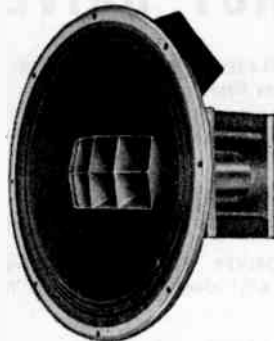
Speaker Systems for

Theater and Home

# SPEAKERS



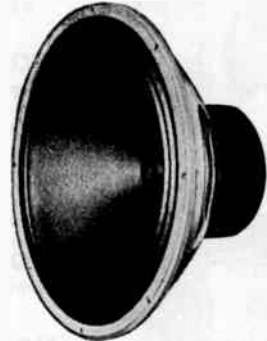
**MODEL 409**



**MODEL 106AX**



**MODEL 102FR**



**MODEL 103LX**

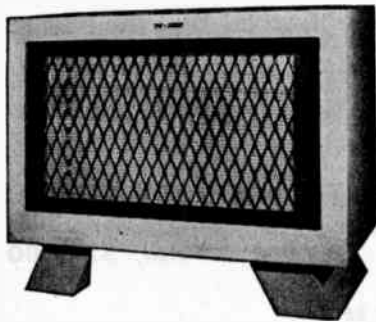
**MODEL 409** 800 CYCLE TWO-WAY SYSTEM. Model 814H 1x4 horn, Model 800X-2 high pass filter network, Model P-52LX low-frequency driver and Model P-15 high-frequency driver. Mounted on flat board baffle. **List Price, \$184.00**

**MODEL 106AX** 15" TWO-WAY COAXIAL SPEAKER. Two voice coils. 6 lb. Alnico V permanent magnet. 16 ohms. **List Price, \$144.00**

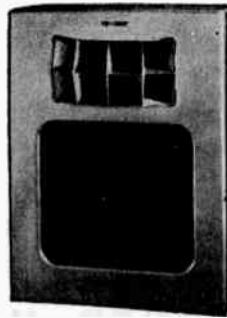
**MODEL 102FR** 15" CO-SPIRAL FULL RANGE SPEAKER. One voice coil. 4 lb. Alnico V permanent magnet, 8 to 16 ohms. **List Price, \$82.00**

**MODEL 103LX** 15" LOW-FREQUENCY DRIVER. 4.2 lb. Alnico V permanent magnet. 41 cycle cone. 8 or 16 ohms (please specify). **List Price, \$80.00**

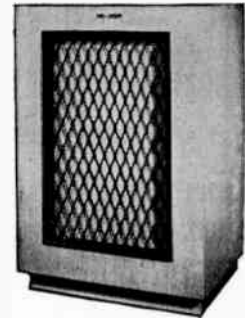
# CABINETS



**MODEL 410**



**MODEL 411**



**MODEL 412**

**MODEL 410** 800 CYCLE TWO-WAY SYSTEM. Model 814H 1x4 horn. Model 800X-2 high pass filter network, Model P-52LX low-frequency driver, and Model P-15 high-frequency driver, mounted in low-boy blonde or mahogany cabinet. **List Price, \$320.00**

**MODEL 411** 800 CYCLE TWO-WAY SYSTEM. Model 824H 2x4 horn, Model 800X crossover, Model P-52LX low-frequency driver and Model P-15 high-frequency driver. Silver hammertone finish or unfinished hardwood cabinet. **List Price, \$282.00**

**MODEL 417** Same as Model 411, except with Model 103LX low-frequency driver and Model 108 high-frequency driver. **List Price, \$310.00**

**MODEL 412** 800 CYCLE TWO-WAY SYSTEM. Contains Model 409 System as described above. Blonde or mahogany cabinet. **List Price, \$296.00**

**MODEL 52** CABINET—Silver hammertone finish or unfinished with wine flocked grille. 3/4" hardwood plywood. 6 cu. ft., 42 cycles, 15" baffle standard. Please specify if 12" required. **List Price, \$54.00**

**MODEL 52-P** PORTABLE CABINET—In black leatherette, with chromium hardware. 15" baffle standard. Please specify if 12" required. **List Price, \$60.00**



**MODEL 52**

## STEPHENS MANUFACTURING CORPORATION



Speaker Systems for

Theater and Home

## HIGH-FREQUENCY DRIVERS



MODEL P-15

**MODEL 107** HY-SON SUPER HIGH-FREQUENCY REPRODUCER SYSTEM for the 3500-20,000 c.p.s. range. 16 ohms. Complete with high pass filter network..... **List Price, \$50.00**

**MODEL P-15** HIGH-FREQUENCY DRIVER. Full 20 watts above 800 c.p.s. 1½ lb. Alnico V permanent magnet. 16 ohms..... **List Price, \$56.00**



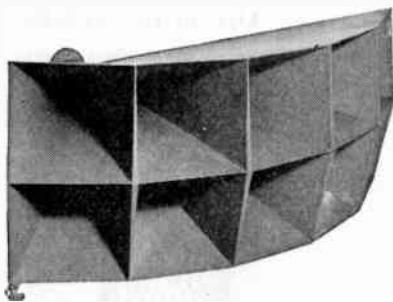
MODEL 108  
MODEL P-30  
MODEL P-40

**MODEL 108** HIGH-FREQUENCY DRIVER. Full 20 watts above 800 c.p.s. 1½ lb. Alnico V permanent magnet. 16 ohms. Dimensions: 3¼" deep x 5" diameter. Weight: 9 lbs... **List Price, \$72.00**

**MODEL P-30** HIGH-FREQUENCY DRIVER. Full 30 watts above 400 c.p.s. 2½ lb. Alnico V permanent magnet. 16 ohms. Dimensions: 6¼" deep x 4" diameter. Weight: 15½ lbs. **List Price, \$108.00**

**MODEL P-40** HIGH-FREQUENCY DRIVER. Full 40 watts above 400 c.p.s. 4½ lb. Alnico V permanent magnet. 16 ohms. Dimensions: 4¾" deep x 7" diameter. Weight: 20 lbs. **List Price, \$160.00**

## STANDARD HORNS



MODEL 625-H

**MODEL 814H** 1x4 HORN. 800 c.p.s. cutoff. Takes Model P-15 or 108 high-frequency driver..... **List Price, \$25.00**

**MODEL 824H** 2x4 HORN. 800 c.p.s. cutoff. Takes Model P-15 or 108 high-frequency driver..... **List Price, \$44.00**

**MODEL 825H** 2x5 HORN. 800 c.p.s. cutoff. Takes Model P-15 or 108 high-frequency driver..... **List Price, \$54.00**

**MODEL 826H** 2x6 HORN. 800 c.p.s. cutoff. Takes Model P-15 or 108 high-frequency driver..... **List Price, \$60.00**

**MODEL 625H** 2x5 HORN. 600 c.p.s. cutoff. Takes Model P-30 or P-40 high-frequency driver..... **List Price, \$88.00**

**MODEL 425H** 2x5 HORN. 400 c.p.s. cutoff. Takes Model P-30 or P-40 high-frequency driver..... **List Price, \$160.00**

**MODEL 436H** 3x6 HORN. 400 c.p.s. cutoff. Y throat to accommodate two Model P-30 or P-40 high-frequency drivers. **List Price, \$272.00**

## CROSSOVER NETWORKS



MODEL 400X

**MODEL 800X** CROSSOVER. 800 c.p.s. 16 ohms input and output. **List Price, \$36.00**

**MODEL 600X** CROSSOVER. 600 c.p.s. 16 ohms input and output. **List Price, \$54.00**

**MODEL 400X** CROSSOVER. 400 c.p.s. 16 ohms input and output. **List Price, \$76.00**

**MODEL 800X-2** HIGH PASS FILTER NETWORK. 800 c.p.s. 16 ohms input and output. **List Price, \$25.00**

*These and additional items in the STEPHENS TRU SONIC line are more completely illustrated and described in company catalog, free on request.*

**STEPHENS MANUFACTURING CORPORATION**



# SPEAKERS

These speakers are engineered and manufactured solely for the replacement field for use in home receivers, auto sets, television sets and intercommunication systems. RMA standard dimensions. Fully dust-proofed. Baked aluminum enamel finish. RMA service guarantee. QUAM UNIVERSAL MOUNTING BRACKET comes with all 3 1/2" to 6 1/2" speakers and may be attached to any two of the FOUR mounting holes in the U shaped pot.



Figure A



Figure B

ED — Electro Dynamic Speakers

PM — Permanent Magnet Speakers

TYPE	CAT. No.	SIZE	FIGURE	FIELD	MAX. WATTS INPUT (approx.)	DIMENSIONS IN INCHES			SHIP. WT., LBS.	LIST PRICE
						C	D	E		
ED	3E45	3 1/2"	A	450 Ohms	2.5	1 1/4	1 7/8	1 1/4	3/4	\$ 4.40
PM	3A07*	3 1/2"	A	.68 oz. Alnico 5	2.5	3/4	1 1/32	1 1/8	1/2	4.00
ED	4E45	4"	A	450 Ohms	3	1 1/4	2	1 7/8	1	4.40
	4E10	4"	A	1000 Ohms	3	1 1/4	2	1 7/8	1	4.40
	4E27	4"	A	2700 Ohms	3	1 1/4	2	1 7/8	1	4.40
PM	4A07*	4"	A	.68 oz. Alnico 5	3	3/4	1 23/32	1 1/8	1/2	4.00
	4A1	4"	A	1.0 oz. Alnico 5	3	1	2 1/8	1 3/8	3/4	4.25
	4A15	4"	A	1.47 oz. Alnico 5	3	1	2 1/8	1 7/8	3/4	4.70
ED	5EV6	5"	B	6 Volt	3.5	1 1/4	2 1/8	1 19/32	1 1/4	4.60
	5E45	5"	B	450 Ohms	3.5	1 1/4	2 1/8	1 19/32	1	4.60
	5E10	5"	B	1000 Ohms	3.5	1 1/4	2 1/8	1 19/32	1	4.60
	5E18	5"	B	1800 Ohms	3.5	1 1/4	2 1/8	1 19/32	1 1/4	4.60
	5E27	5"	B	2700 Ohms	3.5	1 1/4	2 1/8	1 19/32	1	4.60
PM	5A07*	5"	B	.68 oz. Alnico 5	3.5	3/4	1 7/8	1 1/8	3/4	4.20
	5A1	5"	B	1.0 oz. Alnico 5	3.5	1	2 1/8	1 1/8	1	4.45
	5A15	5"	B	1.47 oz. Alnico 5	3.5	1	2 1/8	1 1/8	1	4.85
ED	52EV6	5 1/4"	A	6 Volt	4	1 1/4	2 1/2	1 1/8	1 1/2	5.00
	52E10	5 1/4"	A	1000 Ohms	4	1 1/4	2 1/2	1 1/8	1 1/4	5.00
PM	52A1	5 1/4"	A	1.0 oz. Alnico 5	4	1	2 23/64	1 3/4	1	4.65
	52A21	5 1/4"	A	2.15 oz. Alnico 5	4	1 1/8	2 5/8	1 7/8	1 1/4	5.70
ED	6EV6	6 1/2"	D	6 Volt	5	1 1/4	2 23/32	2 1/32	1 1/2	5.40
	6EHV6	6 1/2"	D	6 Volt	6	1 31/64	2 25/32	2 1/5	1 3/4	6.10
	6E10	6 1/2"	D	1000 Ohms	5	1 1/4	2 23/32	2 1/32	1 1/2	5.40
	6E18	6 1/2"	D	1800 Ohms	5	1 1/4	2 23/32	2 1/32	1 1/2	5.40
	6E25	6 1/2"	D	2500 Ohms	5	1 1/4	2 23/32	2 1/32	1 1/2	5.40
	6E45	6 1/2"	D	450 Ohms	5	1 1/4	2 23/32	2 1/32	1 1/2	5.40
PM	6A1	6 1/2"	D	1.0 oz. Alnico 5	5	1	2 5/8	2	1	4.80
	6A15	6 1/2"	D	1.47 oz. Alnico 5	5	1	2 5/8	2	1	5.20
	6A21	6 1/2"	D	2.15 oz. Alnico 5	5	1 1/8	2 7/8	2 1/8	1 1/4	5.85
	6A31	6 1/2"	D	3.16 oz. Alnico 5	6	1 3/8	3 11/64	2 9/32	1 1/2	6.75
ED	7EV6	7"	D	6 Volt	7	1 9/32	2 3/4	—	2	6.75
	7EV6A	7"	D	6 Volt	7	1 9/32	2 3/4	—	2	6.75
PM	7A21*	7"	D	2.15 oz. Alnico 5	6	7/8	2 21/32	—	1	7.25
	7A31	7"	D	3.16 oz. Alnico 5	9	1 1/4	3 1/32	—	2	8.50
ED	8EV6	8"	D	6 Volt	7	1 1/4	3 9/32	—	1 3/4	6.75
	8E10	8"	D	1000 Ohms	7	1 1/4	3 9/32	—	1 1/2	6.75
	8EH10	8"	D	1000 Ohms	9	1 11/32	3 1/2	—	2 1/4	7.75
	8E18	8"	D	1800 Ohms	7	1 1/4	3 9/32	—	1 3/4	6.75
	8EH18	8"	D	1800 Ohms	9	1 11/32	3 1/2	—	2 1/4	7.75
	8E25	8"	D	2500 Ohms	7	1 1/4	3 9/32	—	1 3/4	6.75
PM	8EH25	8"	D	2500 Ohms	9	1 11/32	3 1/2	—	2 1/4	7.75
	8A21	8"	D	2.15 oz. Alnico 5	7	1 1/8	3 13/32	—	1 1/2	7.20
	8A31	8"	D	3.16 oz. Alnico 5	9	1 3/8	3 21/32	—	2 1/4	8.50

\*Very shallow construction.

3 1/2" speakers — without Adjust-a-Cone suspension.

Voice coil impedance of above speakers is 3.2 ohms ± 10%.

TELEVISION SPEAKERS. The resistances of television speakers are too varied to provide stock replacements. Order the exact field resistance required in these special cases. Such speakers are shipped

48 hours from receipt of order. INTERCOMMUNICATION SPEAKERS requiring special voice coil impedances are supplied within 48 hours from receipt of order at an increase of 25¢ list price.



# SPEAKERS

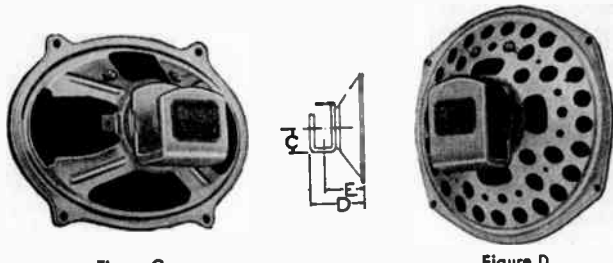


Figure C

Figure D

QUAM speakers have been produced under the same management since 1923 and are used by leading set and sound equipment manufacturers throughout the world. They are nationally advertised, fully protected by patents—their use insures customer satisfaction. QUAM WEATHERPROOFED SPEAKERS are especially designed for OUTDOOR THEATRE installation. Quotations on request.

TYPE	CAT. No.	SIZE	FIGURE	FIELD	MAX. WATTS INPUT (approx.)	DIMENSIONS IN INCHES			SHIP. WT., LBS.	LIST PRICE
						C	D	E		
ED	10E60	10"	B	600 Ohms	10	1 3/4	5 1/8	—	4	\$10.50
	10E10	10"	B	1000 Ohms	10	1 3/4	5 1/8	—	4	10.50
	10E15	10"	B	1500 Ohms	10	1 3/4	5 1/8	—	4	10.50
	10E25	10"	B	2500 Ohms	10	1 3/4	5 1/8	—	4	10.50
PM	10A31	10"	B	3.16 oz. Alnico 5	9	1 3/8	4 1/2	—	2 3/4	10.50
	10A4A	10"	B	4.64 oz Alnico 5	10	1 3/8	4 1/2	—	3 1/4	11.70
	10A6A	10"	B	6.8 oz Alnico 5	12	1 7/8	4 5/8	—	3 1/2	13.60
ED	12E60	12"	B	600 Ohms	12	1 3/4	5 5/8	—	5	12.65
	12E10	12"	B	1000 Ohms	12	1 3/4	5 5/8	—	5	12.65
	12E15	12"	B	1500 Ohms	12	1 3/4	5 5/8	—	5	12.65
	12E25	12"	B	2500 Ohms	12	1 3/4	5 5/8	—	5 1/4	12.65
PM	12A31A	12"	B	3.2 oz. Alnico 5	10	1 1/4	4 19/32	—	3 3/4	11.35
	12A4A	12"	B	4.64 oz. Alnico 5	12	1 3/8	5 1/8	—	4	12.65
	12A6A	12"	B	6.8 oz. Alnico 5	14	1 7/8	5 1/4	—	4 3/4	14.50
ED	46E45	4" x 6"	C	450 Ohms	3.5	1 5/64	2 15/64	1 5/8	1 1/4	5.30
	46E10	4" x 6"	C	1000 Ohms	3.5	1 5/64	2 15/64	1 5/8	1 1/4	5.30
	46E15	4" x 6"	C	1500 Ohms	3.5	1 5/64	2 15/64	1 5/8	1 1/4	5.30
PM	46A07*	4" x 6"	C	.68 oz. Alnico 5	3.5	3/4	1 1 1/8	1 27/64	3/4	4.45
	46A1	4" x 6"	C	1.0 oz. Alnico 5	3.5	1	2 1/4	1 1 1/8	1	4.75
	46A15	4" x 6"	C	1.47 oz. Alnico 5	3.5	1	2 1/4	1 1 1/8	1	5.15
ED	57E45	5" x 7"	C	450 Ohms	5	1 1/4	3 1/64	2 11/32	1 1/2	6.00
	57E10	5" x 7"	C	1000 Ohms	5	1 1/4	3 1/64	2 11/32	1 1/2	6.00
PM	57A1	5" x 7"	C	1.0 oz. Alnico 5	5	1	2 57/64	2 9/32	1	5.40
	57A15	5" x 7"	C	1.47 oz. Alnico 5	5	1	2 57/64	2 9/32	1	5.80
	57A21	5" x 7"	C	2.15 oz. Alnico 5	5	1 1/8	3 1/64	2 13/32	1 1/4	6.45
ED	69E6	6" x 9"	C	6 Volt	8	1	3 1 1/2	—	2	7.50
	69E10	6" x 9"	C	1000 Ohms	8	1	3 1 1/2	—	2	7.50
PM	69A2*	6" x 9"	C	1.4 oz. Alnico 5	8	7/8	2 1 1/8	—	1 1/2	7.50
	69A3	6" x 9"	C	3.2 oz. Alnico 5	10	1 1/4	3 7/8	—	1 3/4	8.95

\*Very shallow construction.

Voice coil impedance of above speakers is 3.2 ohms ± 10 %.

## PUBLIC ADDRESS SPEAKERS

PM	8A4	8"	B	4.64 oz. Alnica 5	12	1 3/8	3 3/4	—	2 1/2	\$10.20
	8A6	8"	B	6.8 oz. Alnica 5	12	1 7/8	3 3/8	—	3	12.10
PM	10A4	10"	B	4.64 oz. Alnico 5	14	1 3/8	4 1/2	—	3 1/4	11.70
	10A6	10"	B	6.8 oz. Alnico 5	14	1 7/8	4 5/8	—	3 1/2	13.60
	10A10	10"	B	10 oz. Alnico 5	20	1 3/8	4 21/64	—	3 1/2	18.00
PM	12A4	12"	B	4.64 oz. Alnico 5	15	1 3/8	5 1/8	—	4	12.65
	12A6	12"	B	6.8 oz. Alnico 5	15	1 7/8	5 1/4	—	4 3/4	14.50
	12A10	12"	B	10 oz. Alnico 5	25	1 3/8	4 1 1/8	—	4 3/4	19.00
PM	12A6CO	12" Co	B	6.8 oz. Alnico 5	14.0	2 1/4	6 1 1/2	—	10	30.00
	15A10CO	15" Co	B	10 oz. Alnico 5	20.0	2 7/8	8 3/8	—	15	47.50

Voice coil impedance of above speakers is 6-8 ohms.

<p><b>QUAM ADJUST-A-CONE SUSPENSION</b></p> <p>While in other speakers, the spider is cemented in place with no means of accurate final adjustment, the QUAM method permits precision centering of the voice coil in a final production operation.</p>	<p><b>QUAM U SHAPED COIL POT</b></p> <p>A patented feature used throughout the QUAM replacement line, provides an unbroken flux path of sufficient cross section to carry the full energy of the magnetic field.</p>
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# The "Coronet" SUPREME HI-FIDELITY SERIES

Pat. Applied For



Never before such quality Hi-Fidelity Wide Range performance for so little money. Surpasses previous single, dual unit or coaxial speakers without the attendant irritation often experienced due to phase and amplitude distortion inherent in the latter type. High level, uniform reproduction.

Advance engineering features include: (1) Stability at low resonance values heretofore unattainable, (2) Resonance and alignment not affected by humidity variations, (3) Strength of cone anulus increased capacity 5 to 10 times. Comparative tests prove that CORONET Series have all desired qualities demanded in wide range Hi-Fidelity speakers . . . and at low cost.

## SPECIFICATIONS

Size and Shape	Model No. or Code	Magnet Data Flux Gauss	Approx. Wt.	Voice Diam-eter	Coil Data Impe-dance	Watts	Over all Depth	List Price
12 1/2" Round	125Z-8	15000	3 lbs.	2"	8 ohms	20	7 3/8	\$75.00
15 1/2" Round	155Z-8	15000	3 lbs.	2"	8 ohms	35	8 5/8	90.00

### SUPER DELUXE HIGH FIDELITY MODELS — Extra Heavy Magnets — With Pot Covers

The Deluxe speakers listed below incorporate many of the same engineering features of the CORONET Series, unexcelled where frequency response of 50 to 12,000 cycles is desired.

10" Round	10WP-8-1	10000	8.0 oz.	1 1/4"	8	11	5	\$25.00
12" Round	12WP-8-1	10000	8.0 oz.	1 1/4"	8	12	5 7/8	27.50
15" Round	15WP-8-1	10000	8.0 oz.	1 1/4"	8	15	8 3/8	35.00

### DELUXE HIGH FIDELITY MODELS — Heavy Magnets — No Pot Covers

6" P.C.	6L-1	10000	3.0 oz.	3/4"	3.2	5	3 1/32	\$10.00
8" Round	8T-8-1	10000	6.0 oz.	1"	8	8	4	15.00
10" Round	10T-8-1	10000	6.0 oz.	1"	8	9	4 13/32	17.50
12" Round	12T-8-1	10000	6.0 oz.	1"	8	10	5 3/8	20.00

### STANDARD HI-FIDELITY DELUXE P.M. SPEAKERS

Extended range for the finest installations requiring ultimate in sound reproduction.

8" Round	80SP-8	8500	4.0 oz.	1"	8.	8-10	4 1/2	\$12.50
10" Round	10SP-8	8500	4.0 oz.	1"	8.	10-13	5	15.00
12" Round	12SP-8	8500	4.0 oz.	1"	8.	12-15	5 7/8	17.50



## ELECTRO MAGNET DYNAMIC SPEAKERS

Precision wound, high efficiency field coils and precision engineered hum bucking circuits make Permoflux Electro Magnet Dynamic Speakers the outstanding leaders in electro dynamic sound reproduction.

Size and Shape	Model No. or Code	Field Resistance	Coil Data Watts	Voice Diam-eter	Coil Data Impe-dance	Watts	Over-all Depth	List Price
4" TV Square	407	60	4	9/16"	3.2	2-4	2 3/8	\$ 5.00
	408	100	4	9/16"	3.2	2-4	2 3/8	5.00
	401	450	4	9/16"	3.2	2-4	2 9/32	5.00
4x6" Ellip. TV	4607	60	4	9/16"	3.2	2-4	2 9/16	5.75
	4608	100	4	9/16"	3.2	2-4	2 9/16	5.75
5" TV	4507	60	4	9/16"	3.2	2-4	2 7/16	5.25
	4508	100	4	9/16"	3.2	2-4	2 7/16	5.25
	4501	450	4	9/16"	3.2	2-4	2 7/16	5.25
	4502	1000	4	9/16"	3.2	2-4	2 7/16	5.25
	4504	1800	4	9/16"	3.2	2-4	2 7/16	5.25
6" Round	601	450	4	9/16"	3.2	3-6	2 27/32	5.75
	602	1000	4	9/16"	3.2	3-6	2 27/32	5.75
	604	1800	4	9/16"	3.2	3-6	2 27/32	5.75
10" Round	1049	600	10	1"	3.2	9-12	4 17/32	11.00
	1042	1000	10	1"	3.2	9-12	4 17/32	11.00
12" Round	1249	600	10	1"	3.2	10-15	5 3/32	13.00
	1242	1000	10	1"	3.2	10-15	5 3/32	13.00

FOR AUTO RADIO SPEAKERS SEE OTHER SIDE IN PM SPECIFICATIONS





# PERMANENT MAGNET DYNAMIC SPEAKERS

... with Powerful ALNICO 5 Magnets ...

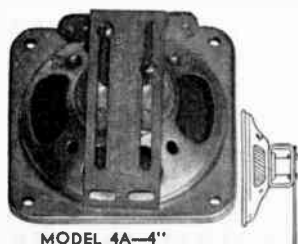
Like all Permotlux electronic and acoustical products, Permotlux PM Speakers, with their powerful, light weight Alnico 5 Magnets, are engineered to the highest performance standards. Their over-all sensitivity, wide frequency response and rugged mechanical design make them favorites wherever fidelity of

tone is an important consideration. Because of modern and efficient manufacturing methods and quality control systems which assure remarkable uniformity in production, Permotlux Speakers attain the performance originally engineered into them. The years of development experience behind the perfection achieved in Permotlux Speakers assures the finest sound reproduction in every application.

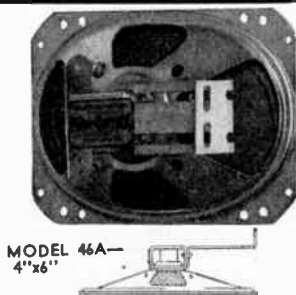
## S P E C I F I C A T I O N S

Size and Shape	Model No. or Code	Magnet Data Flux† Gauss	Data Approx. Wt. oz.	Diam-eter	Voice Coil Data Impedance Ohms	Watts	Over- all Depth	List Price
2 1/2" Square	*25A	6000	.5	9/16"	3.2	1-2	1 7/16	\$ 4.00
	*25C	9000	1.5	9/16"	3.2	1-2	1 7/8	4.75
3" Square	*3A	6000	.5	9/16"	3.2	1-2	1 1/2	4.00
	*3C	9000	1.5	9/16"	3.2	1-2	1 29/32	4.75
3 1/2" Square	*32A	6000	.5	9/16"	3.2	2-4	1 3/4	4.00
	*32C	9000	1.5	9/16"	3.2	2-4	2	4.75
4" Square	*4A	6000	.5	9/16"	3.2	2-4	1 25/32	4.00
	*4C	9000	1.5	9/16"	3.2	2-4	2 3/16	4.75
	Intercom. Weatherproof	*4A1	6000	.5	9/16"	45 ohm	1 25/32	5.00
	*4CW	9000	1.5	9/16"	3.2	2-4	2 3/16	5.50
4x6" Ellip.	*46A	6000	.5	9/16"	3.2	2-4	1 7/8	4.75
	*46C	9000	1.5	9/16"	3.2	2-4	2 9/32	5.50
5" P.C.	*45A	6000	.5	9/16"	3.2	2-4	1 9/32	4.25
	*45C	9000	1.5	9/16"	3.2	2-4	2 5/16	5.00
	Intercom. Weatherproof	*45A1	6000	.5	9/16"	45 ohm	1 9/32	5.25
	*45CW	9000	1.5	9/16"	3.2	2-4	2 5/16	5.75
5" Round	*45AR	6000	.5	9/16"	3.2	2-4	2	4.25
	*45CR	9000	1.5	9/16"	3.2	2-4	2 1/4	5.00
5 1/4" Square Auto	*52A	6000	.5	9/16"	3.2	3-5	2 3/16	4.75
	*52C	9000	1.5	9/16"	3.2	3-5	2 15/32	5.25
	*52K	8500	2.0	3/4"	3.2	4-6	2 1/2	6.00
5x7" Ellip. Auto	57C	9000	1.5	9/16"	3.2	4-6	2 15/32	5.75
	57K	8500	2.0	3/4"	3.2	5-7	3	7.00
	*57KA	8500	2.0	3/4"	3.2	5-7	3	7.00
6" P.C. Auto	*6A	6000	.5	9/16"	3.2	4-6	2 3/8	4.75
	*6C	9000	1.5	9/16"	3.2	4-6	2 23/32	5.50
	*6K	8500	2.0	3/4"	3.2	5-7	2 3/4	6.25
6x9" Ellip. Auto	69K	8500	2.0	3/4"	3.2	5-7	3 15/32	7.50
	*69KA	8500	2.0	3/4"	3.2	5-7	3 15/32	7.50
7" P.C. Auto Auto	7K	8500	2.0	3/4"	3.2	6-8	3 3/16	7.00
	*7KA	8500	2.0	3/4"	3.2	6-8	3 3/16	7.00
8" P.C. Auto	75K	8500	2.0	3/4"	3.2	6-8	3 1/32	7.50
	75L	10000	3.0	3/4"	3.2	6-8	3 5/16	8.25
	75S	8500	4.0	1"	3.2	7-9	3 13/16	10.00
10" Round	10L	10000	3.0	3/4"	3.2	8-10	4 5/16	9.75
	10S	8500	4.0	1"	3.2	9-12	4 17/32	12.50
12" Round	12L	10000	3.0	3/4"	3.2	9-12	5 3/32	11.50
	12S	8500	4.0	1"	3.2	10-15	5 3/32	14.00

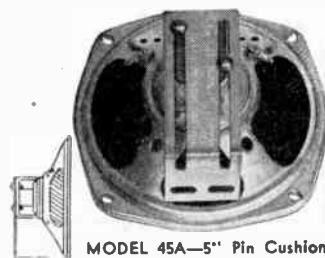
NOTE . . . † The efficiency or sensitivity of a speaker is proportional to the flux density provided by the magnet. When the voice coil diameter is increased to provide greater watts power handling capacity, a larger magnet is required to give same flux density.  
\* Equipped with Universal Mounting Brackets which simplifies installation in all radio and television sets. (shown below)  
\*\* Pot Rotated 90°.



MODEL 4A-4"



MODEL 46A-4"x6"



MODEL 45A-5" Pin Cushion

# RACON

## Speakers Horn Units Horns



### RE-ENTRANT TRUMPETS



RE-35 RE-50 RE-60

A compact trumpet of the double re-entrant type, made to occupy a small space, yet having a long air column and delivering highly concentrated sound with the greatest efficiency over long distances. RACON RE-ENTRANT TRUMPETS have base and inside tone arm made of aluminum castings, outside bell of heavy gauge aluminum spinning; RE-35, RE-50, RE-60 have center of RACON ACOUSTIC material to prevent resonant effects prevalent in all large reflecting surfaces. Sturdy construction makes them practi-

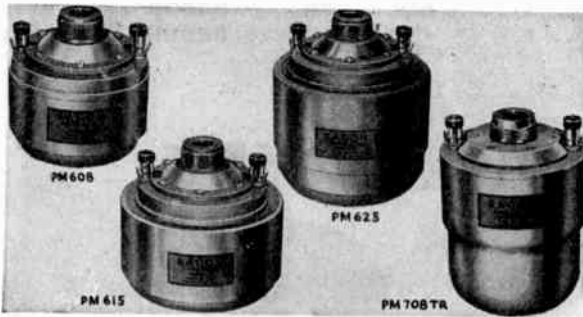
cally abuse-proof. Supplied with U-bracket mounting (ratchet swivel type on request). RE-60 and RE-50 have wide band frequency characteristics suitable for best musical reproduction. RE-35 and RE-25 most suitable for incidental music and speech. All have high degree of intelligibility and are excellent for indoor or outdoor use. Recommended for chime systems, recreation centres, sound trucks, railroad and bus terminals, arenas, camps, and noisy factories where there is a high noise level to be overridden.

Model No.	Acoustic Length	Bell Diam.	Over-all Length	Cut-off (cycles)	Distrib. Angle	Ship. Wt., lb.	Code	List Price
RE-60	6"	26"	28"	112	45°	21	REMOL	\$66.00
RE-50	4 1/2"	25 1/4"	23 1/2"	140	50°	19	REMOY	45.00
RE-35	8 1/2"	19"	16 1/4"	175	55°	12 1/2	REMOX	32.50
RE-25	2 1/2"	13 1/4"	11"	225	60°	9	REMOD	25.00

### Waterproof Permanent Magnet Driver Units

The driver unit is the most important single element in a successful public address system. In these four new driver units, primary emphasis is on: high continuous power handling capacity with ample reserve for overload peaks up to 100%, maximum conversion

efficiency, response ranges suitable for every type sound system, and waterproof construction.



These four units employ Alnico V magnets and Armco magnetic iron throughout. All soft steel parts are doubly plated to prevent corrosion. An automatic electromagnetic cut-out switch is used in the magnetizing process, assuring maximum flux density in the gap and high uniformity. Units are individually measured for flux density. Each unit is tested with special equipment for power handling capacity as well as a 350-volt ground test.

Long life plastic diaphragms and formers are supplied with aluminum wound voice coils to increase efficiency. Voice coil leads are the non-fatiguing feather-weight metal type insuring lifetime performance. All units are completely waterproof, yet permit ready replacement of diaphragm where needed.

### NEW SUPER X UNITS USING LATEST ALNICO V MAGNETS

Model No.	Weight		Flux Density per sq. cm.	Frequency Range	Imp.	Diam.	Ht.	Thread	Capacity (watts)		Code	List Price
	Net	Ship.							Peak	Operating		
PM-623	8 1/2 lb.	9 1/2 lb.	15,500 gaussess	80-7000	15	5 1/4"	4 1/4"	1 3/8 x 18	65	35	RETIX	\$50.00
PM-615	8 lb.	9 lb.	13,500 gaussess	90-7000	15	4 3/4"	4 1/2"	1 7/8 x 18	60	30	RETIN	35.00
PM-608	5 lb.	5 1/2 lb.	11,000 gaussess	90-6500	15	4"	3 3/4"	1 3/8 x 18	50	25	RETIP	25.00
PM-708TR*	6 lb.	6 1/2 lb.	11,000 gaussess	90-6500	15	4 1/2"	5 1/2"	1 3/8 x 18	50	25	RETIR	37.50

\*NOTE: Contains built-in 25-watt line-matching transformer, primary tapped at 500, 1000, 1500, 2000; secondary 15 ohms.

### HIGH EFFICIENCY LINE MATCHING TRANSFORMERS

A series of transformers designed to have wide band frequency transmission with minimum loss. Small in size yet able to handle necessary power requirements. All Models vacuum impregnated.

Model No.	Type	Capacity	Impedance		Code	List Price
			Primary	Secondary		
TR10S	Strapped	10 watt	500 ohm	8, 15	RANFO	\$2.85
TR10SV	Strapped	10 watt	250, 500, 1000, 2500	8, 15	RANFT	3.15
TR15C	Cased	15 watt	500 ohm	8, 15	RASHO	5.00
TR25S	Strapped	25 watt	500 ohm	8, 15	RANGO	4.35
TR25SV	Strapped	25 watt	250, 500, 1000, 2500	8, 15	RANGT	4.80

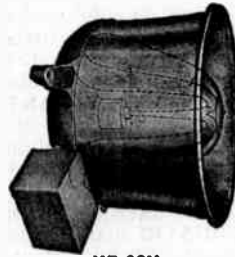
# RACON

## Speakers Horn Units Horns

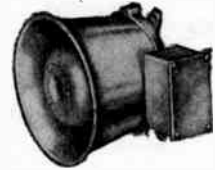


### DOUBLE RE-ENTRANT MARINE SPEAKERS

A highly efficient double re-entrant type of loud-speaker. The Regular (Model MR-30M), Midget (Model MG-21J) and Miniature (Model MN-15B) Marine speakers are approved by the U. S. Coast Guard for all Emergency Loudspeaker Systems on ships, under the 53rd Supplement of the Bureau, after tests made by the Bureau of Standards, Washington, D. C. These Marine Speakers are used both as Loudspeakers and as Microphones. The driver unit and connections are all enclosed, making a completely waterproof speaker not affected by temperature or weather, including use at sea. Made from heavy aluminum spinings. Back base is a heavy, special non-corrosive aluminum casting; baked chromatic undercoat finish plus outside lacquer finish. Uses latest type of driver units. Supplied for three-legged flush type rear mounting. All speakers have waterproof boxes for interior mounting of transformers. Can be used where space is limited, on board ship, on deck,



MR-30M



MG-21J

interior or pilot house, rail and bus terminals, in locomotives, railroad yards location where police and fire cars, paging systems or any high noise levels are to be overridden. MN-15B supplied with "U" bracket. "U" brackets for other models on request at slight additional cost.

Model No.	Frequency Distribution Range	Angle	Bell Diam.	Capacity (watts) Operating Peak	Imp.	Number Driver Units	Over-all Length	Ship. Wt., lb.	Code	List Price
MR-30-M	250-6000	50°	14"	30 60	15	1	10"	29 1/4	REDIX	\$130.00
MR-32M	250-6000	50°	14"	60 120	8	2	18 1/2"	43	REDIT	185.00
MG-21J	350-6000	55°	9 1/2"	25 50	15	1	6 3/4"	14	RASOM	55.00
MG-21-B	350-6000	55°	9 1/2"	20 35	15	1	6 3/4"	9 1/2	RASOB	40.00
MN-15B	450-6000	65°	6 1/4"	20 35	15*	1	4 3/4"	6 3/4	REDUP	34.00

\*8 or 45 ohms on request at no increase in price.

### RE-ENTRANT PAGING SPEAKERS



RE-15 RE-12



DW-9R

A compact type of double re-entrant speaker to fit all types of paging applications. Heavy cast aluminum ratchet wall type mounting. Extremely efficient. Will override high noise levels. Mechanically constructed to be non-resonant so as to transmit all sound through the mouth. Model DW-9R is supplied with a flanged rim for flush mounting. Can be used indoors or out-

doors. Excellent sound energy coverage as well as wide angle pick-up when used for "talkback" from distances unobtainable with microphones. Designed for use where space is limited, but high noise levels are present. Rail and bus stations, on trains, in locomotives, on docks, on police and fire cars, for intercom systems in schools, hospitals, offices and factories.

Model No.	Frequency Range	Distribution Angle	Capacity Opertg.	Nominal Imp.	Type Mounting	Bell Diam.	Over-all Length	Ship. Wt., lb.	Code	List Price
RE-15	350- 8,500	60°	20 watts	*15 ohms	Swivel Ratchet & Bracket	9"	9 3/4"	6	REMAC	\$34.00
RE-12	450-10,000	65°	10 watts	*15 ohms	Swivel Ratchet & Bracket	7"	6 1/2"	3 1/4	REMAB	26.00
DW-9R	750-10,000	70°	8 watts	*15 ohms	Flush Mounting	5"	2 1/2"	2	REDOX	27.50

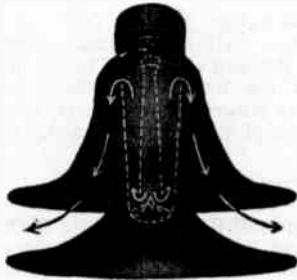
\*8 or 45 ohms on request at same price.

# RACON

## Speakers Horn Units Horns



### RADIAL RE-ENTRANT HORNS & SPEAKERS



SR-35R  
SR-60R



SR-15R  
SR-12R

A weatherproof double re-entrant type horn and speaker designed to project sound over a complete circumference of 360°. These are constructed to be non-resonant and in models SR-35R and SR-60R the centre reflecting surface is of Racon Patented Acoustic Material. The deflectors are aluminum covered with this same material.

The two larger models can be used for the reproduction of music and speech and all models can be used for announcing and paging. The SR-60R is ideal for reproduction of church chimes.

Models SR-35R and SR-60R employ a standard thread and may be used with any Racon driver unit. Models SR-15 and SR-12R are supplied complete with 15-ohm built-in driver unit.\*\*

Model No.	Acoustio Length	Width	Length	Cut-off (cycles)	Shp. Weight	Mounting	Code	List Price
*SR-60R	6 1/4"	36"	34 1/2"	115	47 lb.	U-Bracket	RADAL	\$85.00
*SR-35R	4"	17"	16"	175	16 lb.	U-Bracket	RADAK	45.00
SR-15R	20"	12"	12"	350	7 lb.	Swivel Ratchet & Wall Bracket	RADAS	36.50
SR-12R	15"	9"	9"	450	4 lb.	Swivel Ratchet & Wall Bracket	RADAB	28.50

\*Re-entrant horn only.  
\*\*8 or 45 ohms on request at same price.

### CONE SPEAKER ENCLOSURES

#### PROJECTOR TYPE



CP-12A

Efficient, rugged, suitable for indoor and outdoor use. All projects have steel back enclosures and waterproof overlap. Provided with two offset mounting hooks.

Model No.	Cone Size	Bell Diam.	Length	Shp. Wt.	Description	Code	List Price
CP-8A	8"	15"	16"	6 lb.	Aluminum Bell; Steel Back	RUMIX	\$12.00
CP-8AW	8"	15"	15"	6 lb.	Aluminum Bell; Steel Back acoustically damped; cone opening protected by wire screening and silk gauze	RIFLE	13.25
CP-12A	12"	17"	20"	8 lb.	Aluminum Bell; Steel Back	RUMID	14.50
CP-12AW	12"	17"	20"	8 lb.	Aluminum Bell; Steel Back acoustically damped; cone opening protected by wire screening and silk gauze	ROBOT	16.50

#### RADIAL TYPE



CR-6 CR-12

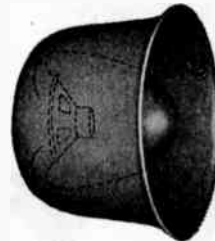
Speaker is designed to project sound over a complete circumference of 360 degrees, distributing the sound with even intensity and emphasizing the high frequency response lacking in direct cone speakers. Particularly adapted for use in factories and in auditoriums where complete coverage is desired. Can be camouflaged to blend with ceiling architecture.

IN ALL RACON RADIAL CONE HOUSINGS the upper deflector is made of heavy gauge steel, back cone cover of steel, and lower deflector of RACON ACOUSTIC material to prevent resonant effects prevalent in all metal reflecting surfaces. Stormproofed for all weather conditions. These cone housings are furnished without speakers.

Model No.	Cone Size	Bell Diam.	Depth	Shp. Weight	Code	List Price
CR-12	12" or 10"	31"	14"	42 lb.	RADAG	\$31.00
CR-6	6" or 5"	17"	7"	14 lb.	RADAC	11.50

(Specify size of cone speaker to be installed.)

#### MARINE TYPE



CM-5 CM-8 CM-12

A re-entrant speaker housing of the Marine type for cone operation. Owing to construction this housing can be used outdoors, as well, in all weather and temperatures without damage. Cone diaphragm is protected not only from direct contact of rain, but also from physical damage. Can be used for voice or music reproduction.

IN ALL RACON CONE MARINE SPEAKER HOUSINGS bell is made of heavy gauge aluminum; cone mounting is made of aluminum casting; centre bullet is made of Patented RACON ACOUSTIC material to prevent resonant effects. Material is stormproofed for all weather conditions. Housings are supplied without Cone Speakers.

Model No.	Cone Size	Bell Diam.	Depth	Shp. Weight	Code	List Price
CM-12	12"	24"	15"	10 lb.	RELIM	\$40.50
CM-8	8"	17 1/4"	11 1/2"	4 1/2 lb.	REFIM	21.50
CM-5	5"	10 1/2"	8 1/2"	2 1/4 lb.	REKIM	12.00

# RACON

## Speakers Horn Units Horns



### STRAIGHT TRUMPETS



DT-423  
DT-424  
DT-425  
DT-427

QT-444

ST-414  
ST-415  
ST-417

The most efficient horns obtainable. Output from any straight trumpet is approximately 2 DB higher than corresponding re-entrant type with the same input. This is because straight trumpets lack the attenuation from resistance and reflection which is inherent in all re-entrant horns. Will override extremely high noise level, indoors or outdoors.

"Stormproof" Trumpets are made of Racon Acoustic Cloth processed by a patented method which gives a non-vibratory wall, thereby increasing the output of the horn without loss due to wall vibration. Weather-treated for indoor or outdoor use for years of foolproof service.

"All Aluminum" Trumpets are made of heavy gauge aluminum spinning with rolled beaded edge and cast aluminum throat sections.

"Unbreakable" Trumpets are made of heavy gauge aluminum spinning reinforced and damped with Patented Racon Acoustic Material to prevent wall vibration.

Larger sizes are useful for chime systems, airports, stadiums, parks, playgrounds, music festivals, for both excellent speech and music. Smaller sizes for railroad and bus terminals, waiting rooms, factories.

Model No.	Air Column (length)	Units Required	Cut-off (cycles)	Distribution Angle	Bell Diam.	Material	Ship. Weight	Code	List Price
*ST-415A	6'	1	115	45°	30"	Unbreakable	37 lb.	REGON	\$121.00
*DT-425A	6'	2	115	50°	30"	Unbreakable	39 lb.	REGAY	129.50
*QT-444A	6'	4	115	50°	30"	Unbreakable	46 lb.	RECUR	200.00
**ST-414A	6'	1	115	45°	30"	Stormproof	39 lb.	RIDER	95.00
**DT-424A	6'	2	115	50°	30"	Stormproof	41 lb.	RYDOX	103.50
*ST-417A	6'	1	115	45°	30"	All Aluminum	35 lb.	RHINO	87.50
*DT-427A	6'	2	115	50°	30"	All Aluminum	37 lb.	RHOMB	96.00
**ST-412A	4½'	1	145	50°	25"	Stormproof	34 lb.	RACEY	71.00
*ST-413A	4½'	1	145	50°	25"	All Aluminum	27 lb.	RIANT	65.00
*DT-423A	4½'	2	145	55°	25"	All Aluminum	32 lb.	RIBES	73.50
**ST-411A	3½'	1	195	50°	22"	Stormproof	28 lb.	RENEW	50.00
*ST-410A	3½'	1	195	50°	22"	All Aluminum	23 lb.	REPEX	35.00
**ST-251A	2'	1	250	55°	12"	Stormproof	6 lb.	RISAT	17.50
**ST-251B	2'	1	250	55°	12"	All Aluminum	5 lb.	RIMAD	16.50

\*Delivery, 4 weeks.

\*Delivery, 1-2 weeks.

### ACCESSORIES



DC-302A



DC-2U

#### MULTIPLE HORN AND UNIT CONNECTORS

Model No.	Description	Material	Code	List
DC-302A	2 St. Trumpet Connector 75° Dispersion Angle	Bronze	RADIX	\$17.00
DC-2U	Dual Unit Connector for all standard thread horns to permit the use of two driver units on one horn	Bronze	RADAX	15.00



RB-150A



TB-150

#### Steel Swivel Brackets for Cone Projectors

For wall or truck mounting. Has tooth ratchet swivel and pipe connection to give 180° angular movement. Can be used on any Racon Cone Projector.

Model No.	Description	Cone Size	Code	List Price
RB-150	Without Base	8" or 12"	RAMIS	\$3.50
RB-150A	With Base	8" or 12"	RAMIT	5.00

#### Bronze Swivel Bracket for Re-entrant Trumpets

A cast bronze three-legged base and ratchet connection. May be used when specifying ratchet mounted trumpets. Over-all height 9".

Model No.	Code	List Price
TB-150	RAMUG	\$6.00

# RACON

## Speakers Horn Units Horns



CHU-2

### CELLULAR HORN TWEETERS

Model CHU-2 tweeter provides an economical and effective method of extending the range of conventional cone speakers. When used in conjunction with any well-designed 12"-15" cone speaker, a uniform response range is provided, from the lowest frequency of the cone to the limits of present-day program material. Response is essentially flat to 12,000 cycles, with excellent usable output to 15,000 cycles. Cellular horn design permits wide angle distribution. Designed for a 1000-cycle crossover to assure maximum low frequency cone response by reducing intermodulation distortion and cone "breakup." The CHU-2 must be used with a crossover network for optimum performance. The networks listed below are recommended and when employed, tweeter model CHU-2 may be used with amplifiers having an output rating to 25-30 watts.

**NOTE:** Instructions are packed with each tweeter, providing an easy method of home building a professional type 1000-cycle crossover network.

Model No.	Impedance	Freq. Range	Dispersion Angle Horizontal Vertical	Material	Code	List Price
CHU-2	15 Ohms	750-15000	100° 50°	Aluminum Casting	RALUX	\$37.50



CON-20

### CROSSOVER NETWORKS

Both models CON-20 and CON-15R have a crossover of 1000 cycles. Cone speaker impedance may vary from 4-15 ohms.



CON-15R

Model No.	Description	Ship. Wt.	Code	List Price
CON-15R	Variable Audio Taper Resistor Capacitor Network	2 1/2 lb.	RAFIR	\$11.00
CON-20	Variable Audio Taper Resistor Capacitor Inductive Network	3 1/2 lb.	RADUX	22.50

### NEW! RACON MICROPHONE STANDS

All floor models have heavy cast iron base finished in black crinkle. All tubing of brass with heavy wall thickness and burnished chromium plated finish. Uses 5/8" inner tubing and 3/4" outer tubing. Table and banquet models use loaded heavy spun steel bases with special turned-in beading—will not scratch the finest polished table top.

### RACON LATEST IMPROVED CLUTCH ACTION

A TOUCH to move the extension tubing up or down. Set in any position. No slipping, no wearing of fibre bushings, no turning and tightening of clutches, no turning of thumb screws to hold position of mike.

Special Improved Clutch supplied as part of mike stand or supplied as extra part to be added to old or new microphone stand to convert to latest type; merely remove old clutch arrangement and screw latest device to outer tubing for permanent adjustment.



Model No. FS-10-12



Model No. TS-20



Model No. FS-8-10



Model No. SC-3

Model No.	Base	Clutch	Type	Height Adjustment	Ship. Weight	Code	List Price
FS-10-12	12"	Standard	Adjustable Floor	35"-65"	14 lbs.	REFAL	\$11.00
FS-10-12S	12"	*Special	Adjustable Floor	35"-65"	14 lbs.	REFAX	13.50
FS- 8-10	10"	Standard	Adjustable Floor	36"-66"	12 lbs.	RINAL	10.00
FS- 8-10S	10"	*Special	Adjustable Floor	36"-66"	12 lbs.	RINAX	12.50
BS-40	7 1/2"	Standard	Adjustable Banquet	19"-32"	3 lbs.	RIBET	7.00
TS-20	5 1/2"	Standard	Adjustable Table	7"-10"	1 1/2 lbs.	RODAT	5.00
TS-18	5 1/2"		Fixed Table	7"	1 1/2 lbs.	RODAS	3.25
SC-3		Special Clutch, threaded to fit standard 3/8"-27 threaded tubing		3"		RECAx	3.50

\* RACON LATEST IMPROVED CLUTCH ACTION.

*Thank You!*

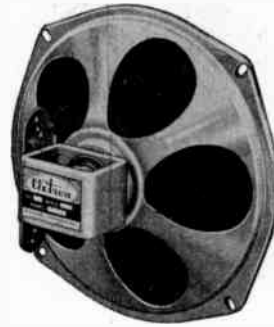
When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

*RADIO'S MASTER*

# ALUMINUM VOICE COILS ASSURE HIGH FIDELITY



PM-8E



PM-6E



PM-46B

## ALNICO V PERMANENT MAGNET SPEAKERS

SIZE INCHES	CATALOG NUMBER	MAGNET WEIGHT OUNCES	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
<b>STANDARD GROUP</b>							
3	PM-3A	.68	3.2 ohms $\frac{9}{16}$ "	2-4	$2\frac{13}{16} \times 2\frac{13}{16}$	$1\frac{23}{32}$	\$ 3.65
4	PM-4A	.68	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$1\frac{7}{8}$	3.85
4	PM-4B	1.00	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$2\frac{1}{16}$	4.10
4	PM-4C	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$2\frac{1}{16}$	4.50
5	PM-5A	.68	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$2\frac{5}{32}$	4.10
5	PM-5B	1.00	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$2\frac{11}{32}$	4.35
5	PM-5C	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{16} \times 3\frac{5}{16}$	$2\frac{11}{32}$	4.75
6	PM-6B	1.00	3.2 ohms $\frac{9}{16}$ "	2-4	$4\frac{3}{8} \times 4\frac{3}{8}$	$2\frac{21}{32}$	4.75
6	PM-6C	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	$4\frac{3}{8} \times 4\frac{3}{8}$	$2\frac{21}{32}$	5.10
6	PM-6E	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{3}{8} \times 4\frac{3}{8}$	$2\frac{15}{16}$	5.75
6	PM-6F	3.16	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{3}{8} \times 4\frac{3}{8}$	$2\frac{15}{16}$	6.75
8	PM-8D	1.47	3.2 ohms $\frac{3}{4}$ "	4-9	$5\frac{7}{16} \times 5\frac{7}{16}$	$3\frac{3}{16}$	6.85
8	PM-8E	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$5\frac{7}{16} \times 5\frac{7}{16}$	$3\frac{3}{16}$	7.10
8	PM-8F	3.16	3.2 ohms $\frac{3}{4}$ "	4-9	$5\frac{7}{16} \times 5\frac{7}{16}$	$3\frac{3}{16}$	8.25
10	PM-10G	3.16	3.2 ohms 1"	6-12	$6\frac{13}{16} \times 6\frac{13}{16}$	$4\frac{1}{8}$	10.25
10	PM-10H	4.64	3.2 ohms 1"	6-12	$6\frac{13}{16} \times 6\frac{13}{16}$	$4\frac{5}{8}$	12.50
12	PM-12G	3.16	3.2 ohms 1"	6-12	$8\frac{1}{4} \times 8\frac{1}{4}$	$4\frac{7}{8}$	11.50
12	PM-12H	4.64	3.2 ohms 1"	6-12	$8\frac{1}{4} \times 8\frac{1}{4}$	$5\frac{3}{8}$	13.75
<b>PUBLIC ADDRESS GROUP</b>							
8	PM-8J	6.80	8 ohms 1"	6-12	$5\frac{7}{16} \times 5\frac{7}{16}$	$4\frac{3}{8}$	12.00
8	PM-8L	10.00	8 ohms $1\frac{1}{4}$ "	12-20	$5\frac{7}{16} \times 5\frac{7}{16}$	$4\frac{3}{8}$	14.75
10	PM-10J	6.80	8 ohms 1"	6-12	$6\frac{13}{16} \times 6\frac{13}{16}$	$4\frac{5}{8}$	15.00
10	PM-10L	10.00	8 ohms $1\frac{1}{4}$ "	12-20	$6\frac{13}{16} \times 6\frac{13}{16}$	$4\frac{5}{8}$	17.75
12	PM-12J	6.80	8 ohms 1"	6-12	$8\frac{1}{4} \times 8\frac{1}{4}$	$7\frac{3}{4}$	16.00
12	PM-12L	10.00	8 ohms $1\frac{1}{4}$ "	12-20	$8\frac{1}{4} \times 8\frac{1}{4}$	$7\frac{3}{4}$	19.75
12	PM-12M	14.70	8 ohms $1\frac{1}{4}$ "	15-25	$8\frac{1}{4} \times 8\frac{1}{4}$	$7\frac{3}{4}$	27.50
12	PM-12P	21.50	8 ohms $1\frac{1}{2}$ "	20-30	$8\frac{1}{4} \times 8\frac{1}{4}$	$7\frac{3}{4}$	37.50
15	PM-15P	21.50	8 ohms $1\frac{1}{2}$ "	20-30	$10\frac{1}{4} \times 10\frac{1}{4}$	$8\frac{7}{8}$	45.00
<b>OVAL GROUP</b>							
4 x 6	PM-46B	1.00	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{8} \times 4\frac{5}{8}$	$2\frac{7}{32}$	4.65
4 x 6	PM-46C	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	$3\frac{5}{8} \times 4\frac{5}{8}$	$2\frac{7}{32}$	5.05
5 x 7	PM-57C	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	$4\frac{11}{32} \times 4\frac{11}{32}$	$2\frac{7}{8}$	5.65
5 x 7	PM-57E	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{11}{32} \times 4\frac{11}{32}$	$3\frac{1}{4}$	6.75
5 x 7	PM-57F	3.16	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{11}{32} \times 4\frac{11}{32}$	$3\frac{1}{4}$	7.75
6 x 9	PM-69D	1.47	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{7}{8} \times 6\frac{9}{16}$	$3\frac{9}{16}$	6.95
6 x 9	PM-69E	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{7}{8} \times 6\frac{9}{16}$	$3\frac{9}{16}$	7.85
6 x 9	PM-69F	3.16	3.2 ohms 1"	4-9	$4\frac{7}{8} \times 6\frac{9}{16}$	$3\frac{9}{16}$	8.85
<b>AUTO REPLACEMENT GROUP</b>							
$5\frac{1}{4}$	PM-5CA	1.47	3.2 ohms $\frac{9}{16}$ "	2-4	4 x 4	$2\frac{15}{32}$	5.15
$6\frac{1}{4}$	PM-6EA	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{3}{4} \times 4\frac{3}{4}$	$3\frac{3}{16}$	5.85
7	PM-7EA	2.15	3.2 ohms $\frac{3}{4}$ "	4-9	$4\frac{1}{4} \times 5\frac{3}{4}$	$3\frac{1}{4}$	6.95
7	PM-7FA	3.16	3.2 ohms 1"	4-9	$4\frac{1}{4} \times 5\frac{3}{4}$	$3\frac{5}{16}$	7.95
<b>WIDE RANGE GROUP</b>							
8	PM-8JW	6.80	8 ohms 1"	6-12	$5\frac{7}{16} \times 5\frac{7}{16}$	$4\frac{3}{8}$	14.25
12	PM-12MW	14.70	8 ohms $1\frac{1}{4}$ "	15-25	$8\frac{1}{4} \times 8\frac{1}{4}$	$7\frac{3}{4}$	29.50

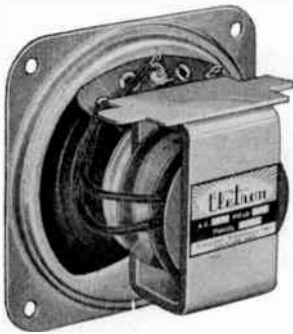
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# Cletron RADIO SPEAKERS

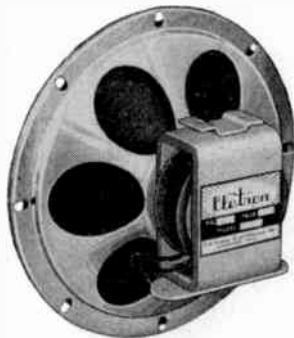
CLEVELAND ELECTRONICS, INC. CLEVELAND, OHIO



# EXTRA STRONG CONSTRUCTION PROVIDES LONGER LIFE



ED-345



ED-810



ED-6945

## ELECTRO DYNAMIC SPEAKERS

SIZE INCHES	CATALOG NUMBER	FIELD RESISTANCE	VOICE COIL SIZE & IMPEDANCE	WATTS	MOUNTING HOLE CENTERS INCHES	DEPTH INCHES	LIST PRICE
<b>STANDARD GROUP</b>							
3	ED-345	450 ohms	3.2 ohms 9/16"	2-4	2 13/16 x 2 13/16	2 1/32	\$ 4.35
4	ED-445	450 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 3/16	4.50
5	ED-545	450 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
5	ED-510	1000 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
5	ED-518	1800 ohms*	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
6	ED-645	450 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 4 3/8	2 15/16	5.50
6	ED-610	1000 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 4 3/8	2 15/16	5.50
6	ED-618	1800 ohms*	3.2 ohms 3/4"	4-9	4 3/8 x 4 3/8	2 15/16	5.50
8	ED-810	1000 ohms	3.2 ohms 3/4"	4-9	5 7/16 x 5 7/16	3 3/16	6.85
8	ED-818	1800 ohms*	3.2 ohms 3/4"	4-9	5 7/16 x 5 7/16	3 3/16	6.85
10	ED-1010	1000 ohms	3.2 ohms 1"	6-12	6 13/16 x 6 13/16	4 5/8	10.50
10	ED-1018	1800 ohms*	3.2 ohms 1"	6-12	6 13/16 x 6 13/16	4 5/8	10.65
12	ED-1210	1000 ohms	3.2 ohms 1"	6-12	8 1/4 x 8 1/4	5 3/8	12.75
12	ED-1218	1800 ohms*	3.2 ohms 1"	6-12	8 1/4 x 8 1/4	5 3/8	12.90
<b>OVAL GROUP</b>							
4 x 6	ED-4645	450 ohms	3.2 ohms 9/16"	2-4	3 5/8 x 4 5/8	2 3/8	5.25
4 x 6	ED-4610	1000 ohms	3.2 ohms 9/16"	2-4	3 5/8 x 4 5/8	2 3/8	5.25
5 x 7	ED-5745	450 ohms	3.2 ohms 3/4"	4-9	4 11/32 x 4 11/32	3 1/4	6.25
5 x 7	ED-5710	1000 ohms	3.2 ohms 3/4"	4-9	4 11/32 x 4 11/32	3 1/4	6.25
6 x 9	ED-6945	450 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 6 9/16	3 9/16	7.35
6 x 9	ED-6910	1000 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 6 9/16	3 9/16	7.35
<b>TV REPLACEMENT GROUP</b>							
5	ED-5T6	60 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
5	ED-5T10	100 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
4 x 6	ED-46T6	60 ohms	3.2 ohms 9/16"	2-4	3 5/8 x 4 5/8	2 3/8	5.25
4 x 6	ED-46T10	100 ohms	3.2 ohms 9/16"	2-4	3 5/8 x 4 5/8	2 3/8	5.25
<b>AUTO REPLACEMENT GROUP</b>							
4	ED-4Y6	4 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 3/16	4.50
5	ED-5Y6	4 ohms	3.2 ohms 9/16"	2-4	3 5/16 x 3 5/16	2 7/16	4.75
5 1/4	ED-5S6	4 ohms	3.2 ohms 9/16"	2-4	4 x 4	2 15/32	5.15
6	ED-6Y6	4 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 4 3/8	3 3/16	5.50
6 1/4	ED-6S6	4 ohms	3.2 ohms 3/4"	4-9	4 3/8 x 4 3/8	3 3/16	5.75
7	ED-7Y6	4 ohms	3.2 ohms 1"	4-9	4 1/4 x 5 3/4	3 5/16	6.75
6 x 9	ED-69Y6	4 ohms	3.2 ohms 1"	4-9	4 5/8 x 6 9/16	3 9/16	7.45

NOTE: \* Tapped at 300 ohms.

NOTE: 3 - 4 - 5 1/4 - 6 - 6 1/4 inch speakers have square type mountings.

NOTE: 5 - 8 - 10 - 12 - 15 inch speakers have round type mountings.

NOTE: Transformer Mounting Brackets and 2 drilled and tapped holes in Pot are provided on the smaller speakers.

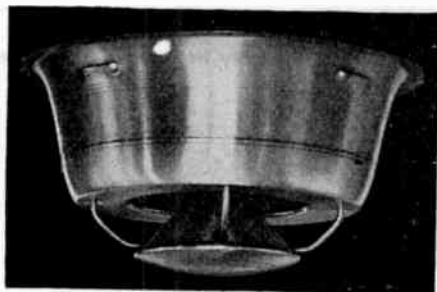
# Electro RADIO SPEAKERS

CLEVELAND ELECTRONICS, INC. CLEVELAND, OHIO

# "Heard Everywhere"

## FLUSH MOUNTING CEILING BAFFLES

### WITH "FLOATING CONICAL ACTION"



#### Model Nos.

**BL6-A  
BL8-A  
BL12-A  
BL6-PC  
BL8-PC**

PATENTED  
IN THE U.S.A.  
AND CANADA

#### DESCRIPTION OF BAFFLE

The flush mounting ceiling baffle is designed to mount flush to the ceiling quickly by inserting 4 toggle bolts, completely sealing back of housing to the ceiling. This baffle is recommended for normal ceilings. Uniform sound reproduction at 360° giving CONTROLLED SOUND evenly in all directions. Baffle is made of spun metal, of 18 gauge aluminum. Heavy 3/4" jute lines interior with louvres on sides for proper pressure relief.

#### DIMENSIONS OF VARIOUS MODEL BAFFLES

6" models — 9 3/8" at top x 4 1/4" deep.  
8" models — 13 1/2" at top x 4 7/8" deep.  
12" models — 18 3/4" at top x 8" deep.

Model No.	Type	Spkr. Size for Baffle	Material	Finish	List Price
BL6 - A	Flush Mounting	6"	Aluminum	Satin	13.00
BL8 - A	Flush Mounting	8"	Aluminum	Satin	22.00
BL12-A	Flush Mounting	12"	Aluminum	Satin	27.00

#### ARCHITECTS' SPECIFICATIONS

This speaker baffle housing contains a half inch flange at top with 4 holes evenly placed for proper mounting to the ceiling. The lower metal cone is mounted to the housing by 4 one-quarter inch formed metal rods having 4 hard rubber grommets preventing metallic resonance. The upper part of the rods are threaded and mount through speaker housing. All hardware furnished complete with each baffle.

## Recessed Wall Type Directional Speaker Baffles

#### DESCRIPTION

This speaker trim ring is made of spun metal, 18 gauge aluminum. Flocked metal color grille cloth protects speaker cone—4 round head screws mounts through housing for mounting speaker. Housing has a depth of 1/2" and a half inch flange for mounting housing to wall.

Model No.	Type	Spkr. Size for Baffle	Material	Finish	List Price
RS6 - A	Recessed Wall	6"	Aluminum	Satin	5.00
RS8 - A	Recessed Wall	8"	Aluminum	Satin	9.90
RS12-A	Recessed Wall	12"	Aluminum	Satin	12.60



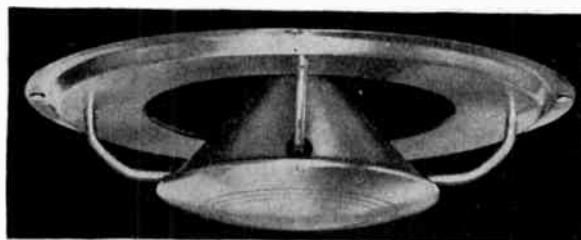
#### Model Nos.

**RS6-PC      RS6-A  
RS6-PC      RS8-A  
RS12-A**

#### FEATURES

Concealment of speakers.  
Easily installed.  
Finished to match surroundings.

## For Low Ceilings



Model Nos: **AL12-PC    AL6-PC    AL8-PC    AL6-A  
AL8-A    AL12-A**

#### DIMENSIONS OF VARIOUS MODEL BAFFLES

The overall diameter at top of housing flange:  
6" model — 9 3/8" in diameter, depth 1 1/4"  
8" model — 11 3/4" in diameter, depth 1 1/2"  
12" model — 16 3/8" in diameter, depth 1"

#### DESCRIPTION

The false ceiling speaker housing is made of 18 gauge aluminum. Housing is spun metal, having a depth of 1/2" and a half inch flange for mounting housing to ceiling. The lower metal cone is mounted to the housing by 4 one-quarter inch formed metal rods having 4 hard rubber grommets preventing metallic resonance. The upper part of the rods are threaded and mount through speaker housing. All hardware furnished complete with each baffle. The sound coverage of this baffle is approximately 360°.

Model No.	Type	Spkr. Size for Baffle	Material	Finish	Price
AL6 - A	False Ceiling	6"	Aluminum	Satin	7.50
AL8 - A	False Ceiling	8"	Aluminum	Satin	12.15
AL12-A	False Ceiling	12"	Aluminum	Satin	15.30

**LOWELL METAL PRODUCTS CORPORATION • ST. LOUIS, MO., U.S.A.**



# JIM LANSING SIGNATURE SPEAKERS

JAMES B. LANSING SOUND, Inc.



JIM LANSING SIGNATURE SPEAKERS are engineered and precision fabricated to supply without compromise the finest loud speaker performance possible.

## GENERAL PURPOSE SPEAKER SPECIFICATIONS

### D-130 — 15 INCH

Power Input..... 25 Watts  
Impedance (nominal)..... 16 Ohms  
Resonant Frequency..... 55 Cycles  
Outside Diameter..... 15  $\frac{1}{8}$  ins.  
Depth ..... 5  $\frac{1}{8}$  ins.  
Field ..... Perm. Mag.  
Voice Coil Diameter..... 4 ins.  
Mounting Dimen. .... R.M.A. Std.  
Net Weight..... 19 pounds

LIST PRICE \$95.00

### D-131 — 12 INCH

Power Input..... 20 Watts  
Impedance (nominal)..... 16 Ohms  
Resonant Frequency..... 65 Cycles  
Outside Diameter..... 12  $\frac{1}{2}$  ins.  
Depth ..... 5 ins.  
Field ..... Perm. Mag.  
Voice Coil Diameter..... 4 ins.  
Mounting Dimen. .... R.M.A. Std.  
Net Weight..... 17 pounds

LIST PRICE \$89.50

### 208 — 8 INCH

Power Input..... 12 Watts  
Impedance (nominal)..... 8 Ohms  
Resonant Frequency..... 90 Cycles  
Outside Diameter..... 8  $\frac{1}{2}$  ins.  
Depth ..... 2  $\frac{3}{8}$  ins.  
Field ..... Perm. Mag.  
Voice Coil Diameter..... 2 ins.  
Mounting Dimen. .... R.M.A. Std.  
Net Weight..... 4 pounds

LIST PRICE \$34.50

All Jim Lansing general purpose speakers utilize exceedingly large Alnico V Permanent Magnets, edge wound aluminum ribbon voice coils, aluminum high frequency center diaphragm vented to the rear to eliminate non-linear compression effects, and heavy, extremely rigid, cast aluminum frames.

## TWO-WAY SYSTEMS, COMPONENTS AND SPECIFICATIONS



### D-130A

#### 15 INCH LOW FREQUENCY UNIT

Power Input..... 25 Watts  
Impedance (nominal)..... 16 Ohms  
Resonant Frequency..... 40 Cycles  
Outside Diameter..... 15  $\frac{1}{8}$  ins.  
Depth ..... 5  $\frac{1}{8}$  ins.  
Field ..... Perm. Mag.  
Voice Coil Diameter..... 4 ins.  
Mounting Dimen. .... R.M.A. Std.  
Net Weight..... 19 pounds

LIST PRICE \$97.50



### D-175H

#### HIGH FREQUENCY UNIT AND HORN

Power Input..... 25 Watts Peak above  
1200 C.P.S. — 4 db  
attenuator built  
into N-1200 Network  
permits use in 25  
Watt system  
Impedance (nominal)..... 16 Ohms  
Field ..... Perm. Mag.  
Outside Diameter..... 4  $\frac{1}{2}$  ins.  
Weight ..... 11 pounds

LIST PRICE \$165.00



### N-1200

#### DIVIDING NETWORK

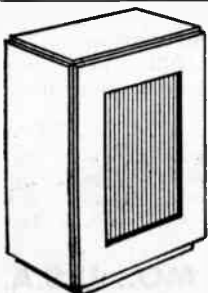
Input Impedance..... 16 Ohms  
Output Impedance  
16 Ohms (each section)  
Net Weight..... 6 pounds

LIST PRICE \$48.00

### D-1001 TWO-WAY KIT INCLUDES THE FOLLOWING UNITS:

ONE D-130A, ONE D-175H AND ONE N-1200 LIST PRICE \$310.50

The D-1001 Kit provides the basic Jim Lansing Two-Way system for use where critical listeners demand flawless reproduction of the entire frequency range.

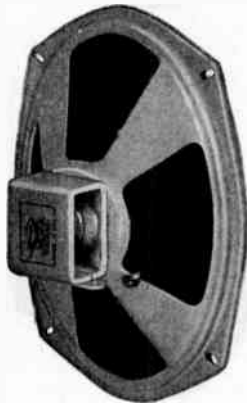
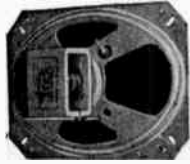


## CABINETS

D-1000	Gray utility cabinet with D-1001 components installed.....	List Price \$432.50
D-1002	Dark Mahogany furniture cabinet with D-1001 components installed.....	List Price 445.00
D-1003	Bleached Mahogany furniture cabinet with D-1001 components installed.....	List Price 452.50
D-1004	Corner cabinet, dark Mahogany, two D-180B, one D-175H and N-1200 installed.....	List Price 567.50
D-1005	Corner cabinet, bleached Mahogany, two D-180B, one D-175H and N-1200 installed.....	List Price 575.00
D-502	Dark Mahogany furniture cabinet with D-180 speaker installed.....	List Price 207.50
D-503	Dark Mahogany furniture cabinet with D-181 speaker installed.....	List Price 202.00
D-504	Bleached Mahogany furniture cabinet with D-180 speaker installed.....	List Price 215.00
D-505	Bleached Mahogany furniture cabinet with D-181 speaker installed.....	List Price 209.50

# OXFORD SPEAKERS

## Permanent Magnet Speakers — Standard Replacement Line



Size	Model No.	Mag. Wt.	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
2"	2AMS	.68 oz.	1/2"	3.2 Ohm	1-2	86	1/2 Lbs.	\$3.50
2"	2CMS	1.47	1/2"	3.2	1-2	86	1/2	4.10
3"	3AMS	.68	1/2"	3.2	2-3	86	1/2	3.50
3"	3CMS	1.47	1/2"	3.2	2-3	86	1/2	4.10
4"	4AMS	.68	1/2"	3.2	2-3	24	1/2	3.75
4"	4BMS	1.00	1/2"	3.2	2-3	24	1/2	4.00
4"	4CMS	1.47	1/2"	3.2	2-3	24	1/2	4.35
5"	5AMS	.68	1/2"	3.2	2-4	24	1/2	4.00
5"	5BMS	1.00	1/2"	3.2	2-4	24	1	4.25
5"	5CMS	1.47	1/2"	3.2	2-4	24	1	4.60
5 1/2"	5ECS	2.15	1/2"	3.2	2-4	24	1 1/2	5.10
5 1/2"	52BMS	1.00	1/2"	3.2	2-4	24	1	4.35
5 1/2"	52CMS	1.47	1/2"	3.2	2-4	24	1	4.75
6"	6AMS	.68	1/2"	3.2	3-5	20	1	4.50
6"	6BMS	1.00	1/2"	3.2	3-5	20	1	4.75
6"	6CMS	1.47	1/2"	3.2	3-5	20	1	5.15
6"	6EVS	2.15	1/2"	3.2	4-6	20	1 1/4	5.65
6"	6FOS	3.16	3/8"	3.2	4-6	20	1 1/2	6.50
8"	8CMS	1.47	1/2"	3.2	3-5	20	1 1/2	6.50
8"	8EVS	2.15	1/2"	3.2	4-6	20	1 1/2	7.00
8"	8FOS	3.16	3/8"	3.2	4-6	20	2 1/4	8.10
8"	8HBS	4.64	1"	3.2	6-8	20	2 1/2	9.50
8"	8JBS	6.80	1"	3.2	6-8	20	3	11.50
10"	10EVS	2.15	3/8"	3.2	4-6	8	2 1/4	9.00
10"	10FOS	3.16	3/8"	3.2	4-6	8	2 1/2	10.00
10"	10HBS	4.64	1"	3.2	8-10	8	3 1/2	11.50
10"	10JBS	6.80	1"	3.2	8-10	8	3 3/4	13.00
12"	12EVS	2.15	3/8"	3.2	4-6	6	3	10.00
12"	12FOS	3.16	3/8"	3.2	4-6	6	3 1/2	11.00
12"	12HBS	4.64	1"	3.2	8-10	6	4 1/4	12.50
12"	12JBS	6.80	1"	3.2	8-10	6	4 3/4	14.00
12"	12XMS	22.50	1 1/2"	3.2	20-30	4	10	35.00
15"	15XMS	22.50	1 1/2"	3.2	20-30	1	18	40.00
4"x6"	46AMS	.68	1/2"	3.2	2-4	24	1/2	4.25
4"x6"	46BMS	1.00	1/2"	3.2	2-4	24	1	4.50
4"x6"	46CMS	1.47	1/2"	3.2	2-4	24	1	5.00
5"x7"	57CMS	1.47	1/2"	3.2	3-5	24	1	5.50
5"x7"	57EVS	2.15	1/2"	3.2	4-6	24	1 1/4	6.25
5"x7"	57FOS	3.16	3/8"	3.2	4-6	24	1 1/2	7.50
6"x9"	69CMS	1.47	1/2"	3.2	4-6	24	1 1/4	6.75
6"x9"	69EVS	2.15	1/2"	3.2	4-6	24	1 1/2	7.50
6"x9"	69FOS	3.16	1"	3.2	6-8	24	1 3/4	8.75

## Electro Dynamic Speakers — Standard Replacement Line

Size	Model No.	Field	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
4"	4V45S	450 Ohm	1/2"	3.2 Ohm	2-4	24	1 Lbs.	\$4.25
5"	5V45S	450	1/2"	3.2	2-4	24	1 1/4	4.50
5"	5V100S	1000	1/2"	3.2	2-4	24	1 1/4	4.50
5"	5V180S	1800	1/2"	3.2	2-4	24	1 1/4	4.50
6"	60A100S	1000	1/2"	3.2	4-6	20	1 1/4	5.25
6"	60A180S	1800	1/2"	3.2	4-6	20	1 1/4	5.25
6"	60A250S	2500	1/2"	3.2	4-6	20	1 1/4	5.25
8"	80A100S	1000	1/2"	3.2	4-6	20	2 1/4	6.75
8"	80A180S	1800	1/2"	3.2	4-6	20	2 1/4	6.75
8"	80A250S	2500	1/2"	3.2	4-6	20	2 1/4	6.75
10"	10E100S	1000	1"	3.2	8-10	8	4 1/4	10.00
10"	10E250S	2500	1"	3.2	8-10	8	4 1/4	10.00
12"	12E100S	1000	1"	3.2	8-10	6	5 1/2	12.25
12"	12E250S	2500	1"	3.2	8-10	6	5 1/2	12.25

Our products are nationally advertised.

All speakers are fully dustproofed.

Rustproof cadmium plating used throughout.

R.M.A. standard dimensions on all models.

All Electro-Dynamic Speakers equipped with hum neutralizing coils.

All small speakers 2" to 6" will have transformer mounting brackets.

All large speakers over 6" will have transformer mounting facilities on basket.

All 4", 5", 6" and 4"x6" P.M. Speakers will have holes drilled in pot for easy mounting and will be supplied with Universal mounting brackets and self tapping screws.

All Public Address Speakers will be supplied with pot covers.

There is an  
OXFORD SPEAKER  
to meet each  
specific requirement!

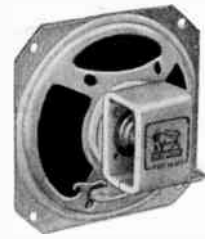
**OXFORD ELECTRIC CORPORATION**



# OXFORD SPEAKERS

## TV Replacement Speakers

Size	Model No.	Field	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
5"	5V6S	60 Ohm	$\frac{8}{16}$ "	3.2 Ohm	2-4	24	1 $\frac{1}{4}$ Lbs.	\$4.50
5"	5V10S	100	$\frac{8}{16}$ "	8.2	2-4	24	1 $\frac{1}{4}$	4.50
6"	60A10S	100	$\frac{8}{16}$ "	3.2	4-6	20	1 $\frac{1}{4}$	5.25
8"	80A10S	100	$\frac{8}{16}$ "	3.2	4-6	20	2 $\frac{1}{4}$	6.75
10"	10E10S	100	1"	3.2	8-10	8	4 $\frac{1}{4}$	10.00
12"	12E10S	100	1"	3.2	8-10	6	5 $\frac{1}{2}$	12.25
4"x6"	46V6S	60	$\frac{8}{16}$ "	3.2	2-4	24	1 $\frac{1}{4}$	5.00
4"x6"	46V10S	100	$\frac{8}{16}$ "	3.2	2-4	24	1 $\frac{1}{4}$	5.00
5"x7"	57V10S	100	$\frac{8}{16}$ "	3.2	3-5	24	1 $\frac{3}{4}$	6.00



## Auto Replacement Speakers

Size	Model No.	Mag. Wt. or Field	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
5"	5CMS	1.47 oz.	$\frac{8}{16}$ "	3.2 Ohm	2-4	24	1 Lbs.	\$4.60
5 $\frac{1}{4}$ "	52CMS	1.47 oz.	$\frac{8}{16}$ "	8.2	2-4	24	1	4.75
6"	6EVS	2.15 oz.	$\frac{8}{16}$ "	3.2	4-6	20	1 $\frac{1}{4}$	5.65
7"	7EVS	2.15 oz.	$\frac{8}{16}$ "	3.2	4-6	20	1 $\frac{1}{2}$	6.75
7"	7FOS	3.16 oz.	$\frac{8}{16}$ "	3.2	4-6	20	2	7.65
6"x9"	69EVS	2.15 oz.	$\frac{8}{16}$ "	3.2	4-6	24	1 $\frac{1}{2}$	7.50
6"x9"	69FOS	3.16 oz.	1"	3.2	6-8	24	1 $\frac{3}{4}$	8.75
5"	5VO4S	4 Ohm	$\frac{8}{16}$ "	3.2	2-4	24	1 $\frac{1}{4}$	4.50
5 $\frac{1}{4}$ "	52VO4S	4 Ohm	$\frac{8}{16}$ "	3.2	2-4	24	1 $\frac{1}{4}$	4.75
6"	60A04S	4 Ohm	$\frac{8}{16}$ "	3.2	4-6	20	1 $\frac{1}{2}$	5.25
7"	70A04S	4 Ohm	$\frac{8}{16}$ "	3.2	4-6	20	2	6.50
6"x9"	690A04S	4 Ohm	$\frac{8}{16}$ "	3.2	4-6	24	2 $\frac{1}{4}$	7.25



## Public Address Speakers

Size	Model No.	Mag. Wt.	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
8"	8JBS-7	6.80 oz.	1"	6-8 Ohm	6-8	12	3 Lbs.	\$12.00
10"	10JBS-7	6.80	1"	6-8	8-10	6	3 $\frac{3}{4}$	13.50
12"	12JBS-7	6.80	1"	6-8	8-10	4	4 $\frac{3}{4}$	14.50
12"	12XMS-7	22.50	1 $\frac{1}{2}$ "	6-8	20-80	4	10	35.00
15"	15XMS-7	22.50	1 $\frac{1}{2}$ "	6-8	20-30	1	18	40.00

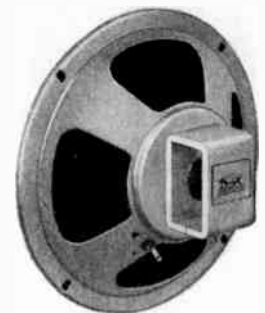


## Intercom Speakers

Size	Model No.	Mag. Wt.	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
4"	4BMXS	1.00 oz.	$\frac{8}{16}$ "	45 Ohm	2-3	24	1 Lbs.	\$4.75
5"	5BMXS	1.00	$\frac{8}{16}$ "	45	2-4	24	1	5.00

## Weatherproof Speakers

Size	Model No.	Mag. Wt.	V. C. Size	V. C. Imp.	Watts	Standard Pack	Shipping Wt. Each	List Price
4"	4CMWS	1.47 oz.	$\frac{8}{16}$ "	3.2 Ohm	2-4	24	1 Lbs.	\$5.00
5"	5CMWS	1.47	$\frac{8}{16}$ "	8.2	2-4	24	1	5.25



OXFORD SPEAKERS, backed by over twenty-five years of experience and research, are precision-made to the most exacting specifications.



There is an OXFORD SPEAKER for every need . . . TV, FM, AM, Auto and Public Address . . . from 2" to 15" units.

There is an OXFORD SPEAKER to meet each specific requirement!

**OXFORD ELECTRIC CORPORATION**



# SPEAKERS

## REFLEX LOUDSPEAKERS



MODEL LH

The reflex horns pioneered by University represent the most efficient method of converting electrical power into acoustic energy. When used with University driver units, they are capable of conversion efficiencies up to 50% and in addition, provide compactness and weather protection without any sacrifice in performance.

Heavy gauge metal and corrosion resistant finishes on horn and hardware are assurance of trouble-free performance regardless of changes in temperature and humidity. Adjustable UNIVERSITY "U" bracket mounting simplifies installation and holds the speaker firmly locked in any position.

Four models cover every public address requirement. Model GH has the longest air column and is ideal for the reproduction of symphonic music. The model LH with a higher cutoff is designed as a general purpose speaker and is recommended for music transmission where economy without sacrifice of quality is essential. In installations where a smaller horn is required, the Model PH will render excellent service for both speech and music. The Model SMH will find its widest application in the reproduction of speech where clarity and a high degree of intelligibility are necessary. Accessories include Model PMA adapter and 2YC connector.

MODEL	SMH	PH	LH	GH
LOW FREQUENCY CUTOFF . . . . .	200 CPS	150 CPS	120 CPS	85 CPS
AIR COLUMN . . . . .	2 1/2 FEET	3 1/2 FEET	4 1/2 FEET	6 1/2 FEET
DISPERSION . . . . .	95°	85°	75°	65°
DIAMETER . . . . .	16 1/4 INCHES	20 1/4 INCHES	25 3/8 INCHES	30 7/8 INCHES
LENGTH . . . . .	12 INCHES	15 3/4 INCHES	19 INCHES	27 1/8 INCHES
WEIGHT (net) . . . . .	6 LBS.	10 LBS.	15 LBS.	22 LBS.
LIST PRICE (Horn only) . . . . .	\$24.50	\$29.00	\$44.50	\$60.00

## BREAKDOWN PROOF DRIVER UNITS

University driver units are breakdown proof and guaranteed for one year. Ratings are conservative and operation over long periods is assured. They are of the PM dynamic type, incorporate highest quality Alnico magnets and one-piece molded phenolic diaphragms. Unique "rim centering" construction eliminates aligning pins and permanently centers the voice coil and head assembly in a much closer magnetic gap. This results in a higher conversion efficiency and misalignment due to shock or vibration is virtually eliminated. Hermetically sealed housings provide complete protection from out-

door exposure and corrosive fumes.

The PA-30 has a 30-watt built-in line matching transformer. Transformer terminals provide 16, 185, 250, 500, 1000, 2000-ohm taps for constant impedance systems and 2 1/2, 5, 10, 20 and 30-watt taps for 70-volt constant voltage systems. Use the PA-30 or SA-HF for high power installations or where occasional overload is a problem. Model MA-25 represents the best "watts per dollar" value of any driver unit made. It combines efficiency, waterproof construction and economy.



MODEL PA-30



MODEL SA-HF



MODEL MA-25

MODEL	PA-30	SA-HF	MA-25
CONTINUOUS POWER . . . . .	30 WATTS	25 WATTS	25 WATTS
IMPEDANCE . . . . .	ADJUSTABLE*	16 OHMS	16 OHMS
FREQUENCY . . . . .	80 to 10,000 CPS	90 to 10,000 CPS	90 to 6000 CPS
DIAMETER . . . . .	6 3/8 INCHES	4 1/2 INCHES	4 1/8 INCHES
HEIGHT . . . . .	6 1/8 INCHES	5 INCHES	3 3/8 INCHES
WEIGHT . . . . .	6 LBS.	4 LBS.	3 LBS.
THREAD SIZE . . . . .	1 3/8"-18	1 3/8"-18	1 3/8"-18
LIST PRICE . . . . .	\$50.00	\$37.00	\$25.00

\*16-Ohm Voice Coil—165, 250, 500, 1000, 2000 Ohms — All Readily Accessible on Molded Terminal Block at Base of Unit.

## ACCESSORIES



Model PMA Adapter

For mounting any UNIVERSITY "U" bracket speaker on standard 1/2" pipe.

LIST PRICE  
\$1.50



Model 2YC Connector

Use with two driver units to provide up to 60 watts for any UNIVERSITY trumpet or projector.

LIST PRICE  
\$10.00



Model WEA Unit Adapter

For adapting Western Electric and RCA horns for use with any UNIVERSITY driver unit.

LIST PRICE  
\$2.50



# SPEAKERS

## PAGING AND INTERCOM SPEAKERS

These speakers are reflex air column horns with built-in hermetically sealed driver units. Models CR, 1B8, and MIL are directional and model IBR has a radial deflector for uniform 360° dispersion. They are capable of continuous use for intercommunication and paging on shipboard, docks, leading platforms, terminals and industrial plants.

Model CR can handle 18 watts of input power continuously, making it useful for high power alarm or announcing systems. Models IB8 and IBR have a continuous power handling capacity of 12 watts, which recommends them for paging or announcing in noisy industrial

areas. The models MIL and MIS with a 3 watt continuous power capacity are efficient intercommunication speakers. The model MIS is a small unit designed for flush panel mounting.

Though capable of producing adequate volume with low power, these speakers can handle more power than any other speaker of comparable size and weight. Modernization of old sound systems is easily accomplished by replacement of obsolete speakers with any of these models. Standard voice coil impedances permit installation without changes in the existing line or amplifier.

## DIRECTIONAL AND RADIAL TYPE SPEAKERS



MODEL MIS



MODEL MIL



MODEL IB8



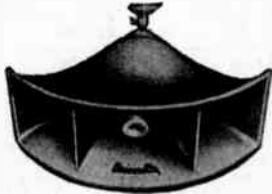
MODEL CR



MODEL IBR

MODEL	MIS	MIL	IB8	CR	IBR
CONT. POWER	3 WATTS	3 WATTS	12 WATTS	18 WATTS	12 WATTS
IMPEDANCE .	8 OHMS	8 OHMS	8 OHMS	16 OHMS	8 OHMS
DISPERSION .	150°	120°	90°	90°	360°
FREQUENCY .	500-9000	400-9000	300-10,000	250-6000	300-10,000
DIMENSIONS .	3 7/8" Deep, 5 1/2" O.D. 4 7/8" Mounting Dia.	6 3/8" INCHES DIA. 7" INCHES HIGH	8 1/2" INCHES DIA. 9" INCHES HIGH	11 1/2" INCHES DIA. 11 1/2" INCHES HIGH	9 3/4" INCHES DIA. 11" INCHES HIGH
WEIGHT .	2 1/8" LBS.	3 1/2" LBS.	5 LBS.	9 LBS.	5 LBS.
LIST PRICE .	8 OHM, \$20.00 45 OHM, \$21.25	8 OHM, \$25.00 45 OHM, \$26.25	\$32.50	\$42.00	\$39.00

## WIDE ANGLE SPEAKERS



COBRA-12  
Eliminates  
Power Waste. Concentrates  
Power In Horizontal Plane.

University Wide Angle paging speakers are available in two models as illustrated. While both provide excellent performance in continuous service, each has certain advantages under particular conditions as described below.

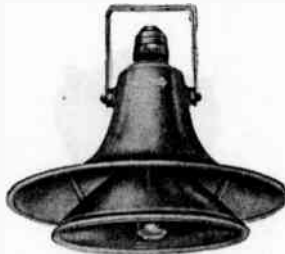
MODEL	COBRA-12	2W-25
CONT. POWER	12 WATTS	25 WATTS
IMPEDANCE .	8 OHMS	16 OHMS
DISPERSION .	120° x 60°	120° EACH HORN
FREQUENCY .	250-10,000	350-6000
DIMENSIONS .	14 1/2" LG - BELL MOUTH: 20" x 9"	20 1/2" LG - BELL MOUTH: 8" DIA.
WEIGHT .	9 LBS.	9 LBS.
LIST PRICE .	\$45.00	\$48.00



MODEL 2W-25  
Covers Two Areas  
Effectively with a  
Single Driver Unit.

## RADIAL REFLEX PROJECTORS

Re-entrant horns with radial deflectors for uniform 360° sound distribution cover large areas and override high noise-levels, without blasting. The long air column of the RHL and its low frequency cutoff make it well suited for music and general applications. The smaller model RPH, with a somewhat higher cutoff, will serve for both music and speech. The RSH finds wide application for high clarity reproduction of speech. Shipped complete with hardware but less driver unit.



MODEL	RHL	RPH	RSH
LOW CUTOFF	110 CPS	140 CPS	180 CPS
AIR COLUMN	5 FT.	4 FT.	3 FT.
DIAMETER	28 1/8"	25 1/4"	18 7/8"
HEIGHT	18 1/2"	14"	11"
WEIGHT	21 1/2 LBS.	18 LBS.	12 LBS.
LIST PRICE (Horn only)	\$59.00	\$45.00	\$38.50

## RADIAL CONE-SPEAKER PROJECTORS

MODEL	RBP-12	RBP-8
FREQUENCY	UNIFORM DOWN TO 50 CYCLES	UNIFORM DOWN TO 80 CYCLES
DIAMETER	26 INCHES	16 3/4 INCHES
HEIGHT	13 3/4 INCHES	10 1/2 INCHES
WEIGHT	19 LBS.	9 LBS.
LIST PRICE	\$35.00	\$19.60



These compact projectors consist of an acoustic chamber for housing a cone speaker and a radial deflector for uniform 360° dispersion. Of all metal, rubber cushioned construction, the model RBP-12, designed for a 12" cone speaker, provides uniform response down to 50 cycles and model RBP-8, designed for an 8" speaker, has a low frequency limit of 80 cycles. Any standard make of 8" or 12" cone speaker can be installed in these baffles. Both models are watershedding and may be used indoors or out. They are shipped complete with hardware but less cone speaker.



# SPEAKERS

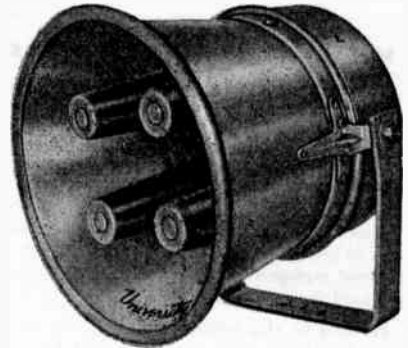
## SUPER POWER SPEAKERS

UNIVERSITY super power speakers are the answer to every public address installation where tremendous amounts of concentrated power must be transmitted over long distances.

The Model 4A4 incorporates 4 PM driver units mounted on the back of a heavy cast mounting plate. Each driver opens into a reflexed air column on the front of the mounting plate. The four air columns feed into a common bell. Compactness makes them ideally suited for aeroplane broadcasting and use in Church towers, stadiums, etc.

In the Models B-6 and B-12, the PM driver units are mounted circumferentially on a rugged "tone chamber" casting which provides individual acoustic paths from each driver unit to a mixing chamber at the center of the casting. The patented design of the mixing chamber and the acoustic paths minimizes high frequency cancellation.

All speakers are completely waterproof and characterized by their ruggedness. Power ratings are conservative and projection ranges are often exceeded in actual operation. Speakers of this type were recently heard 15 miles in a carillon installation at the Empire State Building in New York City. "U" brackets permit a vertical swing of approximately 120° and locking in any position. Models B-6 and B-12 are supplied with horns suitable for voice reproduction essentially as standard equipment. For music, order substitute TYPE C HORN capable of response down to 100 cps. NOTE: Model 4A4 is sold and shipped less driver units. Standard driver units Model 8A-HF or MA-25 may be used.



MODEL 4A4



MODEL B-6

	MODEL 4A4	MODEL B-6	MODEL B-12
CONT. POWER	100 WATTS	150 WATTS	300 WATTS
IMPEDANCE	4, 16, 60 OHMS	90 OHMS	DOUBLE INPUT 90 OHMS EACH
DRIVERS	4 UNITS	6 UNITS	12 UNITS
DISPERSION	80°	90°	90°
FREQUENCY	200-10,000 CPS.	200-10,000 CPS.	200-10,000 CPS.
PROJECTION	1 MILE	1½ MILES	2 MILES
DIAMETER	17"	16½" (Housing only)	18" (Housing only)
LENGTH	20"	23" (Housing only)	15" (Housing only)
WEIGHT	23 LBS.	60 LBS.	30 LBS.
LIST PRICE*	\$93.00 (less units)	\$505.00 (with units)	\$935.00 (with units)

\*TYPE C HORN \$37.50 EXTRA.

## RAILROAD AND MARINE TYPES

UNIVERSITY marine and railroad type speakers are submergence, shock and vibration proof and are unaffected by live steam. Their reflex air columns are built of rugged castings and are equipped with Alnico V PM dynamic units. Speakers may be made blastproof on order.

Models MSR, MM-2TC, MM-2 and MM-2F have hermetically sealed housings and built-in driver units. Models MSR and MM-2TC have space for volume control and line matching transformer. Tapped

holes provide access to volume control and for receiving a conduit. Both are designed for bulkhead or wall mounting — the Model MM-2F may be flush mounted and the MM-2 has a swivel mounting bracket.

These speakers will operate efficiently under the most arduous conditions — on ships, docks, in railroad yards or locomotive cars, — in mines, laundries and mills — wherever dirt, salt spray, humidity, fungus, dusts and vapors constitute a hazard.



MODEL MM-2TC

CONTINUOUS POWER	15 WATTS
TYPE MOUNTING	WALL
IMPEDANCE	16 OHMS
DISPERSION	120°
FREQUENCY	300-6000 CYCLES
HEIGHT	10"
DEPTH	4½"
WIDTH	6¼"
WEIGHT	10¼ LBS.
LIST PRICE	\$65.00



Pat. Pend.

MODEL MM-2

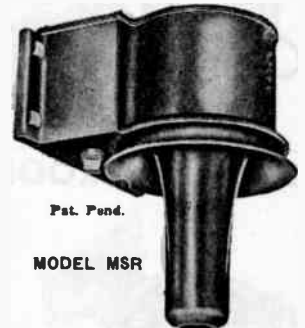
CONTINUOUS POWER	15 WATTS
TYPE MOUNTING	WALL
IMPEDANCE	16 OHMS
DISPERSION	120°
FREQUENCY	300-6000 CYCLES
HEIGHT	10"
DEPTH	4½"
WIDTH	6¼"
WEIGHT	10¼ LBS.
LIST PRICE	\$65.00



Pat. Pend.

MODEL MM-2F

CONTINUOUS POWER	15 WATTS
TYPE MOUNTING	SWIVEL BRACKET
IMPEDANCE	16 OHMS
DISPERSION	150°
FREQUENCY	300-6000 CYCLES
HEIGHT	10"
DEPTH	4¾" DEEP, 6" O.D.
WIDTH	5½ LBS.
WEIGHT	5½ LBS.
LIST PRICE	\$42.00



Pat. Pend.

MODEL MSR

CONTINUOUS POWER	15 WATTS
TYPE MOUNTING	FLUSH PANEL
IMPEDANCE	16 OHMS
DISPERSION	150°
FREQUENCY	300-6000 CYCLES
HEIGHT	10"
DEPTH	3¾" DEEP, 7¼" O.D.
WIDTH	4 LBS.
WEIGHT	4 LBS.
LIST PRICE	\$40.00

CONTINUOUS POWER	15 WATTS
TYPE MOUNTING	WALL
IMPEDANCE	16 OHMS
DISPERSION	300°
FREQUENCY	350-6000 CYCLES
HEIGHT	10¼"
DEPTH	8¼"
WIDTH	7¾"
WEIGHT	8¾ LBS.
LIST PRICE	\$95.00





# SPEAKERS

## UL APPROVED EXPLOSION-PROOF SPEAKERS

- \* MODEL 7101 APPROVED FOR CLASS I, GROUPS C, D
- MODEL 7102 APPROVED FOR CLASS II, GROUPS E, F, G

Introduction of Models 7101 and 7102 Explosion-Proof Speakers now makes it possible to install loudspeaker systems in locations where flammable liquids, gases, dust and other combustibles are present. Approved by Underwriters' Laboratories for Class I and II locations, Models 7101 and 7102 permit industries heretofore denied the advantages of sound, paging and intercom facilities, to proceed immediately with 100% safe installations. In addition to approved explosion-proof construction, these speakers represent the last word in rugged design.

Features of this speaker include a 2 1/2-ft. air column, re-entrant type trumpet, a heavy duty driver unit with "W" shaped Alnico V magnet, response to 10,000 cps and continuous power capacity of 25 watts integrated program material. Voice coil impedance is 16 ohms, and a husky line matching transformer is included and built into the driver unit housing, tapped for 45, 500, 1000, 1500 and 2000-ohm inputs. Dispersion angle is 95°. Cable entrance is threaded for 1/2" conduit. "U" type mounting bracket permits over 180° variation of mounting angle.

\*Refers to classes of service as described by Underwriters' Laboratories for which this speaker is approved. For complete data write for free bulletin.

**NOTE:** For Architects and Engineers Specifications covering explosion-proof installations, see University Bulletin 71N15.



MODEL 7101  
MODEL 7102

MODEL	7101 AND 7102
MAX. POWER INPUT*	25 WATTS
FREQUENCY	200-10,000 CPS.
VOICE COIL IMPEDANCE	16 OHMS
TRANSFORMER INPUT	45, 500, 1000, 1500, 2000 OHMS
DISPERSION	95°
DIMENSIONS	19" LG., 15 3/4" HIGH
NET WEIGHT	21 LBS.
CABLE ENTRANCE	1/2" CONDUIT TAP
MOUNTING	"U" BRACKET, 180° SWING

LIST PRICE — 7101 \$125.00  
LIST PRICE — 7102 150.00

\*CONTINUOUS, INTEGRATED PROGRAM MATERIAL

## UNIVERSITY POWRMIKE SOUND SYSTEM

COMPLETE • PORTABLE • NO TUBES • NO AMPLIFIER • NO A.C.

UNIVERSITY Powrmike features a microphone of completely new design that makes possible an effective, voice-amplified system without vacuum tube amplifier. It operates from any 6-volt D.C. source, wet or dry cell type batteries or vehicle ignition systems. Powrmike is completely portable, low in cost and requires no service or installation. Instant operation by depressing the switch bar on the microphone. Articulation and intelligibility are excellent. Sound output is ample to cover small crowds and provides good sound projection to over 100 feet. Under favorable conditions, this range is increased considerably. Powrmike is not intended to supplant conventional tube amplifying systems where higher power or music distribution is desired. But for applications needing only small area coverage and efficient voice reproduction, Powrmike is ideal. Powrmike is unconditionally guaranteed for one year.



MODEL  
PC 66

MODEL	DESCRIPTION	LIST PRICE
PC 66	"Hot Shot" battery adapter plate with volume control, Powrmike, PS-4 speaker	Completely wired and assembled \$66.00 Less Battery

## WEATHERPROOF AND INDOOR LINE MATCHING TRANSFORMERS



MODEL CTR-20

The new UNIVERSITY line of matebing transformers is designed for use with UNIVERSITY loudspeakers in indoor and outdoor installations. Since most UNIVERSITY loudspeakers are capable of frequency response to 10,000 cps. and beyond, these transformers have been designed to assure perfect performance throughout the range of the speakers with which they are used. Only the highest grade metal is employed. Grade A fine gauge silicon laminations. Insulation withstands 1000-volt breakdown tests between windings and case. Efficiency is exceptionally high.

Model CTR-20 houses the Model 5420 transformer in a heavy DIE CAST case. Mounting may be made to a wall or other flat surface by means of screws using the bracket which is an integral part of the one-piece casting. A strap bar is also supplied for mounting the CTR-20 to trumpet

"U" brackets; and for the UNIVERSITY Paging Speakers the CTR-20 cover plate accommodates the three mounting holes of the triangular mounting bracket. This makes the case a combination mounting support for both the transformer

MODEL No.	DESCRIPTION	IMPEDANCE - OHMS		LIST PRICE
		PRIMARY	SECONDARY	
CTR-20	25 Watt, waterproof case	45, 500, 1000, 1500, 2000	4, 8, 16	\$15.00
5420	25 Watt, uncased	45, 500, 1000, 1500, 2000	4, 8, 16	5.00
5414	30 Watt, uncased	165, 250, 500, 1000, 2000	16	6.00

**NOTE:** Connecting a speaker of twice the impedance across a given secondary will double all primary values. Conversely, a speaker whose impedance is half the secondary value, will halve all primary values.

itself and the speaker. Gland nut cable entrances assure watertight protection against corrosive agents.

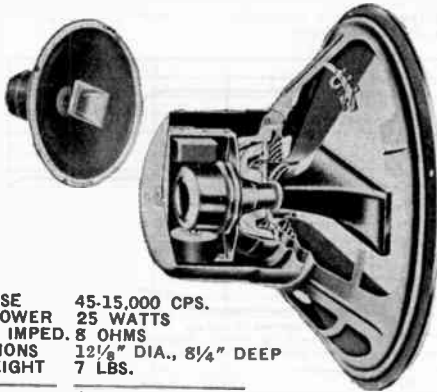
Model 5414 is a heavy duty transformer with taps especially selected for use on both constant impedance and constant voltage systems without need for further calculations. Frequency response characteristics are exceptionally good, making it ideal for use with High Fidelity equipment capable of response to beyond 15,000 cps. Heavy core enables very low frequencies to be handled with high efficiency.

No matter what the application or the impedance required, one of these new versatile UNIVERSITY line matching transformers can be used to do a dependable job.

# University SPEAKERS

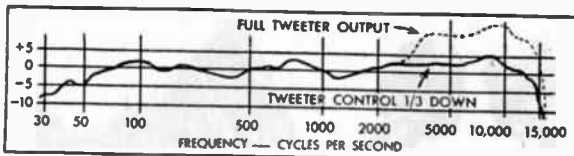
## HIGH FIDELITY LOUDSPEAKERS

### MODEL 6201 COAXIAL SPEAKER



RESPONSE 45-15,000 CPS.  
CONT. POWER 25 WATTS  
SOURCE IMPED. 8 OHMS  
DIMENSIONS 12 1/2" DIA., 8 1/4" DEEP  
NET WEIGHT 7 LBS.

LIST PRICE \$75.00

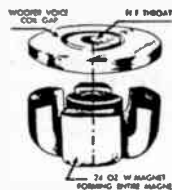


The exciting realism and tingling sense of "presence" when listening to the University Model 6201 is due, in part, to use of the same dual range principle employed in expensive theatre systems. Program material is divided into two bands. The low notes are handled by the large one-piece molded cone of the "woofer" section, and the treble tones by the highly efficient "tweeter" driver unit and horn. The result is uniform, balanced response and full range reproduction, free from distortion.

A built-in inductance-capacitance-resistance 2000-cycle crossover network assures optimum operation of the woofer and tweeter. The high frequency control, supplied completely wired to the speaker, permits variable adjustment of the "balance" between high and low frequency acoustic output. Another important feature is the coaxially mounted University "Cobra" shaped tweeter horn which provides a high frequency arc that blends with the low frequency output of the cone to form a uniform area of sound 80 wide, without the customary loss of "highs" when listening at angles considerably off speaker axis. Model 6201 can be installed quickly and easily. The mounting bolt circle is RMA standard for complete interchangeability with other 12" speakers. Tweeter horn is flush with woofer rim and entirely self-supporting. Capable of handling 25 watts of integrated program material continuously, Model 6201 is perfect for public address—monitoring—general sound reinforcement in theatres, churches, auditoriums, concert halls—and anywhere else a rugged, high power, weather resistant high fidelity speaker is required.

### EXCLUSIVE UNIVERSITY W SHAPED PERMANENT MAGNETS

W SHAPED MAGNET of gold dot Alnico V is another engineering feat responsible for the exceptional performance of these speakers. Heretofore, in ring and slug type magnets, field structures were heavy assemblies requiring "keeper" cups or "U" forms which were also a part of the magnetic return path and which had to be secured in place by bolts, cement, or welded joints. The powerful University W shaped 24-oz. magnet eliminates the necessity for a return keeper and there are no welded or cemented joints in the magnetic path, since the complete magnet structure is the magnet itself.



The W principle avoids reluctance which is present at the joints of other types, and results in a considerable reduction of stray magnetic fields and surface leakage. Greater concentration of the magnetic energy in the voice coil gap results, and flux density is thus considerably higher than in conventionally designed units. The oversized voice coil is wound on a 2-inch duralumin support for greater power handling capacity and efficiency, and set in an air gap which is independent of the actual magnet position, due to the unique design of the top plate and magnet assemblies. This assures permanent voice coil concentricity with the gap inner and outer circumferences.

### WIDE RANGE WEATHERPROOF COAXIAL SPEAKERS

The Model WLC is a HIGH FIDELITY co-axial speaker with a response range essentially flat from 50-10,000 cycles. It includes a weatherproof 12" cone speaker, a unit-driven tweeter and a built-in crossover network. Corrosion-resistant, all metal construction permits constant exposure regardless of temperature and humidity. Ideally suited for concert bands, drive-in theatres and all indoor or outdoor installations where high quality reproduction of music and voice are essential. A sturdy mounting bracket facilitates installation and permits tilting and locking the speaker in any desired position.

CONT. POWER 25 WATTS  
IMPEDANCE 8 OHMS  
RESPONSE 50-10,000 CPS.  
DISPERSION 90°  
DIAMETER 33 1/2"  
DEPTH 20"  
CROSSOVER FREQUENCY 1000 CYCLES  
WEIGHT 60 LBS.

LIST PRICE \$200.00



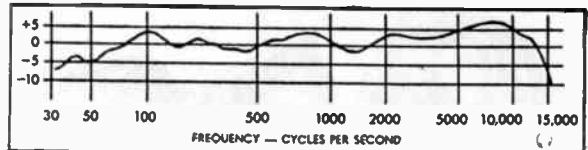
### MODEL 6200 WIDE RANGE SPEAKER



DESIGNED FOR THE DISCRIMINATING LISTENER TO PROVIDE SUPERB REPRODUCTION AT LOWEST POSSIBLE COST

RESPONSE 45-10,000 CPS.  
CONT. POWER 30 WATTS  
NOMINAL IMPED. 8 OHMS  
DIMENSIONS 12 3/8" DIA., 4 1/2" DEEP,  
RMA Standard 12" MTG.  
NET WEIGHT 5 LBS.

LIST PRICE \$35.00



Model 6200 answers the need for a top quality but moderately priced high fidelity speaker. A 3" dia. duralumin dome at the apex of a specially curved one-piece molded cone reinforces the high frequency response, extending it to well beyond 10,000 cps. Like the 6201 Coaxial speaker, the model 6200 cone is also given a special rim treatment which minimizes the possibility of diaphragm distortion and serves to add to the life of the cone by preserving its flexible member.

The rugged University W Magnet assembly, an oversized voice coil wound on dural form, and a unique method of dissipating heat generated within the speaker mechanism by utilizing filtered air circulated by the back pressure of the speaker diaphragm are factors contributing to the high efficiency of model 6200. Construction of this speaker is typical of University high standards. The Hi Freq. dome is especially treated against fungus and corrosive agents, all close tolerance parts and hardware are both cadmium-plated and irridated, and the speaker finished with the finest hard-baked enamel on two coats of anti-rust and corrosion treatments.

Model 6200 is a versatile 30-watt powerhouse suitable for both high and low level applications where price is an important factor but quality of construction and reproduction must not be compromised.



# SPEAKERS

## HIGH FREQUENCY TWEETER SPEAKERS

UNIVERSITY Tweeter are designed for use with any cone speaker to provide a dual-speaker combination having extended frequency response up to the limits of audibility. Since the average cone speaker seldom reproduces effectively above 6500 cycles, while even low priced amplifiers far exceed this range, these tweeters offer great opportunity to attain quality reproduction at very low cost. They can be connected to the voice coil of any PM or field excited cone speaker through a simple, economical, high-pass filter network. The various models shown offer ample diversity to meet the requirements of any installation.

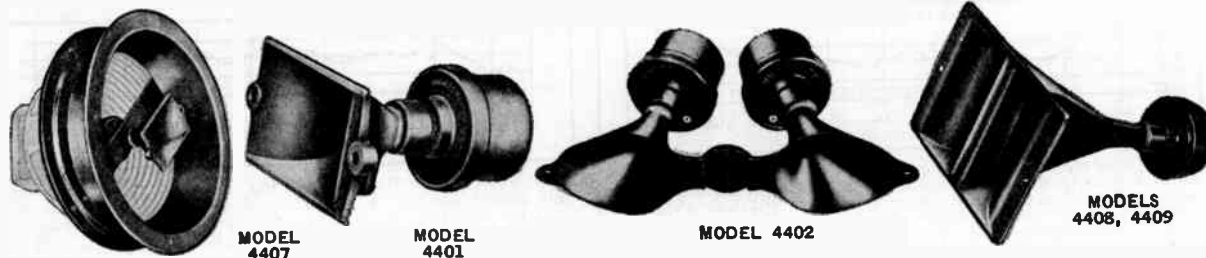
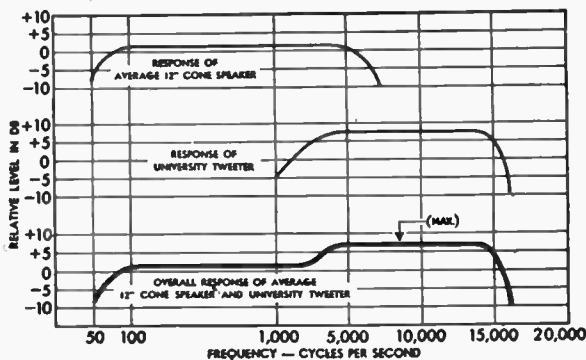
**MODEL 4407 COAXIAL TWEETER ADAPTER** fits any standard 12" cone speaker. It can be installed with minimum effort. Response is essentially flat from 2000 to 15,000 cycles which adds the brilliant "highs" so frequently carried through all stages of amplification only to be lost in the bottleneck of a single element reproducer. It is a perfect answer in every wide range application where performance, ease of installation and economy are important factors.

**MODEL 4401 SINGLE TWEETER** mounts readily in any cabinet and is recommended for use with 8" to 15" cone speakers with amplifiers rated up to 15-20 watts. Cone speaker acts as woofer reproducing low frequencies, tweeter takes over at 2000 cycles and above. Features unusually wide horizontal dispersion.

**MODEL 4402 DUAL TWEETER** is generally similar to Model 4401 except horizontal angle of dispersion is greater. The dual driver units permit variation of impedance (6-8 ohms in parallel; 12-16 ohms in series) and provide double power capacity—with woofer, 25 to 30 watts.

**MODELS 4403 and 4409 TWEETERS** are new models with lower cut-off frequency. Recommended for use with larger diameter cone speakers for a crossover frequency down to as much as 600 cycles. Their ability to handle reproduction of a greater portion of the audio range is advantageous because of the superior efficiency of the University driver unit and horn transducer, which avoids operating the woofer in the range of cone break-up. The exclusive University "Cobra" formula horn shape combines unusually wide horizontal dispersion with optimum vertical projection.

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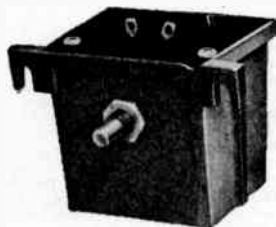


MODEL	4407	4401	4402	4408	4409
RESPONSE	2,000-15,000 CPS	2,000-15,000 CPS	2,000-15,000 CPS	600-15,000 CPS	600-15,000 CPS
IMPEDANCE	12 OHMS	12 OHMS	6-8 OHMS (Units in par.)	12 OHMS	8 OHMS
CONTINUOUS POWER	6 WATTS H.F.	6 WATTS H.F.	12 WATTS H.F.	6 WATTS H.F.	25 WATTS H.F.
HORIZONTAL DISTRIBUTN.	60°	60°	100°	80°	80°
VERTICAL DISTRIBUTN.	40°	40°	50°	40°	40°
DIMENSIONS	12" DIA., 3" D	4 1/2" W x 2 5/8" H x 5" D	9 1/2" W x 2 5/8" H x 5" D	5 3/4" H x 7 3/4" W x 1 1/8" D	5 3/4" H x 7 3/4" W x 1 1/2" D
LIST PRICE	\$25.00	\$20.00	\$40.00	\$27.50	\$40.00

NOTE: Models 4408 and 4409 tweeters permit easy assembly of 2 and 8-way speaker systems at crossovers as low as 600 cycles. Construction is sturdy cast aluminum throughout. New horn design allows wider distribution pattern. Available in 6 and 25-watt capacities.

## UNIVERSITY CROSSOVER NETWORKS

- Choice of Copocitor or LC Type Networks — only paper dielectric capacitors used.
- Complete with Variable Attenuator to balance high and low frequencies.



MODEL 4405

**MODEL 4405 HIGH PASS FILTER** — affords an economical means of preventing low frequencies from entering the tweeter circuit. All frequencies above 2000 cycles are routed to the tweeter. Frequencies below 2000 cycles are shunted to the cone speaker. This inexpensive filter or its equivalent is recommended for use with 2000 cycle tweeters. Case is die-cast aluminum.

**MODELS 4410 and 4420 FILTERS** — Crossover frequency of 4410 is 600 cycles, 4420 is 2000 cycles. Genuine L/C filter effectively blocks "highs" from entering the woofer — results in cleaner reproduction. The 4410 or equivalent must be used with 4408 and 4409 tweeters and the 4420 or equivalent may be used with 4407, 4401 and 4402 tweeters to prevent damage from low frequency entry.

MODEL	4405	4410	4420
CROSSOVER	2000 CPS.	600 CPS.	2000 CPS.
INPUT IMPEDANCE	6-12 OHMS	6-12 OHMS	6-12 OHMS
HEIGHT	2 1/4"	4 1/4"	3 3/4"
WIDTH	3 1/4"	9 1/4"	7 1/4"
DEPTH	2 1/4"	3 1/4"	2 1/4"
LIST PRICE	\$10.00	\$35.00	\$20.00



MODEL 4410, 4420

# ATLAS SOUND CORPORATION



## NEW ATLAS "ALNICO-V-PLUS" DRIVER UNITS

### Standards and DeLuxe Models with Built-in Uni-Match Transformers

All models include the new Atlas "Alnico-V-Plus" super efficient magnetic circuit. Magnetically Shielded . . . Hermetically Sealed . . . One piece unbreakable, high temperature and fatigue proof full phenolic diaphragm. All models 1 3/8"-18 thread size. The new DeLuxe models PD-8VT and PD-5VT include a built-in "Uni-Match" transformer offering facilities for universal matching to both constant impedance

and constant voltage systems. All transformer taps, as well as direct voice coil connections, are brought out to a water proof "terminal window" conveniently located on the rear of the phenolic unit housing.



#### MODEL PD-5VH

Power . . . 25 Watts  
Impedance . 16 Ohms  
Frequency . 80-9000  
List Price . \$32.50

#### MODEL PD-4V

Power . . . 25 Watts  
Impedance . 16 Ohms  
Frequency . 90-6000  
List Price . \$25.00

#### MODEL PD-3V

Power . . . 12 Watts  
Impedance . 8 Ohms  
Frequency . 100-7000  
List Price . \$22.50

#### MODEL PD-8VT

Power . . . 30 Watts  
Impedance . 16 Ohms\*  
Frequency . 80-1000  
List Price . \$47.50

#### MODEL PD-5VT

Power . . . 25 Watts  
Impedance . 16 Ohms\*  
Frequency . 80-9000  
List Price . \$42.00

\* Actual voice coil impedance. The "Uni-Match" transformer offers 150, 250, 1000, 2000 ohms and variable 70 volt line connections.

## "DR" RE-ENTRANT — REFLEX — PROJECTORS

*Non-resonant - Stormproof - Uniform Response-Rugged Construction*

The modified exponential taper developed in Atlas DR projectors has proven to be most efficient for overall performance. All acoustic sound paths are smooth and flowing without steps or pockets to create conditions of turbulence, frequency cancellation and resultant signal distortion.

The costly and elaborate tooling necessary for the production of Atlas DR projectors is clearly reflected in superior performance, lasting service and consistent results.

Heavy "U" bracket is securely fastened to a main body casting which will not fail when subjected to extreme stress, strain and vibration. 1 3/8"-18 thread.

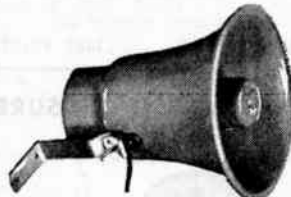


Model	Air Column	Low Frequency	Lgth.	Diam.	List Price
DR-32	2 1/2 ft.	175 c.p.s.	12 in.	14 in.	\$23.50
DR-42	3 1/2 ft.	135 c.p.s.	15 in.	21 in.	28.00
DR-54	4 1/2 ft.	105 c.p.s.	18 in.	26 in.	40.00
DR-72	6 ft.	85 c.p.s.	25 in.	31 in.	60.00

## NEW ATLAS "ALNICO-V-PLUS" PAGING & TALK-BACK SPEAKERS

Complete with unbreakable super-efficient "V-PLUS" Driver Unit

These speakers include the newly developed, unbreakable, hermetically-sealed driver units using the Alnico "V-PLUS" magnetic circuit. They offer a maximum of efficiency as a reproducer, and the utmost in performance as a microphone, in talk-back circuits. The new, improved ball swivel mounting bracket permits quick and simple directional adjustment in every position, horizontal and vertical. All aluminum construction, finished in high lustre gray enamel.



#### MODEL HU-12

Power . . . 3 watts  
Impedance . . . 8 ohms  
Frequency . . . 375 to 9000  
Length . . . 7 1/2 in.  
Diameter . . . 6 1/4 in.  
Air Column . . . 13 1/2 in.  
List Price . . . \$23.00



#### MODEL HU-15V

Power . . . 12 watts  
Impedance . . . 8 ohms  
Frequency . . . 300 to 9000  
Length . . . 11 in.  
Diameter . . . 8 1/2 in.  
Air Column . . . 15 in.  
List Price . . . \$29.75



#### MODEL HU-24V

Power . . . 12 watts  
Impedance . . . 8 ohms  
Frequency . . . 200 to 7000  
Length . . . 15 in.  
Diameter . . . 10 in.  
Air Column . . . 24 in.  
List Price . . . \$32.75

## NEW ATLAS "ALNICO-V-PLUS" DUAL PROJECTORS

Two-way Projector complete with Driver Unit

This two-way speaker projects sound of equal intensity in a dual manner. Also excellent for talk-back application. Reduces cost of installation and offers installation advantages when used in critical locations of long corridors, industrial plants, and similar locations. All aluminum construction finished in gray lustre enamel. Universal mounting bracket. Power: 12 watts. Impedance: 8 ohms.



MODEL	Overall Length	Bell Diam.	LIST PRICE
TP-15V	15 1/2 in.	8 1/2 in.	\$44.00
TP-24V	22 in.	10 in.	48.50



# ATLAS SOUND CORPORATION

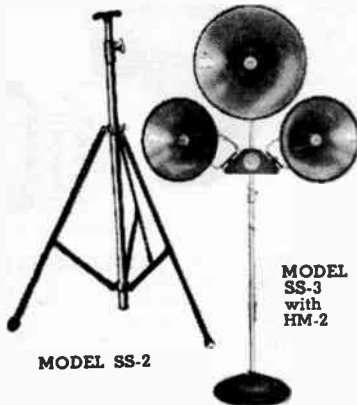
## ATLAS "MULTI-CELLULAR" TWEETER

Convenient Installation—  
Flush Mounting

Two by Three Sectoral  
Die Cast Horn

Smooth Wide Angle Distribution  
Clean and Efficient to 15,000  
cycles

### SPEAKER SUPPORT STANDS



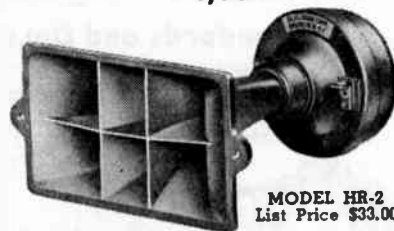
MODEL SS-3  
with  
HM-2

MODEL SS-2

Both models extend from five to ten feet. Heavy steel construction finished in gray enamel and cadmium plating. PS-1 top fitting supplied. The HM-2 permits the use of three "DR" Projectors on a single support stand.

MODEL	LIST PRICE
SS-2	\$35.00
SS-3	32.50
HM-2	15.00

The New Atlas HR-2 "Multi-Cellular" Tweeter is the latest development in a versatile high frequency reproducer possessing the most advanced electrical, mechanical and acoustical design. The "Multi-Cellular" design of the heavy die cast horn provides a smooth and uniform sound dispersion pattern, not a "hot" high frequency sound beam on the center axis. The rugged construction and reserve power handling ability permits its use in connection with high powered sound systems in theatres and auditoriums as well as in normal living rooms at low level. Can be used with any cone speaker up to a 15 ohm impedance. Model HR-2 List \$33.00



MODEL HR-2  
List Price \$33.00

### MODEL FN-1

Variable filter to limit frequencies below 1000 cycles from actuating tweeter.

List Price \$10.00



### MARINE Midget PROJECTOR for 5" Cone Speakers

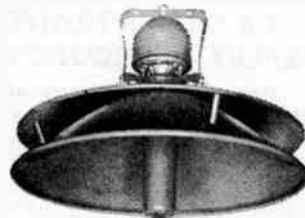
- Re-entrant.
- Weatherproof.
- Efficient.
- Compact.

Will accommodate any standard 5" cone speaker. The efficient means of loading the cone diaphragm greatly increases the normal efficiency of any cone speaker. Offers protection against weather and mechanical abuse. Universal steel mounting bracket supplied. Bell diameter 10 inches . . . Overall length 8 inches . . . Finish: Gray enamel. Supplied less cone speaker unit.



MODEL WX-5 LIST PRICE \$13.50

### RADIAL DRIVER UNIT PROJECTOR



- Non-resonant.
- Dual Rubber Rims.
- 100% Storm-Proof.
- Uniform 360° Coverage.

The advantage of 360° coverage often permits the use of one speaker where normally a multiple of directional projectors may be required. The radial projectors are of all-aluminum construction finished in a weather-proof gray enamel. Thread size 1 3/8"-18. The use of the H-2U two-unit adaptor will double the power output for single projector high power application.

MODEL	RC-36	RC-48
Air Column	3 ft.	4 ft.
Bell Diameter	24 in.	28 in.
Overall Height	18 in.	21 in.
LIST PRICE (horn only)	\$40.00	\$50.00

### PIPE STANCHION FITTING



"DR" re-entrant or "RC" radial "U" brackets adapted to 3/4" pipe fittings. This steel adaptor has holes properly located to match holes in "U" bracket. All mounting bolts supplied. Female 3/4" pipe thread.

MODEL PS-1 LIST PRICE \$1.50

### TWO UNIT TO ONE PROJECTOR ADAPTOR

When it is found necessary to obtain the greatest possible power output from a single projector the H-2U is recommended. This device permits the use of two driver units with any type of projector. Construction: Cast aluminum. All threads 1 3/8"-18.



MODEL H-2U  
LIST PRICE \$10.00

### TWO-WAY ENCLOSURE for 8" Cone Speakers

The front and back wave of the speaker is utilized to assist in good sound coverage in long corridors and central locations. Adjustable wall or ceiling mounting brackets supplied. All steel finished in gray enamel. Cloth screens on both sides. Speaker mounting screws included. Outside diameter 10", Depth 5".

MODEL TW-8 LIST PRICE \$8.25



### SPEAKER POWER VOLUME CONTROL

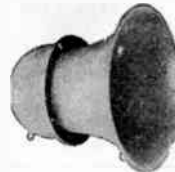
For adjusting volume of individual speakers. Power handling: 10 watts constant. Complete as illustrated.

MODEL RC-1  
LIST PRICE \$5.00



### PARABOLIC Baffles for 12" Cone Speaker

All steel construction, waterproof interlock seal between sections. All mounting bolts and hanging loops supplied. Finished in gray enamel.



Model SM-12  
Diam. Bell. 20 in.  
Length 18 in.  
Speaker Size 12 in.  
List Price \$15.50

Adjustable mounting fixture for above complete saddle fixture and base pedestal.

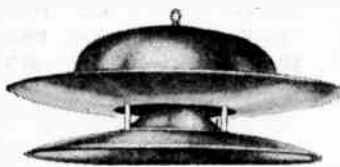
Model ST-8 List Price \$5.75

### RADIAL CONE SPEAKER PROJECTOR for 12-Inch Cone Speakers . . . 360° Coverage

This radial projector offers an excellent baffle for any standard 12" diameter standard cone speaker and produces smooth and uniform 360° coverage. With a good grade of cone speaker it will adequately load the reproducer down to 60 cycles. The enclosure is designed to shed water and can, therefore, be used indoors and out. Finished in gray enamel . . . Outside diameter 29 inches . . . Overall height 13 inches.

MODEL L-360

LIST PRICE \$35.00



# ATLAS SOUND CORPORATION



## "FULL GRIP — VELVET ACTION" Microphone Stands

No slipping - No rattle - No noise - No scratching - No wear



**MS-10C**  
Leader

**MS-12C**  
Standard

**MS-11C**  
Standard  
DeLuxe

**MS-20**  
Professional

**MS-24**  
Studio  
DeLuxe

**CS-1**  
Collapsible

**CS-32**  
2-piece  
Demountable

**CS-33**  
3-piece  
Demountable

The "Full Grip" Clutch offers an extended length clutch body, permitting a secure, full-hand grip. The clutch mechanism is inner-lined with a wear-proof bakelite locking collet which grips without jamming, slipping, or sudden dropping. All bases are functionally designed to offer maximum stability for a given base weight. The maximum base mass is located at the outer periphery of the casting where the concentrated

weight is most useful. All bases include self-leveling, shock-absorbent base pads, plus three additional "anti-tip" points located between the base pads. The complete tube assemblies of all models are "super-chrome" plated, assuring "life-time" wear. All models terminate in a  $\frac{3}{8}$ "-.27 carefully machined thread.

MODEL	Weight	Base Finish	Tube Finish	Height Adjst.	Base Diam.	LIST PRICE
<b>MS-10C</b>	9 lbs.	Gray Shrivel	Full Chrome	35" to 64"	10"	\$ 8.75
<b>MS-12C</b>	12 lbs.	Gray Shrivel	Full Chrome	35" to 65"	10"	9.50
<b>MS-11C</b>	12 lbs.	Full Chrome	Full Chrome	35" to 65"	10"	11.50
<b>†MS-20</b>	15 lbs.	Gray Shrivel	Full Chrome	42" to 72"	12"	13.50
<b>†MS-24</b>	24 lbs.	Chrome & Gray Shrivel	Full Chrome	42" to 72"	17"	19.00
<b>§CS-1</b>	5 lbs.	Cadmium Plated	Full Chrome	23" to 62"	Collapsible	17.00
<b>*CS-32</b>	4 lbs.	Chrome & Gray	Full Chrome	36" to 64"	Demountable	9.00
<b>*CS-33</b>	3 lbs.	Hammerloid	Full Chrome	26" to 64"	Demountable	10.50

\*Each stand is individually packed complete in a single carton.

†The MS-20 and MS-24 use large diameter, oversize, telescoping brass tube assemblies ( $\frac{7}{8}$ " telescoping tube --  $1\frac{1}{8}$ " base tube) resulting in a handsome and fine-appearing stand that supple-

ments the professional appearance of large-size high quality microphones.

§Collapsible to a minimum overall length of 23 inches.



## NEW AUTOMATIC "Sleeve Action" MICROPHONE STAND

Quiet . . . No Rasp . . . Smooth . . . No Jolt or Jar

This amazing new automatic "Sleeve Action" clutch mechanism is a fully automatic means of adjusting the height of a microphone stand. A slight downward pressure on the "Sleeve Action" control permits the telescoping section to be lowered. To raise the stand, the telescoping tube can be grasped at any point and simply extended. The new "Sleeve Action" is built

for life-time use. It cannot creep or change position without a deliberate pressure on the actuating sleeve control.

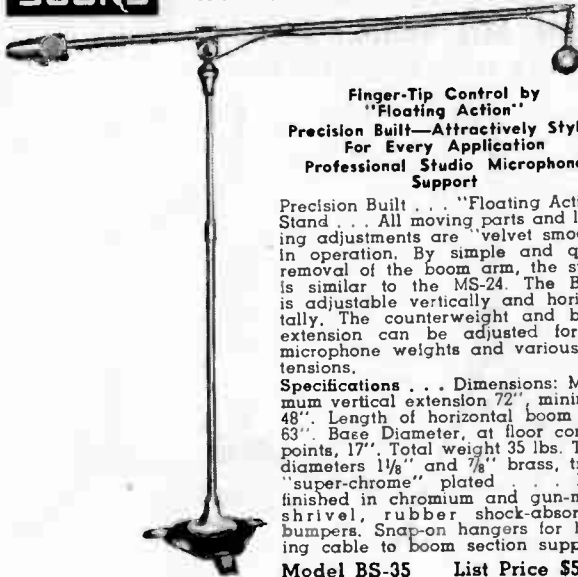
The quality of materials, plating, and general specifications are identical to the "Full Grip" models described above. The "Sleeve Action" stand is available in two models; either full chrome or shrivel base.

MODEL	Weight	Base Finish	Tube Finish	Height Adjst.	Base Diam.	LIST PRICE
<b>MS-12S</b>	12 lbs.	Gray Shrivel	Full Chrome	35" to 65"	10"	\$16.00
<b>MS-11S</b>	12 lbs.	Full Chrome	Full Chrome	35" to 65"	10"	18.00



# ATLAS SOUND CORPORATION

## PROFESSIONAL BOOM STAND



Finger-Tip Control by "Floating Action"  
Precision Built—Attractively Styled  
For Every Application  
Professional Studio Microphone Support

Precision Built . . . "Floating Action" Stand . . . All moving parts and locking adjustments are "velvet smooth" in operation. By simple and quick removal of the boom arm, the stand is similar to the MS-24. The BS-35 is adjustable vertically and horizontally. The counterweight and boom extension can be adjusted for all microphone weights and various extensions.

Specifications . . . Dimensions: Maximum vertical extension 72"; minimum 48". Length of horizontal boom arm 63". Base Diameter, at floor contact points, 17". Total weight 35 lbs. Tube diameters 1 1/8" and 7/8" brass, triple "super-chrome" plated. Base finished in chromium and gun-metal shrivel, rubber shock-absorbing bumpers. Snap-on hangers for holding cable to boom section supplied.

Model BS-35 List Price \$55.00

## MICROPHONE ADAPTORS AND FITTINGS

MODEL	Description	LIST PRICE
AD-1	3/8"-27 female to 1/2" pipe thread male (RCA Adaptor)	\$0.75
AD-2	1/8" pipe female to 3/8"-27 male	.50
AD-3	1/8" pipe female to 3/8"-27 female	.50
AD-4	3/4" long, 3/8"-27 male running thread	.25
AD-5	3/8"-27 female to 3/8"-27 female, coupling	.50
AD-6	3/8"-27 female to 3/8"-27 female coupling	.50
AD-7	3" long tube 3/8"-27 male each end	.50
AD-8	6" long tube 3/8"-27 male each end	.60
AD-9	3/8"-27 female to 3/8"-27 female	.50
AD-10	3/8"-24 female to 3/8"-27 female (W. E. Adaptor)	1.00
AD-11	Flange, 3/8"-27 female. Base Diameter 1 1/4"	.60
AD-12	Flange, 3/8"-27 male. Base holes on 7/8" mounting centers	.60

All adaptors chrome plated. We are prepared to supply any special types of adaptors or fittings, and bent tube sections, to your specifications in reasonable quantities.

## MODEL US-1 BOOM BRACKET KIT



Will answer practically every conceivable problem of microphone placement. Set Screw assembly makes it possible to simply cut down any tubular section to any dimension and, thereby, tailor the bracket to suit the exact application. Microphone cable feeds through entire support arm including the adjustable elbow mechanism. Finished in bronze enamel. Main tube sections 22" long, support bracket tubes 5" long.

List Price \$10.00

## SPEAKER'S or ORCHESTRA DESK ATTACHMENT



This desk attachment can be applied to any type of microphone stand. This is an item which has long been required in many permanent as well as rental installations. It offers the speaker facilities for holding notes or other reference material. A microphone can be directly attached to the desk by using the BC-1 Bracket Clamp. The DA-1 is complete with 3/8"-27 thread attachment and tilt-adjustment. Sturdy construction, finished in bright aluminum.

Model DA-1 (less floorstand) List Price \$10.00  
MODEL DA-1 (shown with MS-20 floor stand)

## ADJUSTABLE BANQUET STAND

This stand incorporates the "Full Grip-Velvet Action" principle of adjustment. The tube and base are completely finished in "super chrome" offering a fine appearing stand suitable for use on a banquet table. Adjustable from 18" to 32" Base diameter 8"; Weight 5 lbs.

Model TS-6 List Price \$8.00



## BRACKET CLAMP

A multitude of useful applications. Can be used with Boom Arm, Goose Neck, etc. Chrome tube 6" long. Castings finished in gray shrivel. Can be clamped or permanently screwed or bolted in position. Thread size 3/8"-27.

Model BC-1 List Price \$3.00

## "SNAP-ON" MICROPHONE ATTACHMENT

A quick, simple, and safe means of attaching any microphone to any floor stand. Eliminates the need of threading the microphone on and off the stand. A two-section "Snap-On" ball bearing spring sleeve attachment permits the microphone to be attached or removed instantaneously. One section is attached to the microphone and one section permanently fastened to the stand.

Model SO-1 List Price \$2.50



## FLEXIBLE GOOSE NECK

Can be attached to any microphone stand so that some amount of overhang can be accomplished. Ends have 3/8"-27 male and female threads. Finished in bright chrome. Length 13".

Model GN-13 List Price \$2.50



## "BABY BOOM" ATTACHMENT

Easily attached to any type of microphone stand. Can be locked in any position. Length of tube 32", chrome plated; castings in gray shrivel. 3/8"-27 thread size.

Model BB-1 List Price \$7.00



## "VELVET ACTION" DESK STANDS

### MODEL DS-7

ATLAS Desk Stands employ the same fine finish and workmanship as embodied in the floor models. The adjustable Model DS-7 uses heavy duty 3/8" and 7/8" tubing. Felt base pads included. Base diameter 6", finish gray shrivel; tube chromium plated.

Model	Height Adj.	List Price
DS-5	Fixed 6"	\$2.75
DS-7	8" to 13"	4.50



# American MICROPHONES

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## VR2 DYNAMIC MICROPHONE

### A Microphone with a NEW IDEA and a NEW USEFULNESS

For the first time, the many desirable characteristics found only in several different types of microphones have been combined in a single unit. The VR2 has an easily accessible external adjustment of the most important acoustical reactors in the dynamic microphone. A smooth change from a communication-type response, with a cutoff below 500 c. p. s., through a flat response to an augmented bass, attained by a simple, positive adjustment.

The response adjustment on the VR2 has a very broad effect and does not introduce narrow peaks. It is different from anything previously introduced.

Complete with 12½' cable and plug at microphone providing balanced line. Dull chrome finish. Net wt. less cable, 15 ozs. Hgt. 4". Greatest diameter 3".

**VR2T** Dynamic (38,000 ohms), Code: VARIT. List \$42.15

Available on order in 200 or 500 ohms.....List \$42.15  
(Complete with 12½' cable)

**VR2** Dynamic (30-50 ohms), Code: VARIA.....List \$39.15  
(Complete with 12½' cable)



The above graph illustrates the average response characteristics for the various settings as indicated on the scale.

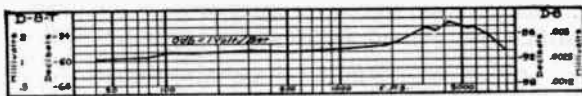
## D8T DYNAMIC MICROPHONE



**THE D8T DYNAMIC MICROPHONE** has been carefully designed to have a consistent, well-balanced response. It is exceptionally rugged and assures the user of trouble-free service over a long period of time.

The D8T is particularly useful for all types of public address installations, orchestra pick-up, as well as solo work and straight announcing.

The D8T is 3¼" long, 2" in diameter, weighs only 13 ozs. A swivel mounting permits either nondirectional or semidirectional pick-up. Comes complete with 12½' cable and plug at microphone and ⅝" x 27 thread for suspension or stand mounting. Platinum Chrome Finish.



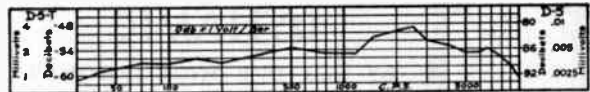
**D8T** Dynamic (38,000 ohms), Code: DATAH.....List \$30.00  
Available on order in 200 or 500 ohms.....List \$30.00

**D8** Dynamic (30-50 ohms), Code: DATAI.....List \$27.00

## D5T DYNAMIC MICROPHONE

IN FOURTH YEAR PRODUCTION

**THE D5T DYNAMIC MICROPHONE** is well known. An excellent, diversified-purpose microphone. The dynamic is the most rugged type microphone and its life of trouble-free operation is indefinite. Being a pressure-operated instrument, the response is unaffected by either a close or distant sound source. The D5T approaches the ideal microphone for general use due to its versatility and dependability. Sensitivity: 52 db below 1 V/bar.



**D5T** Dynamic, 38,000 ohms, Code: DYHIM.....List Price \$39.00

Available on order in 200 or 500 ohms.....List Price \$39.00

**D5** Dynamic, 30-50 ohms, Code: DYLOM.....List Price \$33.00

Moving-Coil, Permanent Magnet Dynamic ● Semidirectional ● Close or Distant Pick-up ● Excellent Frequency Response ● Freedom from Wind Noises ● High Output, Low or High Impedance ● Immune to Temperature Changes ● Minimum Feed-Back (Flat Response) ● Low-Level Mixing ● Exceptionally Rugged.





# American MICROPHONES

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## MC (MOVING COIL) PICKUP CARTRIDGES

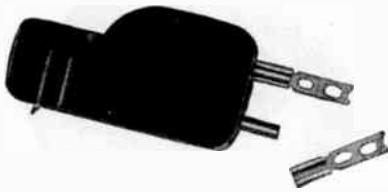
**HIGH** { Needlepoint  
Compliance  
Output  
Vertical  
Compliance

**LOW** { Needle Pressure,  
one-half ounce  
Impedance,  
35 ohms  
Needle Talk  
Distortion

Model	List Price	Needle Pressure Ounces	*Output Voltage	Response ±5 db	Terminals	Stylus **Semi-Replaceable	Code
MC-1C	\$ 7.50	½	0.1	50-5000	Pin Plug	Carboloy	Cabal
MC-1S	7.50	½	0.1	50-5000	Pin Plug	Sapphire	Cabin
MC-2C	10.00	½	0.1	50-7000	Pin Plug	Carboloy	Cable
MC-2S	10.00	½	0.1	50-7000	Pin Plug	Sapphire	Cache

\*At 1000 cps using Columbia 10003-M Test Record and Model TMC transformer.

\*\*Worn styli can be replaced at our factory.



Insures Minimum Record Wear. Performance not affected by climatic conditions. Standard cartridge mounting holes. Semi-permanent stylus.

.003 volt open circuit output at 1000 cps, using Columbia Test Record 10003-M. Transformer TMC (Sub-motorboard mounting) develops 0.1 volt into high impedance amplifier "Phono" input under above test conditions.

TRANSFORMER TMC, Code: CADET.....List Price \$7.50

## C6 CRYSTAL MICROPHONE

**EXTREME SENSITIVITY.** New crystal driving lever, twice as efficient as previously used, produces twice the voltage output with equal sound pressure.

**BROADER RESPONSE.** Results of new construction include extension of both low and high end.

**BASS END IMPROVED.** Naturalness insured by improvement in low frequency response.

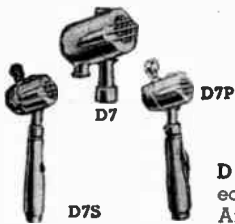
**LONGER LINES.** By increasing the voltage output, the cable length may be increased proportionately. In laboratory tests, regular cables 250 feet in length have been used with a net voltage sufficient to operate any standard high gain amplifier.

**MECHANICAL NOISE REDUCED.** Mechanical and stand noise is no longer a factor. The C6 method of crystal mounting reduces mechanical noises by 12 db.

**LESS AMPLIFIER AND INDUCED NOISE.** The high output of this microphone assures a very desirable signal-to-noise ratio.

**SWIVEL HEAD.** All angles for semidirectional and nondirectional pick-up are provided by the 5/8" x 27 (standard) mounting connector.

Complete with 7' cable and plug at microphone. Polished chrome finish. Net weight 8 oz. Over-all height 3". Diameter 2 3/8". 5/8x27 thread provided for suspension or stand mounting.  
C6 Crystal, Code CESIX.....List Price \$18.00



## THE "Clipper" DYNAMIC

**D7 and D7T MICROPHONES** equipped with 12 1/2' R/I cable and Amphenol plug. Chrome finish.

5/8"-27 connector. Over-all height, 2 1/2". Diameter, 1 1/2". Net weight, 8 1/2 ozs.

**APPLICATIONS:** Excellent for communication purposes, airplane use, Marine safety-at-sea installations, police broadcasting, amateur communication, public address, indoor and outdoor installations.

**D7T**—High Imp., 38,000 or 500 or 200 Ohms;  
Code: DISET.....List Price \$27.00

**D7TP** (Press-contact Switch),  
Code: DIMAT.....List Price \$31.00

**D7TS** (Slide Switch), Code: DIAHT.....List Price \$30.00

**D7**—Low Impedance, 50 Ohms,  
Code: DISEV.....List Price \$24.00

**D7P** (Press-contact Switch),  
Code: DIMAR.....List Price \$28.00

**D7S** (Slide Switch), Code: DIAHL.....List Price \$27.00

## RC CRYSTAL MICROPHONE

Complete with  
**NON-BREAKABLE  
PLASTIC STAND  
and 7 foot Cable**



RC Crystal Microphone may also be mounted on any stand equipped with standard 5/8" x 27 thread. . . . An excellent microphone for Communication, Public Address or Amateur Radio.

HOME RECORDING OR BROADCASTING  
HIGH OUTPUT, GOOD QUALITY

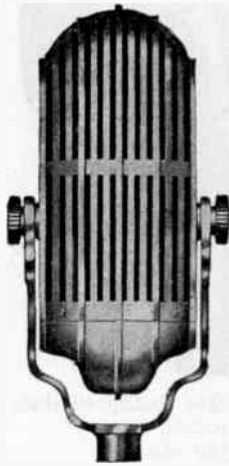
Base easily removed by quarter turn, releasing bayonet lock. Cable replacements accomplished by releasing set screw in back of microphone and pulling gently on spring cable protector .....List Price \$10.90

# American MICROPHONES

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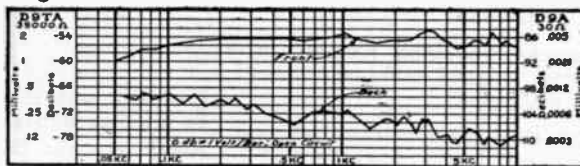
## D9A Unidirectional MICROPHONE

**GUARANTEED to produce 30% MORE VOLUME (power) than any microphone at twice the list price. UNIDIRECTIONAL, True CARDIOID pattern pickup, frequency response good to 10,000 c. p. s. Actual Tests are Convincing Arrange for Test with your Jobber**



THE D9A DYNAMIC, a pressure-velocity combination microphone, with pick-up from front only, broad frequency response and high output, plus the usual dynamic microphone qualities of ruggedness, immunity to weather conditions, and circuit adaptability, should fill the majority of requirements.

The D9A Microphone is recommended for public address and general sound installations because its energy response field (cardioid of revolution) excludes extraneous pick-up and reduces feed-back by two-thirds. May be used for close talking due to the modified velocity section which also reduces wind noises to a minimum.



The above graph illustrates the average response characteristics for the D9A and D9AT. Voltage output levels, for 1 bar sound pressure (1 bar=1 dyne per sq. cm.) of the high and low impedance models. For 10 bar signal the output will be 20 db. higher.

Net weight, 2 1/2 lbs. Packed weight, 4 lbs. Height, 7 1/2"; depth, 2 1/4"; breadth, 2 1/2". Standard 5/8-27 thread provided for suspension or stand mounting. Finish: Satin Chrome.

25' Shielded Rubber-jacketed Cable Supplied with each Microphone.

D9A, Low Imp. (50 ohms). Code: LOWEL. List \$42.00

D9AT, High Imp. (38,000 ohms). Code: HIWEL. List \$45.00  
Available on Order in 200 or 500 ohms. List \$45.00

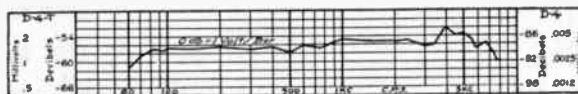
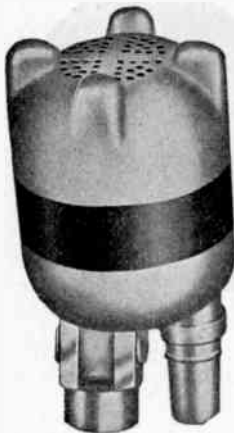
## D4T DYNAMIC MICROPHONE

A QUALITY, LOW-PRICED, MOVING-COIL MICROPHONE. For general use where clear speech and natural music reproduction is required. This new AMERICAN microphone is a very efficient instrument, having a broad range, from 60 to 7500 c.p.s., and high output of -56 db (0 db=1 v/bar). The utility value lies not only in the quality and type of response but also in mechanical features, such as light weight (approximately 10 1/2 oz.), a full 180° vertical angular setting, and positive friction lock at the swivel.

The D4T, high impedance, is equipped with a single-contact, shielded plug. The 50, 200 and 500 ohm models are equipped with a two-conductor plug and have a balanced line out.

The D4 model is of voice-coil impedance, approximately 30 ohms. Lines up to several hundred feet may be used on all models except the high impedance, where line should be restricted.

The complete assembly includes 12 1/2 feet of shielded, rubber-covered cable and shielded plug. Finished in platinum chrome. Standard mounting, 5/8" x 27 thread.



D4T Dynamic (38,000 ohms), Code: DFORT. List Price \$24.00

Available on order in 200 or 500 ohms. List Price \$24.00

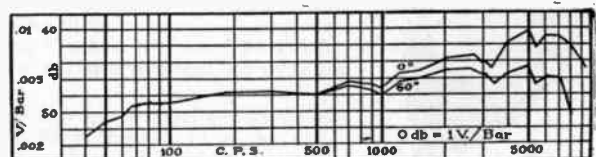
D4 Dynamic (30-50 ohms), Code: DEFOR. List Price \$21.50

## D6T DYNAMIC MICROPHONE

Ideal for general public address including stage sound-reinforcement, both permanent and portable installations. It is entirely suitable for playground and athletic field direction, police and amateur broadcasting, and recording.

Net weight, 1 3/4 lbs. Packed weight, 2 lbs. Height, 3 3/4", diameter 2 1/2". Standard 5/8-27 thread provided for suspension or stand mounting. Finish: Polished Chrome. 12 1/2' Shielded Rubber-jacketed Cable supplied with each microphone.

characteristics may be had by varying the angle of the microphone to the source of sound. For nondirectional horizontal pick-up, the response is substantially flat.



D6T Dynamic (38,000 ohms), Code: DIXIT. List \$33.00

Available on order in 200 or 500 ohms. List \$33.00

D6 Dynamic (30-50 ohms), Code: DIXIE. List \$30.00



Typical field calibration for the D6T. A choice of frequency

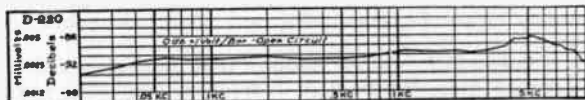
# American MICROPHONES

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## D220 DYNAMIC MICROPHONES

### A WIDE RANGE HIGH FIDELITY MOVING-COIL MICROPHONE

- ★ Two Dynamic Generators each with Specific Frequency Response.
- ★ Combined Outputs Electrically and Acoustically Coupled Produce an Ideal Response.
- ★ Total Band 25 to above 10,000 cps. Broad Crossover from 150 cps. to 5000 cps.
- ★ Crossover Band an Average for Both Generators Eliminates Peaks.



### THREE TYPES OF RESPONSE FOR ALL PURPOSES

**HIGH**—For all purposes requiring richness in the higher frequencies. Slightly rising characteristic. (From 150 to 10,000 cps.)

**FULL**—For high fidelity requirements where smooth, flat response and broad range are necessary. (30 to above 10,000 cps.)

**LOW**—For pickup systems requiring embellished lows and good intermediate range. (25 to 5000 cps.)

Complete with 25' cable. Balanced lines on low impedance models.

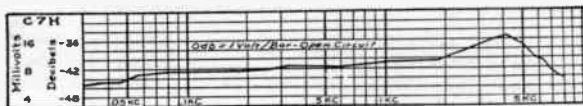
- D220T** Dynamic (38,000 ohms),  
Code: CROST ..... LIST \$71.00  
Available on order in 200-250 or 500 ohms ..... LIST \$71.00
- D220** Dynamic (30-50 ohms),  
Code: CROSS ..... LIST \$65.50

## C7 CRYSTAL MICROPHONES

The development of the new American Crystal Microphones, Model C7H and Model C7L, represents many features which have been available only in several previous types. The response characteristics have been chosen so that the C7 can be used equally well for recording with a minimum amount of amplifier equalization and also for public address. **A new system of coupling the crystal element to the diaphragm is employed which produces a smoother response and 100% greater efficiency equivalent to double the output of usual direct drive type of coupling.** High or low impedance may be had in the Model C7. An efficient transformer is used to reduce the inherent high impedance of the crystal generator to standard line impedances. Long lines with negligible losses may be used.

Complete with 12 1/2 ft. cable

- C7H** High Impedance. Code: CSEVN ..... LIST \$24.50
- C7L** Available in 50 ohm or 200-250 ohm or 500 ohm.  
Code: CSEVL ..... LIST \$29.00



## DHT DYNAMIC HAND-HELD MICROPHONE

### Shock-proof Diaphragm - Press-to-talk Locking Type Switch Retractable Hanger



This compact, sturdy microphone was designed for all applications requiring a dependable hand microphone for voice communication. Small and lightweight, it can readily be concealed in the palm of the hand. An Alnico V magnet, efficient magnetic circuit and newly developed diaphragm and voice coil assembly combine to generate the high output of 56 db below 1 volt per bar for the high impedance model.

Other desirable features are: convenient hanger which retracts into the case of the microphone when not in use; molded plastic diaphragm not affected by heat, moisture or mechanical shock; supplied with five feet of low loss cable; press-to-talk locking type switch for operation of the microphone unit. Additional switch contacts on request.

- DHT** Dynamic (38,000 ohms), Code: CALEB ..... LIST \$25.00  
Available on order in 200 or 500 ohms ..... \$25.00
- DH** Dynamic (30-50 ohms), Code: CALYX ..... LIST \$22.50

# American PHONOGRAPH PICKUPS

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## J-1 PHONOGRAPH PICKUP



**LIST PRICE**

**\$5.50**

The curved arm with off-set head was designed to provide optimum tracking for both ten and twelve inch records with minimum wear of record and stylus. Base of the arm is designed for single hole mounting. Assembly includes CR-1A Crystal Cartridge, twenty-four inch single conductor shielded wire, arm rest, mounting hardware and complete mounting instructions.

## CR1A CRYSTAL CARTRIDGE

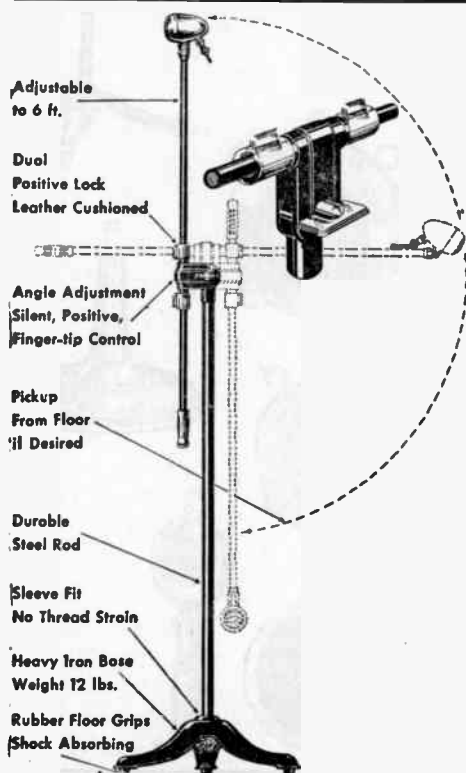
CR-1A Cartridge is a high output, wide range unit, which incorporates a number of new developments in cartridge design. High output and improved response are obtained by a unique method used to drive the crystal element. The cartridge is supplied with pin plug connectors for ease of



assembly into the arm—no soldering iron is required. The needle chuck design incorporates a "locked-in" feature whereby the chuck is prevented from moving when tension or pressure is applied to the needle screw. This feature also insures that the needle socket will remain centrally located in its opening in the cartridge. High needle point compliance and minimum record chatter are thereby guaranteed. The cartridge will operate satisfactorily with any conventional needles; however, its high-frequency response will vary somewhat with the type needle used. Best operation will be obtained with off-set needles using sapphire or precious metal stylii.

Model	CR1A	CR2A	CR3A	PNMA
Needle Force, Ounces	1¼	1½	1½	1¼
Output Voltage	3.	1.5	1.	2.
Response	50-6000	50-6000	50-6000	50-6000
Terminals	Pin Plug	Pin Plug	Pin Plug	Pin Plug
Needle Screw	Thumb	Thumb	Thumb	Thumb
Needle	Optional	Optional	Optional	Optional
Code	Cream	Creep	Crimp	Crest
List Price	\$4.00	\$4.00	\$4.00	\$8.00

# American FLOOR STAND



## New! FLOOR STAND WITH MANY USES

PLACE THE MIKE ADVANTAGEOUSLY FOR EFFICIENT PICKUP EXCELLENT FOR RECORDING AND ORCHESTRA PICKUP

**HB3** .....List Price **\$24.50**

Upper rod and fittings, polished chrome. Lower rod and angle adjustment, satin black. Microphone mounting, standard 5/8" x 27 thread.

Total net weight 16 lbs. Code: BOOME

Upper Assembly, including 34" chrome rod, as illustrated at right of stand.

**B3** .....List Price **\$15.00**

Microphone Mounting, Standard 5/8" x 27  
Stand Mounting, Standard 1" x 27.

Code: TOPSE

# American MICROPHONES

1. **C6 CRYSTAL MICROPHONE.** The best buy in a crystal microphone. New crystal driving lever, twice as efficient as previously used, produces twice the voltage output with equal sound pressure. Long cables, 250 feet or longer, may be used with this microphone. The increased output voltage assures only slight proportional losses in cable lengths. Provided with plug at microphone and mounting swivel with standard  $\frac{5}{8}$ "x27 thread. Chrome finish. Net weight 8 ozs. Complete with 7' cable and microphone plug. Accessories 7, 8, 9, 10, 11, 12, 13, 14, and 16 available for use with this model.  
C6 Crystal Microphone. Code: CESIX..... List Price \$18.00
2. **AG CRYSTAL MICROPHONE.** Preferred by crystal buyers for four years. Communication-type response. Equipped with mounting yoke, providing rear or through cable outlet. Standard  $\frac{5}{8}$ " x 27 thread. Accessories 7, 8, 9, 10, 11, 12, 13, 14, and 16 available for use with this microphone.  
AG Crystal Microphone. Code: AGTAL..... List Price \$24.50
3. **B9 CRYSTAL MICROPHONE.** Semi-directional. Recommended for public address. Chrome finish.  $\frac{5}{8}$ "x 27 thread. Complete with 8' cable and plug at microphone. Accessories 7, 8, 9, 10, 11, 12, 13, 14, and 16 available for use with this microphone. Code: BENIN..... List Price \$24.50
4. **CL2 CRYSTAL LAPEL MICROPHONE.** Built especially for lapel use. Maximum sensitivity in voice range.  $2\frac{1}{2}$ " diameter. Weight  $1\frac{1}{2}$  ozs. Complete with 25' cloth-covered, shielded cable and clip for attaching to clothing.  
CL2 Crystal Lapel Microphone. Code: LATAL..... List Price \$27.25
5. The B9 as a hand microphone. Chrome finish. Available with two types of switches. 8' cord. B9P with press-contact switch in handle, and B9S with slide switch in handle.  
B9P Crystal Hand Microphone. Code: BECON..... List Price \$28.50  
B9S Crystal Hand Microphone. Code: BEHAN..... List Price \$27.25
6. The AG as a hand microphone. Chrome finish. Available with two types of switches. 8' cord. AH using slide switch, and AGP using press-contact switch.  
AH Crystal Hand Microphone. Code: AHTAL..... List Price \$27.50  
AGP Crystal Hand Microphone. Code: AGPAH..... List Price \$28.50
7. **AG DESK STAND.** Consists of upright (handle) and base. Chrome finish  
Code: AGESK..... List Price \$4.50
8. **AG HANDLE.** Upright of AG Stand. Easily attached to AG Base by half turn, bayonet lock. Chrome finish. Code: AGHAN..... List Price \$2.50  
AG BASE. For use with AG Handle. Code: AGBAS..... List Price \$2.00
9. **AH HANDLE.** Upright of AG Stand with slide switch. Chrome finish.  
Code: SHAND..... List Price \$3.00
10. **DH HANDLE.** Upright of AG Stand with press-contact switch. Chrome finish.  
Code: DEPAH..... List Price \$4.10
12. **SUSPENSION EYE.** For suspending any microphone with standard  $\frac{5}{8}$ "x27 thread. Chrome finish. Sturdy. Code: DYEYE..... List Price \$1.20
13. **BS BANQUET STAND.** Round base 8" in diameter. Rods 12". Extended height 24". Satin Black finish. Code: FUDAS..... List Price \$9.30
14. **FH3 and FL3 FLOOR STANDS.** Approved by the best sound studios. Positive, leather, friction-lock clutch. Noiseless operation. Rods 38". Extended height 6'. Three-contact, "floor grip," rubber-mounted base. FH3, studio model, net weight 15 lbs. FL3, public address model, net weight 10 lbs.  
FH3 Floor Stand. Code: FUHET..... List Price \$18.50  
FL3 Floor Stand. Code: FLEXR..... List Price \$12.50
15. **EL4 CARBON MICROPHONE.** Double button. Semi-stretched diaphragm. Good quality. Mounting yoke included. No ring or springs necessary.  
Code: LITEG..... List Price \$8.75
16. **DD DESK STAND.** Round base, 4" upright. Net weight  $1\frac{1}{4}$  lbs.  $5\frac{1}{4}$ " base. Chrome finish. Code: DYNES..... List Price \$3.00  
DS Desk Stand. Same as DD Stand except with  $4\frac{1}{4}$ " base. Chrome finish.  
Code: DINAC..... List Price \$3.00
17. **SJ CARBON MICROPHONE.** Single button. Sensitive. Chrome finish.  
Code: JOHNE..... List Price \$6.00
18. **FP CARBON MICROPHONE.** New single-button, sensitive, carbon microphone. Operates in any position. For use in French phones and other types of telephone and listening devices. Code: FRONE..... List Price \$3.50
19. **CARBON HAND MICROPHONES WITH SLIDE SWITCH.** Chrome finish.  
DB2, Double-button, Hand Mike. Code: DBTWO..... List Price \$18.00  
SB2, Single-button, Hand Mike. Code: SUTRO..... List Price \$12.00  
Either above models with press-contact switch list \$1.00 extra.



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**AMERICAN MICROPHONE CO., INC.**

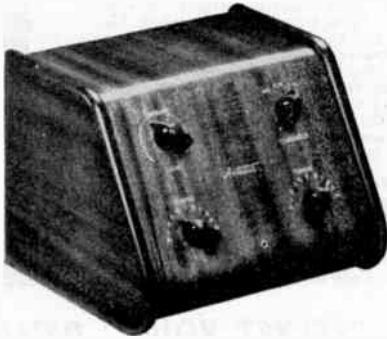
**ASTATIC**

**TV BOOSTERS  
and  
MICROPHONES**

*Astatic*

KNOWN THE WORLD OVER CONNEAUT, OHIO

**TELEVISION BOOSTERS  
MODELS AT-1 AND AT-1B**



● A superior, new type of television booster offering a vast new scope of enjoyment for receiver owners. Ability to improve reception more effectively and extend the fringe area starts with the principle of "more tubes, stronger signal." A variable gain control knob permits reduction of signal strength to prevent picture distortion when the signal input is greater than that required. The failing of many boosters—showing a "peak" on some channels and "fall-off" on others—has been eliminated. These units provide extremely high gain, and do it throughout the television spectrum. Dual tuning controls allow separate tuning for picture and sound. Available in handsome furniture-finish mahogany or blond cabinets. The letter "B" in model numbers designates blond cabinet.

Model	Code	List Price
AT-1	ASAMI	\$49.50
AT-1B	ASAMH	51.50

**CRYSTAL MODEL D-104**

● For close talking applications, such as radio amateur communications and similar uses. With high output level, approximately —45 db, it possesses definitely reduced R.F. feed-back tendencies. Yoke-driven, bridge-mounted Graphoil crystal element, shock-proof mounting and barometric compensation. Speech range frequency response from 30 to 7,500, rising 500 to 4,000 c.p.s. Chrome finish. Standard equipment includes interchangeable plug and connector, spring cable protector, 7' shielded cable.



List Price

D-104 —Code ASUPA	\$24.60
GD-104 —Code ASVAX, with G- Stand	30.10
D-104-S —Code ASUPB, with S- Switch	27.35

**CERAMIC MODEL D-104-C**

● Duplicate of Crystal Model except for employment of ceramic element, which is immune to extremes of temperature and humidity. Performance comparable except for slightly lower output of approximately —58 db.

List Price

D-104-C —Code ASUPC	\$24.60
D-104-C-S —Code ASUQZ, with S-Switch	27.35

**"SYNABAR"  
UNIDIRECTIONAL CARDIOID  
CRYSTAL**

● Altogether professional in performance . . . performance to please the most exacting speakers and entertainers. Newly perfected unit employing special sintered metal which cancels out 15 db front to back, making it, for practical purposes, dead to sound from rear. Has truly excellent frequency range for its type and price class, 50 to 10,000 c.p.s., PLUS a Response Selector switch to provide choice of ideal pick-up characteristics for either crisp voice or general voice and music. Crystal element has special METALSEAL protection against moisture or dryness. Output level is —54 db, high impedance. Satin chrome finish. 20' single conductor shielded cable, with or without off-on switch. Recommended, without reservation, for highest quality reproduction and elimination of extraneous noise, in the widest variety of modern applications.



List Price

DR-10 —Code ASVFL	\$37.25
DR-10-S* —Code ASVFK	39.95

\*With off-on switch.

*Astatic Crystal Devices manufactured under Brush Development Co. patents.*

# Astatic

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## MICROPHONES



### The WR-SERIES

● The WR-Series, Multi-Unit Microphones, are highly recommended for studio, public address and high quality recording purposes. Substantially flat frequency response up to 10,000 cycles. Due to their special interior assembly design, the WR-Series Microphones are practically transparent to sound waves and cannot be acoustically overloaded. Model WR-20 may be used on cable up to 100 ft. with negligible loss of output and Model WR-40 is more than able to handle cable twice this length. Output level —56 db. Finish, bright chrome with satin chrome grille. Cable length, 25 ft. Add \$2.70 for models with off-on switch, as shown.

List Price

WR-20—Code ASVGZ .....\$32.30  
WR-40—Code ASVAL ..... 43.25  
(Available with S-Switch or G-Stand)

### "CARDINAL" CRYSTAL

● A sparkling, low-cost beauty with performance comparable to high-priced units. All-purpose microphone (see accessory list). Lifts from its streamlined, dark brown plastic desk stand for hand use. Wide range response, adaptable to standard AC or DC circuits, with 15' cable. Output level approximately —52 db.



List Price  
(For Microphone only)

CX —Substantially flat—Code ASAOA .....\$9.75  
CX-1—Rising characteristics—Code ASAPZ ..... 9.75

### "CARDINAL" DYNAMIC

● Duplicate of Model CX in appearance, but equipped with dynamic unit.

List Price  
(For Microphone only)

CDH—(High Impedance) Code ASAOF .....\$19.50



### "CARDINAL" CERAMIC

● Duplicate of Model CX in appearance, but employing ceramic element, which is immune to extremes of temperature and humidity. Equipped with 7' cable. Output approximately —62 db.

List Price  
(For Microphone only)

CC —Substantially flat—Code ASAPU.....\$8.95  
CC-1—Rising characteristics—Code ASAPT..... 8.95

### "CARDINAL" ACCESSORIES

● "Cardinal" plastic desk base, \$1.00; any model available with off-on switch, \$1.50 extra; hang-up hook, \$0.25; stand adapter, \$0.35.

### "VELVET VOICE" CRYSTAL

● Here is a convertible type Crystal Microphone, providing ultra-smooth, velvety soft, wide range response, that may be used as desk, hand or floor stand microphone, to meet practically every microphone need. Beautiful gold finish housing and handle; bright chrome grille; brown baked enamel, detachable base; 15' shielded cable. Output level approximately —52 db. Two models: Model 200 with smooth, even frequency response characteristics from 80 to 10,000 c.p.s.; Model 241, with similar range but rising characteristics between 1500 and 5500 c.p.s. for added brilliance in speech range.

(Without Switch) List Price

200—Code ASUVA .....\$13.95  
241—Code ASUVC ..... 13.95

(With Off-On Switch)

200-S—Code ASUVB ..... 15.00  
241-S—Code ASUVD ..... 15.00



### "VELVET VOICE" DYNAMIC

● This microphone is identical with Model 200, in appearance, but is equipped with a dynamic unit. Semi-directional. Exceptionally high output level of High Impedance Model, approximately —50 db. Frequency response, 80 to 10,000 c.p.s.

(Without Switch)

List Price

VDL —(50 ohms)—Code ASANA .....\$19.95  
VDH\*—(High Impedance)—Code ASAND..... 22.50

\*High impedance model only available with ON-OFF switch, \$1.40 extra.

### "VELVET VOICE" CERAMIC

● Also identical in appearance with Model 200, but employing the amazing, new piezoelectric ceramic element. Recommended where high temperatures and humidity are service factors. Equipped with 7' cable. Output level approximately —62 db. Frequency response 80 to 10,000 c.p.s.

List Price

VC —(5 Meg.)—Substantially flat—Code ASAQR.....\$13.15  
VC1—(5 Meg.)—Rising characteristics—Code ASAQP..... 13.15

Available with On-Off switch at \$1.05 extra

### The DYNAMIC

● Model "DN" is a semi-directional, all-purpose dynamic microphone incorporating a new unitary moving coil system, and carefully proportioned acoustic circuit to highly damp the natural resonance of the moving system and provide a response characteristic substantially flat from 50 to 7,000 cycles. The "DN" design employs all features necessary for wide applicability, including Astatic's tilting-head, swivel mount, permitting semi- or non-directional positions. Opalescent gray and bright chrome finish. High impedance model only is available with Type S On-Off Switch (as illustrated) at \$2.75 extra.

List Price

DN-50—(50 ohms)—Code ASVNJ .....\$21.90

DN-HZ—(High impedance)—Code ASVNG ..... 24.60

(Both Models available with G-Stand)



Astatic Crystal Devices manufactured under Brush Development Co. patents.

# ASTATIC

## MICROPHONES AND STANDS

# Astatic

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CONNEAUT, OHIO

### The JT-SERIES CRYSTAL & CERAMIC



● Because of their wide range of usefulness, excellent performance and low price, Astatic JT-Series Microphones are used extensively for amateur, public address and home recording. JT-Series Microphones are available in both wide and voice range models and, in addition to standard equipment, are furnished complete with concentric cable connector, convenient wood handle, interlocking metal base. Crystal model has 15' cable; ceramic, 7'. Wood handle may be removed and microphone used on floor stand. Crystal models' output level, —52 db, provides ample reserve for use with high gain amplifiers. Ceramic models' output approximately —62 db. Opalescent gray with bright chrome grille.

- | List Price                       |         |
|----------------------------------|---------|
| JT-30 —Substantially flat—       |         |
| Code ASVLG .....                 | \$16.95 |
| JT-40 —Rising characteristics—   |         |
| Code ASVLD ..                    | 16.95   |
| *JT-30-C—Substantially flat—     |         |
| Code ASVLF .....                 | 16.15   |
| *JT-40-C—Rising characteristics— |         |
| Code ASVLC ..                    | 16.15   |
| *Ceramic Models.                 |         |

### CRYSTAL MODEL T-3

● Definitely established by long and continued popularity, Model T-3 Crystal Microphone is highly practical for many and varied applications. Its use is suggested for studio set-ups, with amateur rigs, intercommunicating systems, public address installations and for high-class recording purposes. Microphone head may be tilted with ease on unique swivel mounting and pickup pattern made semi- or non-directional, as desired. Output level —52 db. Frequency response substantially uniform from 80 to 10,000 cycles. Equipped with interchangeable plug and socket connector and 25 ft. cable. All chrome finish.



- | List Price                      |         |
|---------------------------------|---------|
| T-3 —Code ASVCX .....           | \$27.35 |
| T-3-S—Code ASVCW, with S-Switch | 30.10   |
| GT-3—Code ASUZD, with G-Stand   | 32.85   |

### CERAMIC MODEL T-3-C

● Duplicate of Model T-3 except for employment of heat and moisture-immune ceramic element. Output level —62 db with 7' cable.

- | List Price                             |         |
|--|---------|
| T-3-C —Code ASVCU .....                | \$25.55 |
| T-3-C-S—Code ASVCT, with S Switch..... | 28.30   |

### LAPEL TYPE MODEL L-1

● This very small dual-diaphragm crystal microphone was developed to meet especially difficult pickup conditions. Equipment includes lapel-type spring clip and over-shoulder cord to permit wide latitude of movement. Output level —62 db. Frequency response uniform from 80 to 10,000 c.p.s. Finish, statuary bronze. Furnished with 25-ft. cable.



- | List Price                |         |
|---------------------------|---------|
| Model L-1—Code ASUSN..... | \$27.35 |

### SWITCH CONNECTOR SC-11

● Has standard receptacle to receive the interchangeable connector used on T-3, D-104 and K-2 Microphones; and has connection for standard concentric cable connector. Is now standard equipment on these microphone models ordered with switch to provide quick removal of the mike head, and is available separately. Bright chrome finish.



- | List Price             |        |
|------------------------|--------|
| SC-11—Code ASUWP ..... | \$5.50 |

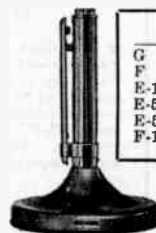
### MODEL K-2

● Because of its smooth, undistorted reproduction and the fact that it cannot be acoustically overloaded, Astatic Model K-2 Crystal Microphone is favored and extensively used. In this model, Astatic provides a small size, dual-diaphragm type crystal microphone for studio use, recording, dance bands, public address installations and general applications where quality performance is required. With dual crystal unit design, Model K-2 has twice the capacitance of the usual crystal microphone and correspondingly longer cable lengths may be used. Standard equipment includes plug and socket connector and 25-ft. cable. Output level —62 db. Bright chrome finish.



- | List Price            |         |
|-----------------------|---------|
| K-2 —Code ASURX ..... | \$30.10 |
| K-2-S—Code ASURW,     |         |
| with S-Switch .....   | 32.85   |
| GK-2—Code ASUZA,      |         |
| with G-Stand .....    | 35.55   |

### MICROPHONE STANDS AND ADAPTERS



MODEL	FINISH	PRICE
G Grip-to-Talk	Chrome & Gray	\$10.95
F Desk	Chrome & Gray	6.55
E-1 Desk	Chrome & Gray	3.25
E-5B Desk	Chrome & Brown	2.70
E-5G Desk	Chrome & Gray	2.70
F-11 Adapter	Chrome	3.50

Astatic Crystal Devices manufactured under Brush Development Co. patents.



# Astatic

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## PICKUPS FOR SLOW SPEED AND STANDARD 78 RPM RECORDS

### MODEL 6D CRYSTAL TURNOVER PICKUP



● Switches from 33 1/2 or 45 RPM records to standard 78 with turnover knob at front. Plays both types of records at only eight-gram needle pressure, thus has no extra mechanism to change pressure when knob is turned, eliminating a potential source of trouble and varying reproduction quality. Employs LQD-1 Double-Needle Cartridge. Mounts seven inches from turn-table center, die-cast curved arm finished in dark brown Hammerlin.

### MODEL 7D CRYSTAL TURNOVER PICKUP



● Newly designed cast aluminum arm employing Astatic's sensational new smooth response cartridge, the tiny turnover type ACD Crystal Cartridge. Arm design affords minimum tracking error and balanced groove sidewall pressure, resulting in reduced tracking distortion and longer record and needle life. Cartridge rotates in improved snap-action turnover mechanism. Light brown Hammerlin finish.

### 400-D TURNOVER PICKUP



● Turnover type transcription pickup adapted from famous Astatic Studio Master "400" conventional transcription arm. Plays 33 1/2, 45 or standard 78 RPM recordings at eight-gram needle pressure. Employs LQD-1 Double-Needle Crystal Cartridge. Notable excellence of frequency response, particularly at low frequencies. Gracefully curved, die-cast arm in light brown Hammerlin finish.

### MODEL FL-33 PICKUP



● Does the work of three pickups. Its U-J Crystal Cartridge for either 33 1/2 or 45 RPM records is easily, instantly replaceable with the U-78-J Cartridge for playing standard records. No adjusting of needle pressure, nothing else to be done. Cartridges slip in and out like barrel and cap of non-threaded fountain pens. Special Type "U" Taper-Lock replaceable needle has tongue and groove arrangement to hold in position, removes merely by gripping small tab at rear of needle and sliding towards rear of cartridge. Novel design at base of FL-33 eliminates tone arm resonances, assures perfect tracking. Die-cast arm, finished in high gloss black and polished aluminum.

### MODEL FLC-33 PICKUP



● The same important advancements in pickup engineering as the FL-33, in handsomely curved styling. Offers the same operating advantages, such as the three-in-one feature: one pickup plays 33 1/2, 45 and 78 RPM Records without changing needle pressure or making other adjustments, with the simple switching of slip-in cartridges. Perfect tracking, at only five-gram needle pressure, is assured by the revolutionary new base mounting assembly.

### FLT-33 TRANSCRIPTION PICKUP



● Never before, a pickup of such professional instrument quality and precision. Like the FL-33, this sleek transcription model employs the U-J Crystal Cartridge with one mil tip-radius needle, instantly replaceable with the U-78-J for playing 78 RPM Records. In addition, the U-TR Cartridge with 2.5 mil tip-radius may be inserted to play standard lateral broadcast transcriptions. Special ball-bearing, anti-resonance base is adjustable to desired height, as is unique arm-rest. Feather-touch needle pressure of five grams is accomplished by a revolutionary hinged division of the arm, which also contributes to perfect tracking and elimination of surface noise. Die-cast arm and base look their fine instrument part, with finish in telephone black. All three "U" Series Cartridges are available with diamond stylus tips instead of the regular sapphire.

### THE FT FILTER-TRANSFORMER

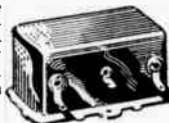
● For broadcast station use with "FL" and "FLT" Series Pickups, to filter and match high impedance output of pickup to low impedance mixer circuits. Has output impedances of 37.5, 150 and 250 ohms.

Code ASXMR.....List Price \$28.50

### THE FL FILTER

● For best performance with highest quality speakers, the FL Filter is recommended as an accessory unit with "FL" and "FLT" Series Pickups. Controls high frequency response.

Code ASXMS.....List Price \$6.90



### 510 SERIES—CRYSTAL, MAGNETIC AND CERAMIC PICKUPS



● Add Astatic's new anti-resonance swivel base, and newly developed crystal, ceramic and magnetic cartridges with special one mil or All-Groove tip, precious metal or jeweled stylus, to the popular Astatic Model 510 Pickup—and you have these new long-playing models, the finest performers in their price class. Permanently adjusted to low needle pressures, short mounting centers make them ideal for a host of long-playing applications. Outstanding characteristics are high uniform output and low needle point impedance. Die-cast arm, finished in Hammerlin opalescent grey. Specify Model 510-CQ for unit with tiny new CQ Crystal Cartridge employing famous type "Q" needle for slow speed records. Model 510-AC has the newest miniature Astatic crystal cartridge, the sensationally smooth response AC Cartridge with type "C" Taper-Lock Needle for slow speed records. For quality reproduction altogether out of proportion to low cost in a crystal unit, specify Model 510-LT-4AG, employing LT Cartridge with special All-Groove stylus tip for all record types. Model 510-MG offers on slow speed records highest quality reproduction to please the most discriminating—trouble-free and stable through continuous service—thanks to its new magnetic cartridge. For the same pickup with All-Groove stylus tip, specify Model 510-MG-AG. Model 510-GC has Astatic's GC Ceramic Cartridge, immune to extremes of temperature and humidity, and provides truly splendid quality of reproduction on slow speed records with its one-mil replaceable needle.

### MODEL 507-L-92-33 PICKUP



● Bedrock price, with full professional performance standards retained. The new L-92-33 Crystal Cartridge employed is notable for high output, which affords excellent results in use with standard phonograph amplifiers, where other lower output cartridges are not satisfactory. Has universal, screw-type needle chuck to receive standard microgroove needles. Pickup is furnished without needle. Die-cast arm finished in opalescent grey Hammerlin. New, anti-friction swivel base.

### MODELS 400-CQ AND 400-MG TRANSCRIPTION PICKUPS



● The famous Astatic Studio Master "400" conventional transcription arm, adapted for long-playing transcriptions. Incorporates the improved base mounting assembly that eliminates arm resonances and assures perfect tracking, and the "CQ-J" Crystal Cartridge with sapphire stylus of one mil tip-radius. A peak standard of long-playing transcription performance. Die-cast arm, permanently adjusted at six-gram needle pressure. Grey Hammerlin finish. Specify Model 400-MG for the same arm, except for employment of Astatic's Magnetic Cartridge.

Astatic Crystal Devices manufactured under Brush Development Co. patents.

# ASTATIC

## CARTRIDGES

### FOR SLOW SPEED AND STANDARD 78 RPM RECORDS



#### THE AC-J CRYSTAL CARTRIDGE

● Astatic's newest crystal cartridge development. New mechanical drive system affords new low in inertia, for extraordinary smooth response, new tracking excellence, low needle talk. Miniature size belies BIG, full-throated performance. Weighs only 5 grams. Easily

replaceable Type "C" Needle with one-mil sapphire stylus tip for slow speed records or special All-Groove tip for all record types.

- AC-J —Code ASWYJ ..... List Price \$8.90
- AC-AG-J\* —Code ASWYII ..... List Price 8.90
- \*All-Groove Needle Model.



#### THE GC CERAMIC CARTRIDGE

● First major stride in cartridges employing ceramic elements since Astatic pioneered in this type unit. The first with replaceable needle. Takes "Type G" needle—with either one-mil sapphire tip radius or special All-Groove tip for all record types—which slips from its rubber chuck with a quarter turn sideways. Resistance to high temperatures and humidity is not the only additional advantage. Output has been increased over that

of any ceramic cartridge available. Light weight and low needle pressure make it ideal for a great variety of modern applications. Models GC-J and GC-AG-J (All-Groove Needle Model) fit standard 1/2" mounting and RCA 45 RPM record changers. Model GC-1J fits RMA No. 2 Specifications for top mounting .458" mounting centers.

- GC-J —Code ASWZK ..... List Price \$7.40
- GC-AG-J —Code ASWZM ..... List Price 7.40
- GC-1J —Code ASWZII ..... List Price 7.40



#### THE CQ CRYSTAL CARTRIDGE

● A new Astatic design, featuring miniature size and five-gram weight. Models CQ-J and CQ-AG-J fit standard 1/2" mounting and RCA 45 RPM record changers. Model CQ-1J fits RMA No. 2 Specifications for top mounting .458" mounting centers. Output 0.7 volt at 1,000 c.p.s. Employ one-mil tip-radius, Q-88 needle, or special All-Groove tip for all record types. Cast aluminum housing.

- CQ-J —Code ASXAZ ..... List Price \$7.50
- CQ-AG-J\* —Code ASWZE ..... List Price 7.50
- CQ-1J —Code ASXAI ..... List Price 7.50
- \*All-Groove Needle Model.



#### THE L-92-33 CRYSTAL CARTRIDGE

● High performance quality in a new, low-cost unit. Notably high output permits use with standard phonograph amplifiers, where other cartridges prove unsatisfactory. Reality of tone and absence of surface noise are almost unbelievable. Universal, screw type needle chuck receives any standard micro-groove needle. Stylus not furnished.

Code ASWTS ..... List Price \$6.00



#### THE MG-J MAGNETIC CARTRIDGE

● Peak fidelity of reproduction that LASTS, even under the most consistent service or adverse climatic conditions. Unchanging characteristics are result of radical reversal of engineering precedent and drastic simplification, which eliminate need for delicate handling and other common sources of trouble with magnetic type units. Troublesome, costly armature balancing problems also eliminated. Mumetal housing provides increased shielding effect for maximum reduction of hum. Replaceable "G" Type Needle with one-mil sapphire stylus tip for slow speed records or special All-Groove tip for all record types.

- MG-J —Code ASALU ..... List Price \$7.50
- MG-AG-J\* —Code ASALT ..... List Price 7.50
- \*All-Groove Needle Model.

Astatic Magnetic Cartridges manufactured under  
Massa Laboratories License.

Astatic Crystal Devices manufactured under  
Brush Development Co. patents.



#### THE ACD-J DOUBLE-NEEDLE CRYSTAL CARTRIDGE

● Newest Astatic double-needle, turnover cartridge—featuring smooth response, tiny size and light weight. Extraordinary performance made possible by a mechanical drive system with a new low in inertia. Total weight approximately 5 grams. Easily replaceable Type "C" Needles.

- ACD-J—Code ASWYL ..... List Price \$9.50



#### THE LQD DOUBLE-NEEDLE CRYSTAL CARTRIDGE

● The LQD Cartridge — for 45, 33 1/2 and 78 RPM Records — quickly became the first choice of many of the nation's largest users, on the basis of comparative listening tests, and is, today, the PROVED TOP PERFORMER for turnover type pickups. Outstanding for excellence of frequency response, particularly at low frequencies. A gentle pry with pen-knife removes ONE "Q" needle for replacement . . . without disturbing the other needle, without removing cartridge from tone arm. Gentle pressure snaps new needle into place. Stamped aluminum housing. Model LQD-1J, illustrated, has needle guards and front bracket for turnover knob. LQD-J furnished without guards or bracket.

- LQD-J —Code ASXAL ..... List Price \$9.50
- LQD-1J—Code ASXAM ..... List Price 9.50



#### THE U-J CRYSTAL CARTRIDGE\*

● The unparalleled performance and triple duty service of the FL Series Pickups is largely due to the U-J Crystal Cartridge. A child can slip it instantly from the pickup and slip in the U-78-J or U-TR Crystal Cartridges to switch from 33 1/2 and 45 to 78 RPM records or broadcast transcriptions. Secures itself on slip-in principle, the same as barrel and cap of some modern fountain pens. No changing of needle pressure, nothing else to be done. Five-gram needle pressure. Replaceable sapphire stylus with one mil tip-radius. The U-J replaces, and is interchangeable with, the discontinued LP-88. An ideal replacement for Philco Part 45-1609, Balanced Fidelity Reproducer. Code ASXAT. . . . . List Price \$8.90

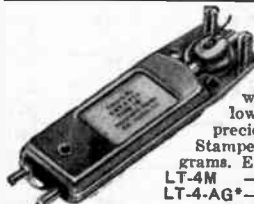
#### THE U-78-J CRYSTAL CARTRIDGE\*

● Interchangeable with U-J Crystal Cartridge, in "FL" and "FLT" Series Pickups, to play conventional 78 RPM Records. See above description under U-J Cartridge. Five-gram needle pressure, has replaceable sapphire stylus with three mil tip-radius. Replaces LP-78 Cartridge. Code ASWZG ..... List Price \$8.90

\$7.90 with FL-33, FLT-33 or FLT-TR Pickups

#### THE U-TR CRYSTAL CARTRIDGE\*

● Identical to U-J, except for 2.5 mil tip-radius needle for broadcast transcriptions. Code ASXAK ..... List Price \$8.90  
U-X with Diamond Stylus ..... \$38.90; U-TRX or U-78X ..... \$33.90  
\* All "U" Series Cartridges are instantly interchangeable in the "FL" and "FLT" Series Pickups



#### THE LT-4 CRYSTAL CARTRIDGE

● New high output, low cost cartridge with one-mil precious metal stylus tip for low speed records or special All-Groove precious metal tip for all record types. Stamped aluminum housing. Total weight 11 grams. Employs Type "D" Needle. LT-4M —Code ASXBW ..... List Price \$7.00  
LT-4-AG\* —Code ASXBX ..... List Price \$7.00  
\*All-Groove Needle Model.

#### MODEL 8-D TURNOVER ASSEMBLY AND DOUBLE-NEEDLE CARTRIDGE, MOUNTED IN WEBSTER-CHICAGO TONE ARM



● Offers improved quality of reproduction for all record types. Installation is the easiest and speediest job of its type . . . you replace entire tone arm and the cost is no more than a cartridge alone. No alterations to record changer are required . . . all you need is a screw-driver. Simple instructions with each unit. For Webster-Chicago Changer Models: 246, 256, 255, 262, 264, 346, 356, 355, 362, 357, 364. 8-D—Code ASXHW ..... List Price \$11.50

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**ASTATIC**

## SLOW SPEED PICKUPS AND CARTRIDGES SPECIFICATIONS

### PICKUPS FOR SLOW SPEED AND STANDARD 78 RPM RECORDS

Model	List Price	Finish	Cartridge Used*	Element Type	Stylus	For Record		Cable Length**	Shipping Weight	Code
						Size	Speed			
6D	\$15.90	Dark Brown Hammerlin	LQD-1	Crystal	Precious Metal† Sapphire†	7-10-12"	All	13"	2 lbs.	ASXHU
7-D	15.90	Light Brown Hammerlin	ACD	Crystal	Precious Metal† Sapphire†					
8-D	11.50	Brown Plastic	(Special for Webster-Chicago Record Changers)							
400-D	25.00	Light Brown Hammerlin	LQD-1	Crystal	Precious Metal† Sapphire†	10-12-16"		24"	1 lb. 8 ozs.	ASDCN
FL-33	14.90	High Gloss	U-J	Crystal	Sapphire	7-10-12"	Slow	12"	14 ozs.	ASXCB
FLC-33	14.90	Black	U-J	Crystal	Sapphire			12"	14 ozs.	ASXIL
FLT-33	43.90	Telephone	U-J	Crystal	Sapphire			24"	3 lbs.	ASXIP
FLT-33X	73.90	Black	U-X	Crystal	Diamond			24"	3 lbs.	ASXIO
FL-78	14.90	High Gloss	U-78-J	Crystal	Sapphire	7-10-12"	78 RPM	12"	14 ozs.	ASXIT
FLC-78	14.90	Black	U-78-J	Crystal	Sapphire			12"	14 ozs.	ASXIU
FLT-78	43.90	Telephone	U-78-J	Crystal	Sapphire			24"	3 lbs.	ASXIS
FLT-78X	68.90	Black	U-78X	Crystal	Diamond			24"	3 lbs.	ASXIR
FLT-TR	43.90	Telephone	U-TR	Crystal	Sapphire	.0025" Tip Radius	Broadcast Transcriptions	24"	3 lbs.	ASXIN
FLT-TRX	68.90	Black	U-TRX	Crystal	Diamond			24"	3 lbs.	ASXIM
510-CQ-M	10.25	Opalescent Grey Hammerlin	CQ-M	Crystal	Precious Metal	7-10-12"	Slow	13"	1 lb. 2 ozs.	ASAXB
510-CQ	10.75		CQ-J	Crystal	Sapphire			13"	1 lb. 2 ozs.	ASAXA
510-MG	9.35		MG-J	Magnetic	Sapphire			13"	1 lb. 2 ozs.	ASAYX
510-GC	8.75		GC-J	Ceramic	Sapphire			13"	1 lb. 2 ozs.	ASAYR
510-AC	10.75		AC-J	Crystal	Sapphire			13"	1 lb. 2 ozs.	ASAYS
510-LT-4AG	8.35	Dark Brown Hammerlin	LT-4AG	Crystal	Precious Metal	7-10-12"	All	13"	1 lb. 2 ozs.	ASWTW
510-MG-AG	9.35	MG-AG-J	Magnetic	Sapphire	13"			1 lb. 2 ozs.	ASAYW	
507-L-92-33	8.00	Opalescent Grey Hammerlin	L-92-33	Crystal	Not included	7-10-12"	Slow	13"	1 lb. 2 ozs.	ASWTT
400-CQ-M	24.50	Opalescent Grey Hammerlin	CQ-M	Crystal	Precious Metal	10-12-16"	Slow	24"	1 lb. 8 ozs.	ASBCR
400-CQ	25.00		CQ-J	Crystal	Sapphire			24"	1 lb. 8 ozs.	ASBCQ
400-MG	23.60		MG-J	Magnetic	Sapphire			24"	1 lb. 8 ozs.	ASBCO

†Precious metal stylus tip on 3-mil 78 RPM side. Sapphire stylus tip on 1-mil 45 and 33-1/3 RPM side.

\*For performance data see Cartridge Chart

\*\*Super-Flexible, Single Conductor, Shielded

### CARTRIDGES FOR SLOW SPEED AND STANDARD 78 RPM RECORDS

Model	Element Type	List Price	Minimum Needle Pressure	Output Voltage 1000 c.p.s. 0.5 Meg. Load	Frequency Range c.p.s.	Needle Type*	For Record	Code
AC-J	Crystal	\$ 8.90	5 gr.	1.0†	50-10,000	C-1 (J)	33-1/3 and 45 RPM	ASWYJ
AC-AG-J	Crystal	8.90	6 gr.	1.0†	50-10,000	C-AG (J)	33-1/3, 45 and 78 RPM	ASWYH
U-J	Crystal	8.90	5 gr.	0.5†	30-10,000	U (J)	33-1/3 and 45 RPM	ASXAT
GC-J	Ceramic	7.40	6 gr.	0.55†	50-10,000	G (J)	33-1/3 and 45 RPM	ASWZK
GC-1J	Ceramic	7.40	6 gr.	0.55†	50-10,000	G (J)	33-1/3 and 45 RPM	ASWZH
GC-AG-J	Ceramic	7.40	8 gr.	0.7†	50-10,000	G-AG (J)	33-1/3, 45 and 78 RPM	ASWZM
CQ-J	Crystal	7.50	5 gr.	0.7†	50-10,000	Q-33 (J)	33-1/3 and 45 RPM	ASXAZ
CQ-1J	Crystal	7.50	5 gr.	0.7†	50-10,000	Q-33 (J)	33-1/3 and 45 RPM	ASXAI
CQ-AG-J	Crystal	7.50	8 gr.	1.0†	50-10,000	Q-AG (J)	33-1/3, 45 and 78 RPM	ASWZE
MG-J	Magnetic	7.50	6 gr.	30 MV†	50-12,000	G (J)	33-1/3 and 45 RPM	ASALU
MG-AG-J	Magnetic	7.50	10 gr.	30 MV†	50-12,000	G-AG (J)	33-1/3, 45 and 78 RPM	ASALT
LT-4AG	Crystal	7.00	8 gr.	2.0†	50-5,000	D-AG (M)	33-1/3, 45 and 78 RPM	ASXBX
LT-4M	Crystal	7.00	6 gr.	1.9†	50-5,000	D-33 (M)	33-1/3 and 45 RPM	ASXBW
L-92-33	Crystal	6.00	10 gr.	1.6†	50-10,000	Not included	33-1/3 and 45 RPM	ASWTS
MD-1J	Crystal	10.90	(Special for Markel Record Changer)			C-1 (J)	33-1/3 and 45 RPM	ASWWJ
<b>DOUBLE NEEDLE TURN-OVER MODELS:</b> 1 mil tip needle for LP 33-1/3 and 45 RPM records. 3 mil tip needle for standard 78 RPM records.								
ACD-J	Crystal	9.50	6 gr. Either Needle	1.0† ††	50-6,000	C-1 (J) C-3 (J)	(Dual Needle) 33-1/3, 45 and 78 RPM	ASWYL
LQD-J	Crystal	9.50	LP. 6 gr. STD. 8 gr.	0.9† 1.2††	50-7000 Roll-off at 3,500	Q-33 Needle (J) Q Needle (J)	(Dual Needle) 33-1/3, 45 and 78 RPM	ASXAL
LQD-1J	Crystal	9.50	LP. 6 gr. STD. 8 gr.	0.9† 1.2††	50-7000 Roll-off at 3,500	Q-33 Needle (J) Q Needle (J)	(Dual Needle) 33-1/3, 45 and 78 RPM	ASXAM

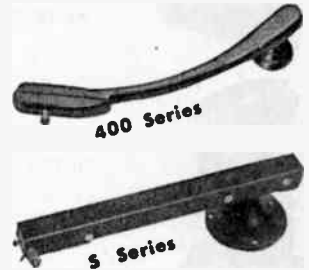
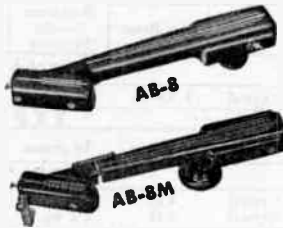
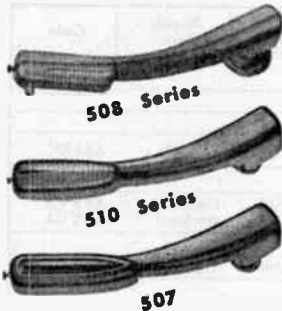
\*"J" stands for Sapphire tip, "M" for Precious Metal Tip. †RCA 12-5-31V Test Record or Equivalent. ††Audio-tone Test Record.

**ASTATIC**

**STANDARD 78 RPM PICKUPS  
AND ACCESSORIES,  
RECORDING HEADS**

*Astatic*

KNOWN THE WORLD OVER CONNEAUT, OHIO



**NOTICE:** Pickup Models 508-MG-78, 510-MG-78 and 400-MG-78 are magnetic type units employing Astatic's revolutionary Magnetic Cartridge. Three Equalizer-Amplifier Models, for use in conjunction with these pickups, are shown below.

Model	List Price	Finish	Cartridge Used*	Element Type	Stylus	For Record		Cable Length**	Shipping Weight	Code
						Size	Speed			
508-QT	\$18.35	Light Brown	QT3-J	Crystal	Sapphire	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYD
508-MG-78	16.95	Hammerlin	MG-78-J	Magnetic	Sapphire	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYA
510-QT	9.75	Smooth	QT3-J	Crystal	Sapphire	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYL
510-L-72	7.50	Light Brown	L-72	Crystal	Optional	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYK
510-MG-78	8.35	Enamel	MG-78-J	Magnetic	Sapphire	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYY
507-L-82	5.50	Smooth Light Brown Enamel	L-82A	Crystal	Optional	10 · 12"	78 RPM	13"	1 lb. 2 oz.	ASAYG
400-QT	25.00	Light Brown Hammerlin	QT3-J	Crystal	Sapphire	All Lateral Transcriptions	78 RPM	24"	1 lb. 8 oz.	ASBCH
400-QT-M	24.50		QT3-M	Crystal	Precious Metal			24"	1 lb. 8 oz.	ASBCI
400-LT-M	23.10		LT1-M	Crystal	Precious Metal			24"	1 lb. 8 oz.	ASBCJ
400-Nylon	23.85		Nylon 1-J	Crystal	Sapphire			24"	1 lb. 8 oz.	ASBCF
400-MG-78	23.60	MG-78-J	Magnetic	Magnetic	Sapphire	24"	78 RPM	1 lb. 8 oz.	ASBCP	
AB-8	11.15	Smooth Brown Enamel	B-2	Crystal	Optional	10 · 12"	78 RPM	13"	2 lbs.	ASXFZ
AB-8M	13.90	Smooth Black Enamel	B-2	Crystal	Optional	10 · 12"	78 RPM	13"	2 lbs.	ASXEA
S-8	11.15	Black	B-2	Crystal	Optional	10 · 12"	78 RPM	12"	1 lb. 10 oz.	ASWCA
S-12-B-2	13.90	Wrinkle	B-2	Crystal	Optional	All Lateral Transcriptions	78 RPM	12 1/2"	2 lbs. 6 oz.	ASWEZ

Models B-10 and B-16 are available on special request.

\*FOR PERFORMANCE DATA SEE CARTRIDGE CHART.  
\*\*Super-flexible, Single Conductor, Shielded.

EA-1



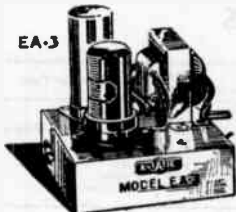
**EA-1, EA-2 & EA-3  
EQUALIZER  
AMPLIFIERS**

• The Model EA-1 is a compact unit designed for installation in radio sets and audio amplifiers, and provides the necessary equalization and preamplification to adapt the MG Cartridge to standard phonograph input circuits. Provides "bass-boost." The Model EA-2, self-powered, provides adjustable "bass-boost," adjustable treble "roll-off," and selection of "turn-over frequency." The Model EA-3 is a self-powered unit and provides "bass-boost" and equalization for the Magnetic Cartridge.



EA-2

EA-3



Code	List Price
EA-1 ASAMP	\$ 9.90
EA-2 ASAMO	39.50
EA-3 ASAMN	15.95

**E4P TONE EQUALIZER**

• Model E4P is an adjustable tone compensation network for use between crystal pickup and amplifier. Recommended for use with all crystal pickups. Complete instructions supplied.



E4P—Code ASVHD.....List Price \$3.30

**RECORDING HEADS**



MODELS X-26 and X-29A



MODEL M-41

Model	Type	Maximum Recording Voltage	Useful Upper Limit	Finish	Dimensions	Net Weight	Code	List Price
X-26	Crystal	150 V. RMS	6,000 c.p.s.	Dark Brown Enamel	1 1/2" x 1 1/2" x 3 1/4"	5 1/2 oz.	ASKMI	\$12.00
X-29A	Crystal	150 V. RMS	9,000 c.p.s.		1 1/2" x 1 1/2" x 3 1/4"	5 1/2 oz.	ASKMH	12.00
M-41-B	Magnetic	1 V. RMS	7,000 c.p.s.		1 1/2" x 1 1/2" x 3 1/4"	3 1/2 oz.	ASKMF	12.00
M-41-500	Magnetic	30 V. RMS	7,000 c.p.s.		1 1/2" x 1 1/2" x 3 1/4"	3 1/2 oz.	ASKME	12.00

Astatic Crystal Devices manufactured under Brush Development Co. patents.

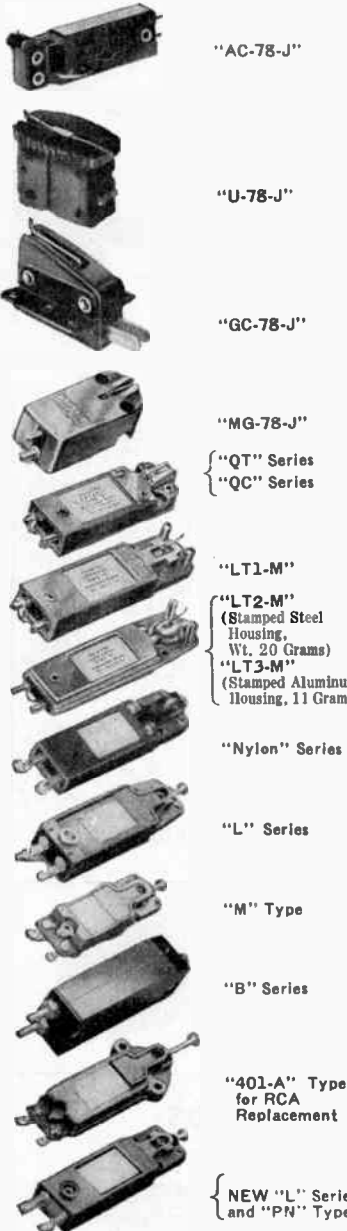
# Astatic

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**ASTATIC**

## CARTRIDGES FOR STANDARD 78 RPM RECORDS NEEDLES

### REPLACEMENT CARTRIDGES



Model No.	Element Type	List Price	Minimum Needle Pressure	Output Voltage 1000 c.p.s. 0.5 Meg Load	Frequency Range c.p.s.	Needle Type*	Code
<b>TYPE "AC"</b>							
AC-78-J	Crystal	\$ 8.90	6 gr.	1.0 V	50 to 10,000	C-3 (J)	ASWYN
<b>TYPE "MG"</b>							
MG-78-J	Magnetic	7.50	10 grams	30 MV	50 to 12,000	G-78 (J)	ASALV
<b>TYPE "L" SERIES</b>							
L-26A	Crystal	4.45	2 1/2 oz.	1.4	50 to 4500	Optional	ASWVZ
L-40A	Crystal	4.45	1 1/2 oz.	0.6	50 to 4500	Optional	ASWUA
<b>TYPE "M"</b>							
M-22	Crystal	5.55	2 1/2 oz.	2.9	50 to 6500	Optional	ASWJM
<b>TYPE "B" SERIES</b>							
B-2	Crystal	5.55	2 1/2 oz.	2.5	50 to 4000	Optional	ASWHJ
B-4	Crystal	5.55	2 1/2 oz.	2.5	50 to 4000	Optional	ASWHH
<b>SPECIAL TYPE FOR RCA REPLACEMENT</b>							
401-A	Crystal	4.45	2 1/2 oz.	1.4	50 to 4500	Optional	ASWTA
<b>NEW TYPE "L" SERIES</b>							
L-70A	Crystal	5.55	1 1/2 oz.	1.0	50 to 4000	Optional	ASWVT
L-71A	Crystal	6.65	1 oz.	1.0	50 to 8000	Optional	ASWVP
L-72A	Crystal	6.65	1 1/2 oz.	3.5	50 to 4000	Optional	ASWLW
L-82A	Crystal	5.55	2 1/2 oz.	3.5	50 to 5000	Optional	ASWSJ
L-92A	Crystal	6.00	1 oz.	2.25	50 to 7000	Optional	ASWTR
<b>TYPE "NYLON" ... NOTE:</b> Exceptionally smooth response over entire frequency range with a gradual roll-off commencing at approximately 7,000 c.p.s.							
Nylon 1-J	Crystal	7.75	1 1/2 oz.	1.0	50 to 10,000	Nylon (J)	ASWVA
<b>TYPE "LT" SERIES ... NOTE:</b> Exceptionally smooth response over entire frequency range with a gradual roll-off commencing at approximately 4,000 c.p.s.							
LT1-M	Crystal	7.00	3/4 oz.	1.0	50 to 10,000	T (M)	ASXAA
LT2-M	Crystal	7.00	3/4 oz.	1.0	50 to 10,000	T (M)	ASXAC
LT3-M	Crystal	7.00	3/4 oz.	1.0	50 to 10,000	T (M)	ASXAE
<b>TYPE "QT" SERIES ... NOTE:</b> Exceptionally smooth response over entire frequency range with a gradual roll-off commencing at approximately 5,000 c.p.s.							
QT2-J	Crystal	8.90	1 oz.	0.85	50 to 10,000	Q (J)	ASXBJ
QT2-M	Crystal	8.40	1 oz.	0.85	50 to 10,000	Q (M)	ASXBI
QT3-J	Crystal	8.90	1 oz.	0.85	50 to 10,000	Q (J)	ASXBN
QT3-M	Crystal	8.40	1 oz.	0.85	50 to 10,000	Q (M)	ASXBL
<b>TYPE "GC" ... NOTE:</b> Employs ceramic element, unaffected by extremes of temperature and humidity.							
GC-78-J	Ceramic	7.40	12 gr.	0.7†	50 to 10,000	G-78 (J)	ASWZI
<b>TYPE "U"</b>							
U-78-J	Crystal	8.90	5 gr.	0.5†	30 to 10,000	U-78 (J)	ASWZG
<b>TYPE "QC" ... NOTE:</b> Employs ceramic element, unaffected by extremes of temperature and humidity.							
QC-J	Ceramic	8.90	1 oz.	0.5	50 to 10,000	Fixed (J)	ASAPL
<b>"P. N." TYPES</b>							
L-74A	PN Crystal	10.00	1 1/2 oz.	1.4	50 to 4000	Optional	ASWVD
L-78	PN Crystal	11.15	(Special P.N. Crystal Cartridge for Seeburg Record Changers)				ASWVO

### SPECIAL PURPOSE TYPES

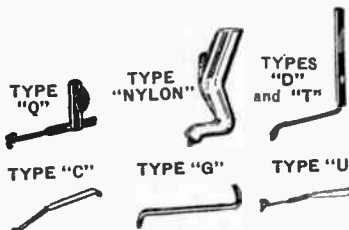
Model	Element Type	List Price	Minimum Needle Pressure	Output Voltage	Frequency Range c.p.s.	Needle Type	Application	Code
PT	Crystal	\$ 5.00	1 oz.	1.4	50 to 10,000 Roll-off at 3000	Not Included	Replacement for Philco Parts—35-2671, 35-2671-I	ASWTB
<b>DOUBLE-NEEDLE MODELS</b>								
MD-3J	Crystal	10.90				C-3 (J)	Special for	ASWWI
MD	Crystal	9.90				D (M)	Markel Record Changer	ASWTC

NOTE: Cartridge types B, QT and LT also available with PN Crystal upon request.

\*"J" stands for Sapphire tip, "M" for Precious Metal tip.

†Audie-tone Test Record.

### REPLACEMENT NEEDLES



Type	LIST PRICE		Tip Size	For Cartridge Types	Type	LIST PRICE		Tip Size	For Cartridge Types
	Sapphire (J)	Omnium (M)				Sapphire (J)	Omnium (M)		
C1	\$2.50	\$1.50	1-mil	AC; ACD Series; MD-1	Nylon	2.50	2.50	1-mil	Nylon Series
C-3	2.50	1.50	3-mil	AC-78; ACD Series; MD-3	Q	2.50	1.50	1-mil	LQD and QT Series
C-AC	2.50	1.50	A. G.	AC-AG	Q-33	2.50	1.50	1-mil	CQ; LQD and QT-33 Series
D	None	1.50	3-mil	LT-3D; LT-4D; MD	Q-AC	2.50	1.50	A. G.	CQ-AC
D-33	None	1.50	1-mil	LT-3D; LT-4; LT-4D	T	None	1.50	3-mil	LT Series
D-AC	None	1.50	A. G.	LT-AG	T-33	None	1.50	1-mil	LT-33
G	2.50	1.50	1-mil	GC and MG Series	U	2.50	1.50	1-mil	U Series
G-78	2.50	1.50	3-mil	GC-78 and MG-78 Series	U-78	2.50	1.50	3-mil	U-78 Series
G-AC	2.50	1.50	A. G.	GCAG					

Astatic Crystal Devices manufactured under Brush Development Co. patents.

# DYNAMIC AND CRYSTAL MICROPHONES

**SHURE**

## SHURE MULTI-IMPEDANCE SUPER-CARDIOIDS



"556" SUPER-CARDIOID  
(For Broadcast)

The new Shure Super-Cardioid Dynamic Microphones are Multi-Impedance Microphones—giving you three microphones in one. Gives you a choice of low, medium, or high impedance in one unit. Model "556" is specially designed for Broadcasting. Held within extremely close tolerances in frequency response. Features internally isolated cartridge and external vibration absorbing unit. Model "55" is a "General Purpose," high-quality dynamic. It is identical to the "556" in appearance with the exception of the external vibration absorbing unit. Following is technical data covering both models: Reduces reflections and reverberation—decreases random noise pickup by 73%. Smooth response from 40 to 15,000 cycles over wide angle at front—dead at rear. Single unit construction accomplished through Shure "Uniphase" principle (Patented). Floating moving coil system. Swivel head. Standard  $\frac{5}{8}$ "—27 thread. "556" has convenient terminals for attaching longer length cables. "55" has built-in connector. Case  $\frac{1}{4}$ " high,  $\frac{3}{4}$ " wide,  $\frac{3}{2}$ " deep. Ship. wts.: "556",  $\frac{3}{2}$  lbs.; "55", 4 lbs.



"UNDYNE" SUPER-CARDIOID DYNAMIC  
(For General Purpose)

Multi-Impedance Switch on Models  
"55", "556", "51"

IMPEDANCE TABLE	OUTPUT LEVEL
L—35-50 ohms	56.1 db below 1 Milliwatt per 10 microbar signal
M—150-250 ohms	56.8 db below 1 Milliwatt per 10 microbar signal
H—High	57.5 db below 1 volt per microbar

Microbar = 1 dyne per sq. cm.



MODEL	CABLE	CODE	LIST PRICE
556	7 ft.	RUMUB	\$92.50
55	25 ft.	RUMUL	\$67.50

Microbar = one dyne per sq. cm.



Model "51"

### "SONODYNE" HIGH-OUTPUT DYNAMIC

A rugged pressure-type dynamic microphone with wide-range frequency response and semi-directional pickup characteristics. Features a multi-impedance switch for low, medium or high impedance. Operates on the principle of a moving coil element in a magnetic field. Has built-in receptacle and a two-conductor shielded cable with microphone plug attached.

The rich satin chrome case is functionally designed for improved acoustical performance and modern appearance. Frequency response 60-10,000 c.p.s. The "Sonodyne" is ideal for all general-purpose use including public address,

wire and tape recording, communications and similar applications. Code: RUSON

IMPEDANCE TABLE		OUTPUT LEVEL	
L—35-50 ohms		53.0 db below 1 Milliwatt for 10 Microbar signal	
M—150-250 ohms		52.5 db below 1 Milliwatt for 10 Microbar signal	
H—High Impedance		52.0 db below 1 volt per Microbar	
MODEL	CABLE	SHPG. WEIGHT	LIST PRICE
51	20 ft.	$3\frac{1}{2}$ lbs.	\$39.75

Microbar=one dyne per sq. cm.

### "MONOPLEX" SUPER-CARDIOID CRYSTAL

A high-output, unidirectional microphone that ranks far above ordinary crystal microphones. The Super-Cardioid "Monoplex" is TWICE AS UNIDIRECTIONAL AS THE CARDIOID. It has a 14 to 1 front to rear pickup ratio and REDUCES PICKUP OF RANDOM SOUND BY 73%! The "Monoplex" employs the same type of acoustic phase-shifting network used in the

MODEL	CABLE	OUTPUT	IMPED.	LIST PRICE
737A	20 ft.	54.0 db below 1 volt per microbar	High Impedance	\$39.75

Microbar=one dyne per sq. cm.

Shure Broadcast microphones. New moisture-proofed "Metal Seal" crystal for long operating life. Case pivots at rear, can be pointed toward desired sound or upwards for horizontal plane pickup. The "Monoplex" is excellent for high-quality public address, communications, recording and similar applications. Operates under adverse conditions of background noise and reverberation where a conventional microphone would be practically useless. Built-in cable connector. Standard  $\frac{5}{8}$ "—27 thread. Height 4". Width  $3\frac{3}{8}$ ". Thickness  $1\frac{7}{8}$ ". Shipping weight  $2\frac{1}{4}$  lbs. Rich satin chrome finish.

Code: RUMON



Model 737A

**SHURE****CRYSTAL AND CARBON MICROPHONES****707A CRYSTAL****707A SERIES**

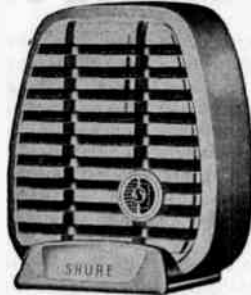
Good-quality performance at low cost. Has good response characteristics, is free from peaks, has typical semi-directional pickup. Uses moisture-proof Bimorph Crystal. Ideal for low-cost P. A. systems, call systems, amateur phone transmitters and similar applications.

Pearl Gray case with rich satin chrome finish on front grille. The case is a heavy die casting. Standard  $\frac{3}{8}$ "—27 thread. Diameter  $2\frac{3}{8}$ ". Shipping weight  $2\frac{1}{4}$  pounds. High impedance.

Code: 707A—RUDOF. 707A-20—RUDOK

MODEL	OUTPUT	CABLE	LIST PRICE
707A	51.0 db below 1 volt per microbar	7 ft.	\$14.50
707A—20	54.5 db below 1 volt per microbar	20 ft.	\$16.00

Microbar = one dyne per sq. cm.

**THE "REX"****710 SERIES**

Its extremely low price makes this striking hand-held crystal microphone a natural for hams, low-cost public address systems, and as a replacement for home recording microphones. A rugged unit designed for high speech intelligibility. The "Rex" saves further costs, as it needs no desk stand! Has a broad base, sits firmly on a table top without tipping over. Frequency response 60 to 9000 c.p.s. 7' shielded cable. Beautiful Burgundy-red metallic finish. Die-cast case complete with stand adapter.  $2\frac{3}{8}$ " wide,  $3\frac{1}{4}$ " high,  $1\frac{1}{8}$ " thick. High impedance.

Code: 710A—RUDEL. 710S—RUDET

MODEL	OUTPUT LEVEL	SHPG. WT.	LIST PRICE
710A	50 db below 1 volt per microbar	$1\frac{1}{4}$ lb.	\$10.00
710S (with switch)	50 db below 1 volt per microbar	$1\frac{1}{2}$ lb.	\$12.00

Microbar = 1 dyne per sq. cm.

**STRATOLINER****708 SERIES**

An expensive-looking microphone at moderate cost. Wide-range response (free from undesirable peaks) for good reproduction of either voice or music. Placed horizontally, the 708A is semi-directional; used vertically it becomes non-directional. Bimorph Crystal. A swivel permits  $90^\circ$  tilting of the microphone. Case dimensions: diameter  $2\frac{1}{2}$ " length  $4\frac{7}{8}$ ". Standard thread  $\frac{3}{8}$ "—27. Shipping weight  $2\frac{1}{2}$  pounds. Frequency response is 60-8000 c.p.s. Pearl Gray finish. High impedance.

Code: 708A—RUDUM. 708-20—RUVAT

MODEL	OUTPUT LEVEL	CABLE	LIST PRICE
708-A	51.0 db below one volt per microbar	7 ft.	\$27.50
708—20	54.5 db below one volt per microbar	20 ft.	\$29.00

Microbar = one dyne per sq. cm.

**SHURE 76B LAPEL MICROPHONE****No. 76B**

Designed for Public Address, lecturing, portable transmitters, and all general uses for intelligible reproduction of speech. Pressure-actuated diaphragm-type crystal microphone. Graphoil Bimorph crystal, moisture-sealed. Microphone is inconspicuous, weighs only  $1\frac{1}{2}$  ounces. Response from 40 to 6,000 c.p.s. High frequency response accentuated for maximum intelligibility.  $1\frac{1}{8}$ " diameter. Gray finish. Lapel clip. 25-foot shielded single-conductor cable. Shipping weight 1 pound. Output level: 57 db below 1 volt per bar. Code RULOP. List Price \$27.00.

MODEL	SWITCH ARRANGEMENT	CABLE	CODE	LIST PRICE
101C	Two Wire Relay Switch normally open (No microphone switch).	Coiled Cord 11" retracted 5' extended	RUCEG	\$30.00
102C	Relay normally open. Microphone switch normally open.	Coiled Cord 11" retracted 5' extended	RUCEM	\$30.00

Microbar = one dyne per sq. cm.

**COMMUNICATION CARBON MICROPHONES****MODEL "100" SERIES**

A high-quality, carbon microphone specially designed for mobile equipment. Rugged, dependable unit with clear, crisp voice response and high output. Fits snugly into palm of hand. Heavy duty switch for push-to-talk performance. Furnished with hook for suspension and bracket for wall mounting, plus coiled-cord cable. Adopted as standard microphone by leading manufacturers of police transmitters. Output level: 5 db below 1 volt for 100 microbar speech signal. Net weight 14 oz. Shipping weight  $1\frac{1}{4}$  pound. Case dimensions:  $3\frac{3}{4}$ " high,  $1\frac{3}{4}$ " deep,  $2\frac{3}{4}$ " wide. 70 to 80 ohms impedance.

**MODEL "120"**

The ideal general replacement carbon microphone for fixed station use. Can be used as a direct replacement for Shure microphones used by the leading communication equipment manufacturers. The "120" is a durable unit designed for high intelligibility of speech. Recommended for Police, Fire, Utility, Forestry, Transportation Services, etc. The "120" is a distinctive looking unit, will improve the appearance of any transmitting setup. It is furnished with a 536A desk stand, push button switch and 7' cable. Shipping weight  $3\frac{1}{2}$  pounds. Code: RUCEP.

NOTE: Direct replacement for manufacturer's model 91A27.

MODEL	OUTPUT LEVEL	IMPEDANCE	LIST PRICE
120	5 db below 1 volt per 100 microbar	70 to 80 ohms	\$40.00

Microbar = one dyne per sq. cm.

# CONTROLLED RELUCTANCE MICROPHONES

# SHURE

## THE "HERCULES"



510 SERIES

The "Hercules" is a hand-held magnetic unit. Provides the ruggedness, clear reproduction, and high output long needed for Public Address, Communications, and Recording—AT AN AMAZINGLY LOW PRICE! Recommended for Announcing and Mobile Public Address Systems; Communications; Home Recording; high quality Inter-Communication. Ideal for general-purpose use in tropical countries and all coastal areas where humidity is a problem.

The output voltage is induced in a coil of wire by causing a sound wave to modulate the reluctance of the magnetic circuit. By the control of this reluctance the utmost in quality and stability is achieved. High impedance is obtained without the use of a transformer. The "Hercules" can be used either indoors or outdoors. Fits snugly in the hand, sits firmly on a desk. Frequency response is 100 to 7,000 c.p.s. Furnished with 7' shielded cable. Green metallic finish. Die-cast case. Complete with stand adapter. 2 3/8" wide, 3/4" high, 1 1/2" thick.

MODEL	CABLE	OUTPUT LEVEL	IMPEDANCE	SHPG. WT.	CODE	LIST PRICE
510C	7 ft.	52.5 db below 1 volt per microbar	High	1 1/2 lb.	RUTUF	\$12.95
510S (with switch)	7 ft.	52.5 db below 1 volt per microbar	High	1 3/4 lb.	RUTUS	\$14.95

Microbar = one dyne per sq. cm.

## THE "GREEN BULLET"



MODEL 520

The "Green Bullet" is a magnetic unit, especially designed to provide quality music and speech reproduction at moderate cost. It is practically immune to the effects of high temperatures and humidity. The "Green Bullet" has a stability assured by unique control of the reluctance of the magnetic system. It features: high output, good response, high impedance without the need of a transformer. The "Green Bullet" has a beautiful modern metallic green finish with a plated grille. Frequency response is 100 to 7,000 c.p.s. Furnished with 15' single-conductor shielded cable.

MODEL	CABLE	OUTPUT LEVEL	IMPEDANCE	SHPG. WT.	CODE	LIST PRICE
520	15 ft.	52.5 db below 1 volt per microbar	HIGH	1 1/2 lbs.	RUDAL	\$16.50

Microbar = 1 dyne per sq. cm.

## THE "DISPATCHER"



MODEL 5208L

This new Controlled Reluctance dispatching unit is designed to handle the most severe field requirements of paging and dispatching systems. Ideal for police, taxi, bus, railroad, truck, airport, etc. Supplied with two-conductor shielded cable. Switch wired to operate both microphone and relay circuits. Large grip-bar assures positive contact. Firm downward pressure on grip-bar locks switch. NOTE: THE UNIT CAN BE PICKED UP WITHOUT ACTUATING THE SWITCH.

MODEL	OUTPUT	IMPED.	CODE	LIST PRICE
520SL-7'	52.5 db below 1 volt per microbar	HIGH	RUDAN	\$32.50
520SL-20'			RUDAF	\$34.50

Microbar = 1 dyne per sq. cm.

## CONTROLLED RELUCTANCE CARTRIDGE



MODEL R5

The Model R5 Controlled Reluctance Microphone Cartridge is available for service installation and is also ideal for the replacement of crystal microphone cartridges in Shure cases of the Model 707A and Model 100 Series designs. It will also replace cartridges in cases of other manufacturers' models of similar design, where space permits. Complete installation instructions in English and Spanish are included. It is an acoustically controlled balanced-armature transducer ideal for both microphone and soft-speaker applications. Practically unaffected by heat and humidity. Supplied with rubber mounting ring. Overall diameter of mounting ring 2 1/4"; thickness of rubber ring 3/8". Overall depth of cartridge 7/8". Shipping weight 4 ounces.

Code: RUTUC. List Price: \$9.00

## THE "RANGER"

The new Shure "Ranger" is a new development of a similar magnetic unit originally housed in microphones used by the Armed Forces. The "Ranger" is especially recommended for those applications where long lines are used, and a rugged hand-held microphone is needed. It is ideal for outdoor public address (sports arenas, athletic fields), mobile communications, hams, audience participation shows, etc. The "Ranger" is designed for high speech intelligibility. Easy to use, fits snugly in the palm of the hand. Has heavy-duty single-throw, double-pole leaf-type switch for push-to-talk operation. Phosphor-bronze blades and silver contacts for maximum operating life. Furnished with 7' three-conductor shielded cable. Frequency response is 100 to 9,000 c.p.s.



505 SERIES

MODEL	CABLE	OUTPUT LEVEL	IMPEDANCE	SHPG. WT.	CODE	LIST PRICE
505B	7 ft.	47.0 db below 1 milliwatt per 10 microbar signal	150-250 ohms	1 1/4 lb.	RUDAY	\$25.00
505C	7 ft.	50.5 db below 1 volt per microbar	High	1 1/4 lb.	RUDAX	\$25.00

Microbar = 1 dyne per sq. cm.



## MODERN DESK STAND

Model S36A. Streamlined Desk Mount with stable support. Fits Shure connector-type Microphones, concealing plug in base. Ideal for use with A88A Grip-to-Talk Switch. Adapter provided for other type microphones. Removable button for installation of  $\frac{3}{8}$ " standard bushing switch or volume control. Pearl Gray finish. Base:  $2\frac{1}{2}$ " high, 5" wide, 7" long. Shipping weight  $1\frac{1}{2}$  pounds.



MODEL S36A

Model: S36A Code: RUSEF List Price: \$5.00

## TAKE-APART STAND

Model S34B. Handy low-cost stand for desk or hand use. One twist of handle locks it securely in base for use as a table stand, or releases handle for use in hand. Metal base, wood handle. Metal top threaded  $\frac{3}{8}$ "—27. Height over all  $6\frac{1}{2}$ ". Base diam.  $4\frac{1}{2}$ ". Length of handle  $5\frac{1}{8}$ ". Shpg. wt. 1 lb.

Code: RUKAB List Price: \$2.50

Model A41B. Microphone handle only. Threaded  $\frac{3}{8}$ "—27.

Code: RUJAD List Price: \$1.00



## CABLE TYPE TRANSFORMER



Model A86A is a high-quality cable-type transformer which offers additional versatility when used in conjunction with Shure Models 55, 556, and 51 Dynamic Microphones, which

employ the impedance matching switch. It solves the frequent problem of installations requiring long lengths of microphone cables without the loss of high-frequency response. Model A86A matches 35 to 50 and 150 to 250 ohm microphones to high impedance amplifier input. Compact, sturdy. Case diameter  $1\frac{1}{8}$ ", length  $2\frac{1}{8}$ ", 7-foot cable. Shipping weight,  $1\frac{1}{4}$  pounds.

Model: A86A Code: RUDEB List Price: \$15.25

## TAPE RECORDING HEAD

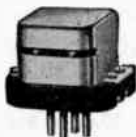
The Shure Tape Recording Head is a high quality, precision-engineered unit incorporating recording, reproducing, and erasing in one head. Suitable for all types of tape recording: professional, semi-professional, experimental, technical, and amateur use. Records on half width of tape—for double-track recording.



TAPE MODEL 815

Model: 815 Code: RUWAT List Price: \$15.00

## WIRE RECORDING HEAD



WIRE MODEL 812

The Shure magnetic Wire Recording Head is a high quality recording unit with recording, play-back, and signal erasure in one small unit. Has standard 4-prong adapter base. The Model "812" is a direct replacement unit for the improved Sears-Roebuck Wire Recorder.

Model: 812 Code: RUWIR List Price: \$15.00

## "GRIP-TO-TALK SLIDE-TO-LOCK" SWITCH

This rugged Heavy-Duty Switch employs a long life, leaf-type switch element that withstands the most severe field requirements of paging and dispatching systems. Has spring-temper, phosphor-bronze switch blades with pure silver contacts. Ideal for Police, Taxi-Cab, Railroad, Airport, Bus, Truck, and all emergency communications work. Large grip-bar assures positive contact. Firm downward pressure on grip-bar locks switch. Can be used with Shure connector-type crystal, dynamic and carbon microphones of any impedance. Fits handily on Shure S36A Desk Stand as shown in illustration. No soldering necessary, simply plug in. Switch element can be readily removed for rewiring to accommodate other switching combinations. Rich satin chrome finish. Shipping weight 1 pound.



MODEL A88A

Model: A88A

Code: RUNEL

List Price \$10.75

## ON-OFF PRESS-TO-TALK SWITCHES



A83B



A84B



A85C

Plug into the microphone quickly and conveniently. Durable, dependable. No soldering necessary.

Model A83B. Rotary-type "On-Off" switch. Quickly attached to any cable-connector type Shure microphone. Internal plug establishes connections. Bakelite arrow knob.

Code: RUNIM

List Price: \$6.00

Model A84B. Momentary "On-Off" switch. Press-to-talk Bakelite disc.

Code: RUNID

List Price: \$7.00

Model A85C. Momentary Relay-Type switch. Press-to-talk Bakelite disc. Normally-open switch closes circuit comprising one conductor and shield of outgoing cable for operation of relay or other device; remaining conductor and shield of cable carry microphone output. Must be used with two-conductor shielded cable. Standard Shure cable-connector receptacle. Satin chrome finish.  $1\frac{3}{4}$ " high x  $1\frac{1}{8}$ " wide x 2" deep. Shipping weight  $\frac{3}{4}$  pounds.

Code: RUNAT

List Price: \$10.00

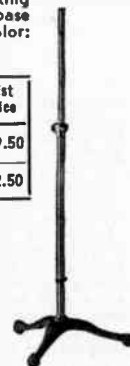
## FLOOR STANDS

The new Shure Floor Stands have been designed to look smart and work perfectly. They will fit into any type of installation because of their design and rich hammered finish. Locking device has been life-tested 5,000 times. Stabilized base cushioning reduces floor noise pickup by 10 to 18 db. Color: Pearl Gray.

Model	Base Style	Weight of Base	Base Diam.	Height Adjustment	Shpg. Wt.	Code	List Price
S61	Round	9 $\frac{1}{4}$ lbs.	12"	44"—68"	13 lbs.	RUSIT	\$19.50
S65	Tri-pod	9 $\frac{1}{4}$ lbs.	17 $\frac{1}{8}$ "	46"—70"	15 lbs.	RUSIV	\$22.50



MODEL S61



MODEL S65

# SHURE

## CRYSTAL PHONOGRAPH PICKUPS

### "VERTICAL DRIVE" CRYSTAL PICKUPS

Recommended for superlative reproduction of fine-groove vinylite and high quality standard-groove recordings. Arm is lightweight die-cast aluminum and tracks faithfully at 7 grams. These pickups have adequate output for the average audio stage, with extended frequency response. Turnover model (901D) has a knob for quick, easy turning to either fine-groove or standard-groove playback position.



Model 901 Series  
"Vertical Drive"  
Pickup

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	NEEDLE FORCE	RESPONSE TO	NEEDLE	SHURE NEEDLE NUMBER	SHPG. WT.	CODE
901MG	MG	\$12.75	1.0 V.*	5 grams	10,000 c.p.s.	.001" Sapphire	A65MG	12 oz.	RUZUG
901A	STD	\$11.75	1.1 V.**	7 grams	6,500 c.p.s.	.0027" Sapphire	A61A	12 oz.	RUZAY
	MG		1.0 V.*			.001" Sapphire			
901D	STD	\$16.25	1.1 V.**	7 grams	6,000 c.p.s.	.0027" Osmium	A62A	12 oz.	RUZEL
	All Purpose		MG			1.0 v.			
901U	All Purpose	\$11.75	.87 v.	8 grams	7,500 c.p.s.	Unipoint Osmium	A66U	8 oz.	RUZUP

\*Output on Columbia 33 $\frac{1}{3}$  r.p.m. records and RCA 45 r.p.m. records. \*\*Output with .0027" needle on 78 r.p.m. records.

### "MUTED STYLUS" CRYSTAL PICKUPS

These pickups feature the famous amazingly quiet "Muted Stylus" Crystal Cartridges. Have low needle force with high output and smooth frequency response. Have unique needle guards and record and needle protection. Arm is lightweight die-cast aluminum with handy pickup handle. Model 900HS "Humi-Seal" has moisture-proofed, metal-seal crystal element and is highly recommended for use in humid areas.



Model 900 Series  
"Muted Stylus"  
Pickup

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	NEEDLE FORCE	RESPONSE TO	NEEDLE	SHURE NEEDLE NUMBER	SHPG. WT.	CODE
900B	STD	\$10.50	1.6 V.	1 $\frac{1}{8}$ oz.	4,500 c.p.s.	.0027" Osmium	A62A	12 oz.	RUZUD
900HS	"Humi-Seal" for Tropics	\$11.50	1.8 V.	1 $\frac{1}{8}$ oz.	4,500 c.p.s.	.0027" Osmium	A62A	12 oz.	RUZUA

### "GLIDER" CRYSTAL PICKUPS

These modern lightweight aluminum crystal pickups employ a needle force of 1 $\frac{1}{8}$  ounces. They are recommended for good quality installations where low cost is essential. These pickups use high output, lever-type crystal cartridges. Arms are scientifically designed for low mass and maximum tracking. Supplied with easy-to-use arm rest. Reduce record and needle wear. Minimum surface noise, needle scratch and hiss.



Models 93A, 96A,  
900MG  
"Glider" Pickup

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	NEEDLE FORCE	RESPONSE TO	SHURE NEEDLE NUMBER	NEEDLE SCREW	SHPG. WT.	CODE
93A	STD	\$7.50	1.8 V.	1 $\frac{1}{8}$ oz.	6,000 c.p.s.	NONE	Set and Thumb	13 oz.	RUGLI
96A	Hi-Level	\$8.50	4.3 V.	1 $\frac{1}{8}$ oz.	6,000 c.p.s.	NONE	Set and Thumb	13 oz.	RUGAB
900MG	MG	\$12.50	1.0 V*	6 grams	8,500 c.p.s.	A64MG	Set Screw	13 oz.	RUZUZ

\*Output for 33 $\frac{1}{3}$  r.p.m. fine groove records. Output 1.3 V. on R.C.A. 45 r.p.m. records.

### SHURE "MUTED STYLUS" NEEDLES

MODEL	DESCRIPTION	LIST PRICE	CODE
A61A	STD-Sapphire	\$2.50	RUZAN
A62A	STD-Osmium	1.50	RUZAP
A63MG	MG-Osmium	1.50	RUGAZ
A64MG*	MG-Osmium	2.00	RUZAS
A65MG	MG-Sapphire	2.50	RUGAY
A67U	All Purpose Sapphire	2.50	RUZIN
A66U	All Purpose Osmium	1.50	RUZIK

\*Standard bent shank needle not illustrated.



2-5 Years  
Average use



8 to 12 Months  
Average use

# CRYSTAL PICKUP CARTRIDGE DATA SHEET

# SHURE

## Manufacturers Column

Check this column for replacement numbers.

Shure Mfr's No.	Shure Replacement
P30-C	W60B
P30B-W	W60A
P30D-G-S	W61B
P30E-HS	W60HS
P35-S	W65B
P37-C	W66B
P37A-CA	W66A
P70	W23B
P70A	W23A
P71-B-C	W26B
P71A-CA	W26A
P72-AF	W22AB
P72A	W22A
P72V	W22AB
P73-A	W21A
P73AR-R	W21AR
P76-AF-AFV-V	W22AB
P76A-AV	W22A
P77-V	W22AB
P77A-AV	W22A
P79	W22AB
P81-AD-C-E	W26B
P81A-CA-D	W26A
P85	W23B
P86R	W65R
P87-B	W57A
P87S	W58A
P88-S	W59A
P89-S	W56A
P89L-R-RE	W65R
P90B-C-S	W58A
P90D	W57A
P90HS	W58HS
P92B	W58A
P93-B-C-D	W57A
P93E	W58HS
P93MG	W53MG
P93S	W58A
P94-B	W57A
P94E	W58HS
P95MG	W53MG
PC30	WC60B
PC72V	WC22AB
PN30-S	W60PN
PN31S	W60PN
PN88-S	W56PN
PN89-D-E-S	W56PN
W40A	W59A
W41A	W59A
W42A	W42B
W57AN	W60A
99-180	W59A
99-181	W59A
99-182	W42B

**"VERTICAL DRIVE" CRYSTAL CARTRIDGES** are ideal for fine-groove vinylite and high quality standard-groove recordings. Minimum mass with maximum needle compliance. Needle chuck on vertical rather than on horizontal axis. Equipped with the famous "Muted Stylus" needle which plays with amazing quietness. Pin jacks included.

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	MIN. NEEDLE FORCE	RESPONSE TO	NET WEIGHT	SHURE NEEDLE NUMBER	CODE
W21A	MG	\$ 8.75	1.0 V.*	5 grams	10,000 c.p.s.	4½ grams	A65MG	RUVET
†W21AR	MG	8.75	1.0 V.*	5 grams	10,000 c.p.s.	4½ grams	A65MG	RUVAR
W22A	MG	11.75	1.0 V.º	6 grams	6,000 c.p.s.	5 grams	A65MG	RUAL
	STD		1.1 V.**				A61A	
W22AB	MG	10.75	1.0 V.º	6 grams	6,000 c.p.s.	5 grams	A65MG	RUVAX
	STD		1.1 V.**				A62A	
W23A	STD	8.75	1.1 V.**	6 grams	7,000 c.p.s.	4½ grams	A61A	RUVAY
W23B	STD	7.75	1.1 V.**	6 grams	7,000 c.p.s.	4½ grams	A62A	RUVER
W26A	All Purpose	\$8.75	MG STD	8 grams	7,500 c.p.s.	4½ grams	A67U	RUVUP
			.87 v. 1.0 v.					
W26B	All Purpose	\$7.75	MG STD	8 grams	7,500 c.p.s.	4½ grams	A66U	RUVUN
			.87 v. 1.0 v.					

† Special bracket for RCA Changer.

\* Output on Columbia 33½ r.p.m. records and RCA 45 r.p.m. records. \*\* Output with .0027" needle on 78 r.p.m. records.

**"LEVER-TYPE" CRYSTAL CARTRIDGES** have extremely high needle point compliance and high voltage output. All standard needles will fit these cartridges. Furnished with easy-to-use pin jacks, eliminating need for soldering to cartridge terminals.

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	MIN. NEEDLE FORCE	RESPONSE TO	CASE MATERIAL	NEEDLE SCREW	CODE
W42B	STD	\$4.45	1.3 V.	1 oz.	5,000 c.p.s.	Steel	Thumb	RUGUB
†W53MG	MG	\$8.50	1.0 V.*	6 grams	8,500 c.p.s.	Aluminum	Set	RUGET
W56A	Hi-Level	\$6.65	4.3 V.	1½ oz.	6,000 c.p.s.	Aluminum	Thumb & Set	RUGUS
W57A	STD	\$5.55	1.6 V.	¾ oz.	6,000 c.p.s.	Aluminum	Thumb & Set	RUGLA
W58A	STD	\$5.55	1.6 V.	1 oz.	6,000 c.p.s.	Steel	Thumb & Set	RUGLU
W58HS**	"Humi-Seal"	\$6.55	1.6 V.	1 oz.	6,000 c.p.s.	Steel	Thumb & Set	RUGUY
W59A	STD	\$5.55	2.5 V.	1 oz.	6,000 c.p.s.	Steel	Thumb & Set	RUGAT
W56PN	PN Crystal	\$10.00	1.9 V.	1½ oz.	8,000 c.p.s.	Aluminum	Thumb & Set	RUTAR

\* Output on 33½ r.p.m. fine groove records Output 1.3 V. on R.C.A. 45 r.p.m. records. \*\* "Humi-Seal"—Moisture-proofed Rochelle Salt Crystal Cartridge.

† Furnished with A64MG needle.

**"MUTED STYLUS" CRYSTAL CARTRIDGES** are equipped with the famous amazingly quiet "Muted Stylus" needle to overcome problems of surface noise and distortion. Provide record-matched frequency response for clear, full, tone qualities. Rounded guards protect needle and record. Pin jacks included.

MODEL	TYPE	LIST PRICE	OUTPUT LEVEL	MIN. NEEDLE FORCE	RESPONSE TO	CASE MATERIAL	SHURE NEEDLE NUMBER	CODE
W60A	STD	\$8.50	1.6 V.	1 oz.	4,500 c.p.s.	Aluminum	A61A	RUSIS
W60B	STD	\$7.50	1.6 V.	1 oz.	4,500 c.p.s.	Aluminum	A62A	RUSID
W60HS	"Humi-Seal" for Tropics	\$8.50	1.8 V.	1 oz.	4,500 c.p.s.	Steel	A62A	RUSIB
W60PN	PN Crystal	\$13.00	0.7 V.	¾ oz.	4,500 c.p.s.	Aluminum	A62A	RUTAP
W61B	STD	\$7.50	1.6 V.	1 oz.	4,500 c.p.s.	Steel	A62A	RUSIC
W65B	High Output	\$8.50	4.0 V.	1 oz.	4,500 c.p.s.	Steel	A62A	RUSIG
W65R	Cut-Cart.	\$8.75	3.0 V.	1 oz.	4,500 c.p.s.	Aluminum	A62A	RUSUT
W66A	All Purpose	\$8.50	MG STD	8 grams	4,500 c.p.s.	Aluminum	A67U	RUSUP
			2.0 v. 2.3 v.					
W66B	All Purpose	\$7.50	MG STD	8 grams	4,500 c.p.s.	Aluminum	A66U	RUSUN
			2.0 v. 2.3 v.					

## CARTRIDGE REPLACEMENT PACK

THE "TROPI-PAC" Model W50T, contains W60HS and W58HS. List Price 15.00

"9-OUT-OF-TEN" PACK, Model W60B contains W60B, W58A, and W57A. List Price... \$18.50



"9 out of 10" Pack "TROPI-PAC"



"Vertical Drive" Cartridge W20 Series



Lever-Type Cartridge Series



"Muted Stylus" Cartridge W60 Series

No finer choice than

**Electro-Voice**

Microphones

# Cardioid Unidirectional Microphones

## IMPROVED CARDYNE BROADCAST DYNAMIC

**True Cardioid with New Impedance Selector, New Dual-Type External Shock Mount, Smooth Wide Range Response, High Output.**

*Better than ever* for high quality sound pick-up and reproduction. Response is improved . . . output increased. New impedance selector on rear of case instantly gives you high impedance (25,000 ohms) or match to all low impedances. New dual-type external shock mount prevents reproduction of external shocks and stand vibration, reduces side sway of microphone. Exclusive Acoustalloy diaphragm withstands severest service.

E-V Mechanophase\* principle gives wide angle front pick-up, dead at rear . . . cuts reverberation and random noise pick-ups . . . stops feedback . . . nearly doubles conventional pick-up range . . . provides clear, natural close-up response . . . permits increased loudspeaker volume . . . gives users more freedom of movement. Used in studio and remote broadcasting, disc and film recording, public address and communications.

Output level: 50 db below 1 volt/dyne/cm<sup>2</sup>. Frequency response, substantially flat, 30-12,000 c.p.s. Highest quality die cast case beautifully finished in satin chromium. Tiltable head.  $\frac{3}{8}$ "-27 thread. Cannon XL-3 connector. Internal shock absorber. "On-off" switch. 20 ft. shielded cable. Size  $2\frac{1}{2}$ " x  $3\frac{1}{2}$ " x 9" including stud. Net wt.  $2\frac{1}{2}$  lbs.

**CARDYNE II Model 731. List Price** ..... **\$80.00**

(Also available without "On-Off" switch or with 50-250 ohm impedance selector.)

## POPULAR CARDYNE DYNAMIC

**CARDYNE I. Model 726.** Performance characteristics similar to Model 731 above. Has Impedance Selector, but does not include external shock mount. Frequency response, substantially flat, 40-10,000 c.p.s. Output level -53 db. Has Amphenol MC-3 connector.

**CARDYNE I. Model 726. List Price** ..... **\$59.50**

(Model 345 External Shock Mount also available separately. List Price \$11.50)

## MODERN CARDAX CRYSTAL

**The First and Only High Level Cardioid Crystal Microphone with Dual Frequency Response.**

*Favorite of thousands!* Easily solves everyday sound problems. E-V Mechanophase\* principle provides *true cardioid* unidirectivity. Wide angle front pick-up—dead at rear. E-V *Dual Frequency Response Selector* gives wide range flat response for high fidelity pick-up of voice and music, or rising characteristic for extra crispness of speech.

The CARDAX overcomes background noise, reverberation, feedback. Simplifies microphone and speaker placement. Permits greater loudspeaker volume levels. Highly recommended for public address, recording, remote broadcast, paging, dispatching, and communications.

Output level: -57 db for high fidelity; -48 db for rising response. Smart, compact, easily portable. Rich satin chromium finish. High capacity Metal Seal crystal—fully enclosed for greater moisture protection. Tiltable head.  $\frac{3}{8}$ " -27 thread. Built-in cable connector. "On-Off" switch. Size  $2\frac{1}{2}$ " x  $2\frac{3}{4}$ " x  $6\frac{1}{4}$ " including stud. Net wt.  $1\frac{1}{4}$  lbs.

**Cardax Model 950. List Price** ..... **\$39.50**  
\*Patents Pending.



No finer choice than

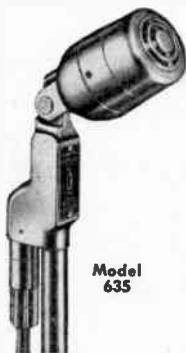
**Electro-Voice**

Microphones

## High Fidelity Broadcast Dynamics



Model 650



Model 635



Model 645

**Ultra-Wide Range, Flat Response! High Output! Impedance Selector! Dual Shock Mount! Laboratory Calibrated. Proved in Studio and Remote Use!**

Developed in cooperation with station and network engineers, E-V Broadcast Dynamic Microphones meet the most exacting requirements of modern, high fidelity FM and AM broadcast service. Performance-proved on important network programs. The bass end is smooth and flat. The highs are particularly clean and peak-free. High output level gives excellent signal to noise ratio.

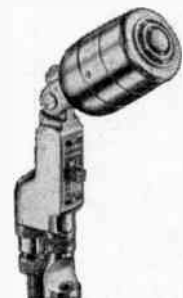
Consistently accurate, ultra-wide-range, flat response is achieved through specially designed non-metallic Acoustalloy diaphragm and highly efficient magnetic structure. Close tolerances and individual laboratory control guarantee uniformity. Ideal for studio and remote broadcasting, audience participation, applause pick-up, recording, and high quality public address. Construction is extremely rugged and shock-resistant. Highest purity (99.99%) pressure cast case, finished in durable Satin Chromium.

Polar pattern is omnidirectional at low frequencies becoming directive at high frequencies. Recessed switch gives instant selection of 50 to 250 ohms impedance. Built-in Cannon XL-3 connector. Tilttable head.  $\frac{5}{8}$ "-27 stand coupler. 20 ft. cable.

**Model 650 Broadcast Dynamic.** Frequency response, plus or minus 2.5 db, 40-15,000 cps. Output —48 db. Dual type external shock mount. Size  $2\frac{1}{4}$ " x  $4\frac{1}{4}$ " x  $5\frac{1}{4}$ " including stud. Shock mount is  $1\frac{1}{2}$ " x  $3\frac{3}{4}$ ". Net wt., including shock mount, 2  $\frac{3}{4}$  lbs. List Price .....\$150.00

**Model 645 Broadcast Dynamic.** Frequency response, plus or minus 2.5 db, 40-15,000 cps. Output —50 db. Dual type external shock mount. Size  $2\frac{1}{4}$ " x  $4\frac{1}{4}$ " x  $5\frac{1}{4}$ " including stud. Shock mount is  $1\frac{1}{2}$ " x  $3\frac{3}{4}$ ". Net wt., including shock mount, 2  $\frac{3}{4}$  lbs. List Price .....\$100.00

**Model 635 Broadcast Dynamic.** Frequency response, plus or minus 2.5 db, 60-13,000 cps. Output —53 db. Does not include external shock mount. Can be used in the hand or on a stand. Size  $2$ " x  $4\frac{1}{4}$ " x  $4\frac{1}{4}$ " including stud. Net wt., 1  $\frac{1}{2}$  lbs. List Price.....\$60.00



### Model 630—High Fidelity, High Output Dynamic

Finer performance than ever . . . in a moderately priced moving-coil dynamic! E-V Acoustalloy diaphragm provides exceptionally smooth response from 40-11000 c.p.s. Assures high quality reproduction of speech and music, indoors and outdoors. Compact, rugged . . . withstands heat, humidity and other severe operating conditions. Tilting head for directional or non-directional use. Built-in cable connector.  $\frac{5}{8}$ "-27 thread. "On-Off" switch. Widely used in all types of applications. Highest purity pressure-cast case, finished in lustrous satin chromium. Output level 53 db below 1 volt/dyne/cm<sup>2</sup>. Equipped with 20 ft. shielded cable. Net weight, 1  $\frac{1}{4}$  lbs. Available in Hi-Z (direct-to-grid, 25,000 ohms), 50, 200, or 250 ohms impedance. Low impedances balanced to ground.

Model 630, List Price .....\$36.50

### Model 606—DIFFERENTIAL\* DYNAMIC

Effectively used in airport control towers, police dispatching, special events broadcasting, close-talking public address, and high noise industrial applications. Through exclusive E-V DIFFERENTIAL\* principle, surrounding or distant sounds are cancelled out. Transmitted speech gets through clearly and completely. Frequency response, substantially flat 100-8000 c.p.s. Output level: 57 db below 1 volt/dyne/cm<sup>2</sup>. E-V Acoustalloy diaphragm. Withstands severe service. Built-in cable connector. Pressure cast metal case, finished in satin chromium. Head at 22° fixed tilt.  $\frac{5}{8}$ "-27 threads. Net wt., 12 ounces. Available in Hi-Z (direct-to-grid 25,000 ohms), 50, 200, or 250 ohms. Low impedances not balanced to ground.

Model 606-8. With 8 ft. cable. List Price .....\$36.50

Model 606-20. With 20 ft. cable. List Price .....\$38.00

\*Patent Number 2,350,010



## A GREAT NEW VALUE IN DYNAMIC and CRYSTAL

### The MERCURY Models 611-911

E-V quality features make the MERCURY today's foremost value in low-cost general-purpose microphones. Adds smartness to economical public address and paging systems, recording equipment, ham rigs. Smooth response 50-8000 cps assures fine reproduction of voice and music. High output level. Non-directional, becoming directional at higher frequencies. Compact, rugged. "On-Off" switch. Tilttable head. Built-in cable connector. Highest purity (99.99%) pressure cast case. Satin Chromium finish. Size  $2\frac{1}{4}$ " x  $3\frac{3}{4}$ " x  $6\frac{1}{4}$ " including stud.



Moving-coil Dynamic Models are available in Hi-Z (direct-to-grid, 25,000 ohms) 50, 150, 250, or 500 ohms impedance. Low impedances balanced to ground. Crystal Models are Hi-Z.

**MERCURY Model 611-8. Dynamic.** Output —53 db. Has E-V Acoustalloy diaphragm. 8 ft. cable. List Price .....\$29.50

**MERCURY Model 611-20. Dynamic.** With 20 ft. cable. List Price .....\$31.00

**MERCURY Model 911-8. Crystal.** Output —50 db. Fully enclosed Metal Seal crystal. 8 ft. cable. List Price .....\$22.50

**MERCURY Model 911-20. Crystal.** With 20 ft. cable. List Price .....\$24.00

### Model 605 Durable Dynamic



Attractive, dependable, general-utility mike. Frequency response 50-7500 c.p.s., substantially flat. Output level 57 db below 1 volt/dyne/cm<sup>2</sup>. Exclusive E-V Acoustalloy diaphragm. Pressure cast case, with 22° fixed tilt.  $\frac{5}{8}$ "-27 thread. Built-in cable connector. Satin Chromium finish. Net wt., 12 ounces. Available in

Hi-Z (direct-to-grid, 25,000 ohms), 50, 200, or 250 ohms impedance. Low impedances not balanced to ground.

Model 605-8. With 8 ft. cable. List Price .....\$24.50

Model 605-20. With 20 ft. cable. List Price .....\$26.00

### Model 805 Contact Microphone

For guitar, banjo, mandolin, violin or any vibrating musical instrument. Increases natural sound volume, enriches tonal effects. Easily installed. Frequency response 40-8,000 c.p.s. High impedance. Inertia type crystal, sealed against moisture and acoustic feedback. 15 ft. shielded cable. Size  $2\frac{1}{4}$ " x  $1$ " x  $7/16$ ". Net wt. 2 ounces.



Model 805, List Price .....\$15.00

## Mobil Mikes

### Model 600-D Dynamic Mobil-Mike

Specially designed for clear, crisp speech transmission in communications, public address, call systems and recording. Frequency response, substantially flat, 100-6000 c.p.s. gives higher articulation, provides more usable power level, and is less fatiguing to the listener. Output level: 55 db below 1 volt/dyne/cm<sup>2</sup>. High impact black phenolic case. E-V Acoustalloy diaphragm. Extremely rugged, for indoor and outdoor use. Press-to-talk switch controls relay. Panel mounting bracket. Equipped with 6 ft. shielded cable. Size 2 1/4" x 2" x 4". Net weight, 8 ounces. Available in Hi-Z (direct-to-grid, 25,000 ohms), 50, 200, 250, or 500 ohms impedance. Low impedance balanced to ground.



Model 600-D. List Price .....\$35.00  
Model 600-DL. With switch lock. List Price .....\$36.50

### Model 210—Carbon Mobil-Mike

Gives high intelligibility speech transmission. Used in police, fire, taxi, aircraft, marine and amateur communications, mobile public address, paging, dispatching and speech recording. Extra rugged, high impact black phenolic case. Withstands severest service indoors and outdoors. Frequency response substantially flat 100-4000 c.p.s. for high articulation. Output level: 10 db. below 1 volt/100 dynes/cm<sup>2</sup>. Single button. Press-to-talk switch. 5 ft. cable. Standard dash mounting clip. Size 2 1/4" x 2" x 4". Net wt. 7 ounces.



Model 210. List Price .....\$25.00  
Model 210-L. List Price .....\$26.50

(Also available for exact replacement in Motorola, RCA, G. E. and similar equipment.)

### Model 205—Hand-Held DIFFERENTIAL\* CARBON

Close-talking, noise-cancelling microphone designed for maximum intelligibility under intense noise. Used in police, aircraft, marine, industrial and other communications applications; also in high power sound projection. Fits in the hand. Operates in all positions. High impact phenolic case, with panel mounting bracket on back. Blast proof, waterproof, shock resistant. Withstands temperatures from -40° to +185° F. Frequency response, substantially flat from 100-4000 c.p.s. Output level: 10 db below 1 volt/100 dynes/cm<sup>2</sup>. 10-50 m. a. button current. Press-to-talk switch actuates button and relay. Equipped with 5 ft. cable. Size 2 1/4" x 2 1/4" x 4". Net weight 7 ounces.



1 volt/100 dynes/cm<sup>2</sup>. 10-50 m. a. button current. Press-to-talk switch actuates button and relay. Equipped with 5 ft. cable. Size 2 1/4" x 2 1/4" x 4". Net weight 7 ounces.

Model 205. List Price .....\$30.00  
Model 205-L. With switch lock. List Price .....\$31.50

### Model 602—Hand-Held DIFFERENTIAL\* DYNAMIC

Close-talking, noise-cancelling speech microphone for use where ambient noise is 100 db or more. Assures high articulation. Especially suitable for marine, industrial and emergency communications, high power sound projection, and for speech in any windy, wet or extremely hot or cold location. Frequency response, substantially flat, 100-6000 c.p.s. Output level: 55 db. below 1 volt/dyne/cm<sup>2</sup>. E-V Acoustalloy diaphragm. High impact phenolic case. Press-to-talk switch controls relay. Panel mounting bracket. size 2 1/4" x 2" x 4". Net weight, 8 ounces. Equipped with 6 ft. shielded cable. Available in Hi-Z (direct-to-grid, 25,000 ohms), 50, 200, 250, or 500 ohms impedance.



Model 602. List Price .....\$40.00  
Model 602-L. With switch lock. List Price .....\$41.50

## Velocity

### High Fidelity, Bi-Directional, High Output

E-V design provides superb pick-up and reproduction of voice and music, for indoor public address, broadcasting and recording. Favorite of well-known orchestras and sound engineers. Response is substantially flat over a wide frequency range. Equal front and back pick-up with longer pick-up range; zero pick-up at sides, top and bottom. Proper tilting and placement of microphone reduces feed-back and random noise—permit increased volume levels. Open-type, reflection-free housing. Internal shock absorber mounting. One-piece frame and internal mounting structure give extra ruggedness.

### Model V-3 All Impedance Velocity

Combines all popular impedances in one microphone. Impedance selector provides high impedance or match all low impedances. Low impedances balanced to ground. Substantially flat response 40-10,000 c.p.s. Output —53 db. Locking cradle for tilting microphone. Built-in cable connector. 3/8"-27 thread. Bronze gun metal finish. Size 3 1/2" x 2 3/4" x 8" including stud. 20 ft. shielded cable. Net wt., 2 1/2 lbs. Model V-3. List Price .....\$60.00



### Model V-2A Velocity Microphone

Similar to the V-3, but without Vari-Z selector. Choice of single standard impedance: 50, 250, 500 ohms, or Hi-Z (35,000 ohms). Frequency response, substantially flat, 40-10,000 c.p.s. Output —53 db. Locking cradle mounting. Built-in cable connector. 3/8"-27 thread. Bronze gun metal finish. Size 3 1/2" x 2 3/4" x 8" including stud. 20 ft. shielded cable. Net weight, 2 1/2 lbs.

Model V-2A. List Price .....\$50.00

### Model V-1A Smaller-Size Velocity

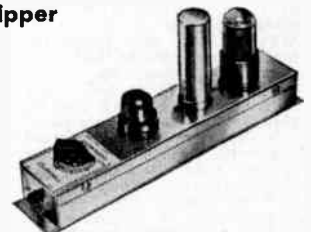
Unsurpassed at such moderate cost. Gives you high fidelity, bi-directional advantages in a compact, smaller size microphone. For public address, recording and remote broadcasting. Substantially flat response 40-9000 c.p.s. Output —59 db. Locking cradle mounting. Built-in cable connector. 3/8"-27 thread. Satin chromium finish. Size 2 3/4" x 2 1/8" x 6 1/2" including stud. 20 ft. shielded cable. Net wt., 2 lbs. Available in Hi-Z (35,000 ohms), 50, 250 or 500 ohms impedance. Low impedances not balanced to ground.

Model V-1A. List Price .....\$40.00



### Model 1000 Speech Clipper

Clips the tops and bottoms from speech frequencies which rise above a pre-set amplitude — increases the ratio of consonant to vowel intensity. Adds greatly to articulation and intelligibility in speech transmission, especially in the presence of high QRM or QRN. Attenuates sidebands above 3000 c.p.s. Holds modulation at 100%. Clipping: 3-20 db. Response: 200-3000 c.p.s. Operates directly from any high impedance microphone into microphone input of conventional speech amplifier. Uses type 68C7 and 6H6 tubes. Requires 150 volts at 5 ma and 6.3 volts at .6 amp. Input terminal: PC1M connector. Output terminal: 18" shielded cable. Compact, sturdy, aluminum case. Size 10 1/4" x 2" x 4 1/2". Comes wired, with tubes. Easy to install. List Price .....\$24.50



No finer choice than

**Electro-Voice**

Microphones

# Multi-Purpose CENTURY Microphone

DESIGNED FOR ALL  
LOW COST APPLICATIONS



**CRYSTAL • DYNAMIC • CARBON**

Brilliantly engineered and superbly styled low-cost microphones. Complete adaptability permits widest use in public address, paging, recording, communications. Choice of crystal, dynamic or carbon types. Can be used in any position—stands by itself on table or desk—rests on its back—can be comfortably handheld, mounted on a stand or suspended overhead. Highest purity pressure-cast case is finished in lustrous gray-brown. Rugged, light weight. Size 3" x 2-3/16" x 1".



ON FLOOR OR  
DESK STAND

ON MODEL 415  
DESK MOUNT

FITS EASILY  
IN HAND

**Model 915—Century Crystal**

Combines excellent frequency range, high level and mounting flexibility. Case provides ample shielding and stability. Moisture-sealed crystal. High impedance. Output -50 db. Frequency response 60-7500 c.p.s. 7 1/2 ft. black glazed cloth covered, shielded cable and 3/4"-27 thread stand adapter. Net wt. only 6 ounces. Model 915. List Price .....\$10.00 Model 915-S. With slide-to-talk switch. List Price .....\$11.50

**Model 215—Century Carbon**

Provides high output—high articulation—exceptionally low hiss level (50 db below normal speech)—low distortion. Responds well in all positions. Positive Fiber-glass carbon retention (E-V Patent). Normalized diaphragm seat (E-V Patent). Output -26 db using input transformer. Voltage developed by normal speech (100 dynes): .56. Speech response 200-4000 c.p.s. Single button. 48" cable and 3/4"-27 thread stand adapter. Net wt. only 6 ounces. Model 215. List Price .....\$8.25 Model 215-S. With slide-to-talk switch. List Price .....\$9.75

**Model 615—Century Dynamic**

Has exclusive non-crushable Acoustalloy diaphragm. Withstands severe service. Output -57 db. Frequency response 55-7500 c.p.s. High impedance. 7 1/2 ft. black glazed cloth covered, shielded cable and 3/4"-27 thread stand adapter. Net wt. only 8 ounces. Model 615. List Price .....\$16.50 Model 615-S. With slide-to-talk shorting switch. List Price \$18.00

**Century Mobil-Mikes**

Designed for high articulation in radio amateur communications. Equipped with slide-to-talk relay control switch, 48" cable, and hang-up hook for dash mounting. Model 215-SR. Carbon. List .....\$10.00 Model 615-SR. Dynamic. List .....\$20.00

Model 415. Reclining Desk Stand. Mounts Century at 15° tilt. Gray-Brown finish. Size 2 1/2" x 2 1/2" x 1". Net wt. 4 oz. List Price.....\$1.50

## ELECTRO-VOICE FLOOR AND DESK STANDS

**Model 425—Deluxe Floor Stand**

In this unique floor stand, all dead weight is eliminated, but full stability retained. Simply press red button to raise or lower shaft with same one hand. Locks automatically by releasing button. Shaft can be rotated without any adjustment device. Adjustable legs permit placing flush against wall or speaker's table. Easy to assemble or take apart. Folds into small, compact, portable package. Highest purity pressure-cast base. Satin chromium finish. Height adjustment 37" to 66". 3-leg spread 17". Net wt. 7 1/2 lbs. Shipping, wt., 9 lbs.

Model 425. List Price .....\$24.50

**Model 430—Utility Floor Stand**

Gives solid support, yet light in weight. Single button gives instant control of shaft height. Shaft may easily be rotated. Modern, sturdy, high-pressure-cast base. One bolt locks 3 legs in position. Comes apart to make small, compact package. Attractive Gray finish. Extension shaft finished in satin chromium. Height adjustment 36" to 65". 3-leg spread 17". Net wt. 7 1/2 lbs. Shipping wt., 9 lbs.

Model 430. List Price .....\$15.00

**Model 424—Desk Stand**

Small, light weight. Designed for use with E-V Models 210, 205, 600-D and 602. Made of aluminum. Easily lifted with microphone in hand. Very stable on desk or table. Rubber base buttons. Satin finish. Size 4 1/2" x 4 1/2" x 3 3/4". Net wt., 4 oz.

Model 424. Desk Stand. List Price .....\$4.00

**Model 423—Desk Stand**

Modern, sturdy, round die cast base. Rests firmly. Satin chromium finish. Rubber base buttons. 3/4"-27 thread. Base diameter 5 1/4". Net wt. 1 lb. Choice of 3" or 6" stem riser.

Model 423. List Price .....\$4.00

**Model 427—Desk Stand**

Attractive pressure-cast round base rests stably on desk or table. 6" stem riser. Lustrous gray-brown finish. 3/4"-27 thread. Base diameter 4 1/2". Net wt. 1/2 lb.

Model 427. List Price .....\$2.50

### Low Impedance Microphone-to-Grid Matching Transformers

The windings of these transformers have low distributed capacity and are amply shielded against inductive hum by a high permeability shield, inside a pressure cast case. Designed for mounting on amplifier chassis or in series with the microphone line.

Model 502—Designed for 50 and 250 ohm (500 ohms optional) microphones. Broadcast fidelity. Frequency response 40-20,000 c.p.s. ± 1 db. for either speech or music. MC-4 input connector. List Price .....\$13.50

### "Break-in" Touch-to-Talk Stand

Fits any microphone with standard 3/4"-27 thread. Specially designed, lever-type switch for relay operation or microphone "On-Off"—closes or opens instantly, or locks in "talk" position, with light finger-tip action. Single pole, double throw. Finished in Satin Chromium, with gray plastic switch lever.

Model 428. Stand with switch. Ht. 7". Net wt. 1 1/2 lbs. Base dia. 5 1/4". List Price .....\$12.50

Model 328. Touch-to-Talk Switch only. Height 6 1/4". Net wt. 8 oz. List Price .....\$9.50

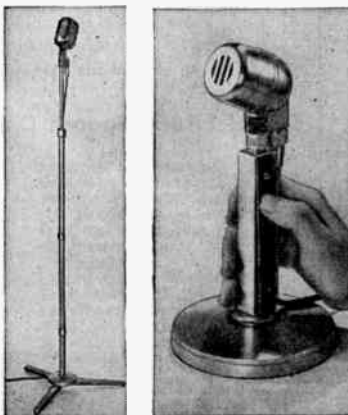
Model 628. Complete with E-V 605-8 HI-Z Dynamic Microphone. 8 ft. cable. List Price .....\$37.00

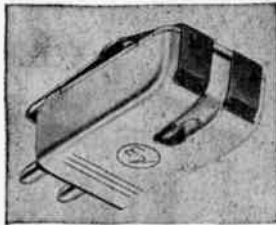
Model 629. Complete with E-V 606-8 HI-Z Differential Dynamic Microphone. 8 ft. cable. List Price .....\$49.00

**Model 432 Comb. Banquet & Floor Stand**

3-section take-apart gives handy 4-way use: (1) Banquet stand, extends from 19" to 34"; (2) chair-height floor stand, extends from 26" to 41"; (3) short floor stand, extends from 36" to 51"; (4) conventional floor stand, extends from 44" to 59". Easy to assemble or take apart. Makes compact, portable package. Red button gives instant finger-tip control of shaft height. Three-legged, locking-type, adjustable folding base; can be placed flush against pulpit, stage or speaker's rostrum. Attractive gray-brown finish. Extension shaft finished in Satin Chromium. Net wt., 8 lbs.

Model 432. List Price ....\$20.00





## E-V Series 12 TORQUE DRIVE CRYSTAL CARTRIDGES for 78 rpm Records

### Basic 3 Replace Over 150 Standard Models

The Series 12, with only 3 basic models, provides virtually universal replacement for 78 rpm cartridges. Enables immediate replacement of any one of over 150 types in general use. Simplifies and speeds servicing. TORQUE DRIVE quiets surface noise, muffles needle talk, cancels distortion — assures finer reproduction — preserves records and needles — gives new life to old, worn records. Silicone moisture-proofed. Aluminum case. Color coded for voltage. Size 1-3/32" x 11/16" x 5/16". Weighs only 1/5 oz. Complete with mounting hardware and replaceable 3-mil Osmium-tip or Sapphire-tip needle.

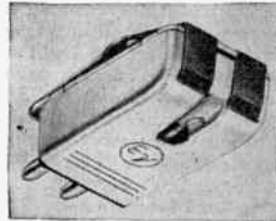
**Model L-12** (low voltage) **Model M12** (medium voltage) **Model H12** (high voltage)  
with 3-mil Osmium-tip needle. List Price .....\$7.50

**Model L12-S** (low voltage) **Model M12-S** (medium voltage)  
with 3-mil Sapphire-tip needle. List Price .....\$8.50

**Model O-3.** Replacement 3-mil Osmium-tip needle. List ....\$1.50

**Model S-3.** Replacement 3-mil Sapphire-tip needle. List ....\$2.50  
(Also available in variable reluctance Magnetic type. See listing in table on other side.)

● Revolutionary TORQUE-DRIVE\* gives you today's most efficient crystal cartridge for both 1-mil (.001) and 3-mil (.003) records. Its playing quality . . . its accurate, noiseless, distortion-free performance . . . are unexcelled. Proved by comparison, it is being used more and more in 78, 45 and 33 1/3 rpm single-speed and multi-speed record players. **FEATURES:** Highest compliance (softness of needle-touch to record) per volt output. Small size, low mass, light weight. Greatly multiplied needle-force to crystal for ample voltage output. Ideal frequency response. Excellent tracking. Zero output for vertical movement. No bearings or bushings to cause friction or to age and wear. Easy mounting. Replaceable long-life whisker-type needle. Silicone moisture-proofing for longer crystal life.



## E-V Series 14 TORQUE DRIVE CRYSTAL CARTRIDGES for 33 1/3 and 45 rpm

### Now in Thousands of Record Changers

Selected and specified as original equipment by critical engineers . . . the Series 14 is performing brilliantly today in many thousands of record changers. Tracks perfectly at 5 grams pressure, with very high needle compliance (softness of needle-touch to record). Frequency response closely follows NAB standard curve. Output is .9 volt on RCA 12-5-31V record at 1000 cps. Accurately reproduces the new fine groove high fidelity recordings. Silicone moisture-proofing gives crystal far longer life. Aluminum case, color coded. Size 1-3/32" x 11/16" x 5/16". Weighs only 1/5 oz. Replaceable 1-mil (.001) needle.

**Model 14.** Complete with 1-mil Osmium-tip needle, and mounting hardware. List Price .....\$7.50

**Model 14-A.** Same, less mounting hardware. List Price ....\$7.00

**Model 14-S.** Complete with 1-mil Sapphire-tip needle, and mounting hardware. List Price .....\$8.50

**Model 14-AS.** Same, less mounting hardware. List Price ....\$8.00

**Model O-1.** Replacement 1-mil Osmium-tip needle. List ....\$1.50

**Model S-1.** Replacement 1-mil Sapphire-tip needle. List ....\$2.50

(Also available in variable reluctance Magnetic type. See listing in table on other side.)

REPLACEMENT FOR						
ELECTRO-VOICE	ASTATIC		SHURE		WEBSTER	RCA
MODEL M12 Medium Voltage (Red)	L-22A	L-76S	P30	P93C	E4 N4	31050*
	L-25A	L-76AS	P30B	P93D	E4-1 N6	31156*
	L-26A	LT-M	P30C	P93E	E-9 N6P	32632*
	L-27A	LT-MA	P30D	P93S	F1 N6P-4	33122*
	L-32A	LT1-A	P30E	P94	F1P N8	33217*
	L-70	LT1-MA	P30S	P94B	F2 N8P	33905*
	L-70A	LT2-M	P87	P94E	F2P N9	34225*
	L-70S	LT2-MA	P87B	W42A	F3P N11	34307*
	L-70AS	LT3-M	P87S	W57A	F4P N11P	34710*
	L-71	1-J	P90B	W57AN	F5	35171*
	L-71A	1-M	P90C	W58A	F5P	37158*
	L-71S	401-A	P90D	W60A	F6	39686*
L-71AS		P90S	W60B	F6P		
L-76		P93	W60HS	N2		
L-76A		P93B	W61B	N3		
					AMERICAN	
						S-1
ELECTRO-VOICE	ASTATIC		SHURE		WEBSTER	AMERICAN
MODEL H12 High Voltage (Blue)	L-24A	L-72S	P88	W56A	C-2†	CR1A
	L-36A	L-72AS	P88S	W59A	C-3†	CR2A
	L-46A	L-82	P89	99-180	C-4†	S2
	L-50A	L-82A	P89S	99-181	N-10	
	L-72	L-82V	W40A		N-10P	
	L-72A	M-23	W41A		N-10P-1	
ELECTRO-VOICE	ASTATIC				WEBSTER	RCA
MODEL L12 Low Voltage (Yellow)	L-40A	LP-6	QC	QT-3JA	C5†	71173
	L-41A	LP-21	QT-J	QT-3M	F3	70339
	L-75	LP-23	QT-M	QT-3MA	F7P	70338
	L-75A	MLP-1	QT-2J		N3	
	L-75S	MLP-1J	QT-2M		N5	
	L-75AS	MLP-2	QT-3J		N7	

Use "A" mounting plate furnished with cartridges (1/4" hole centers) for all replacements except those marked with an \* or †.

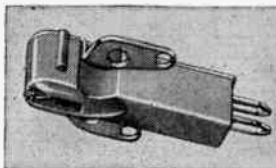
\* Use "B" mounting plate furnished (3/8" to 1 1/4" hole centers).

† Use "C" mounting plate furnished (Webster Side Flange).

All Model 12 Cartridges equivalent to ASTATIC "A" type except Tone Arm Rest Button is not supplied.

It is recommended that the lower voltage cartridge consistent with volume level be installed.

NOTE: Models M12, H12 and L12 have Osmium-tip Needle. For Cartridge with Sapphire-tip Needle, specify Model M12-S or L12-S.



## E-V Series 34 ORTHOGONAL TORQUE DRIVE for 45 and 33 1/3 rpm

New Orthogonal (vertical type) crystal cartridge — with 5/8" and 1/2" hole spacing — designed as replacement in 45 and 33 1/3 rpm changers. Brings to the record player valuable benefits of E-V TORQUE DRIVE. Tracks at 5 grams pressure. Extra high compliance (softness of needle-touch to record), well above unity. Frequency response is smooth, peak-free out beyond 10,000 cps. for wide range high fidelity reproduction. Output is 1.1 volt on RCA 12-5-31V record at 1000 cps. Silicone moisture-proofed. Simple to install. Replaceable 1-mil (.001) needle.

**Model 34.** With 1-mil Osmium-tip needle. List Price .....\$6.50

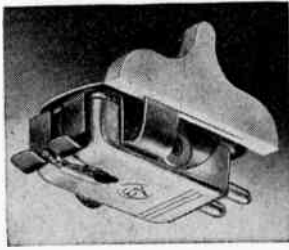
**Model 34-S.** With 1-mil Sapphire-tip needle. List Price ....\$7.50

**Model O-1.** Replacement 1-mil Osmium-tip needle. List ....\$1.50

**Model S-1.** Replacement 1-mil Sapphire-tip needle. List ....\$2.50

\*Electro-Voice Pat. Pend.  
Licensed under Brush Patents





## E-V Series 16 TWILT TORQUE DRIVE for All Three Speeds

Superbly plays 45, 33 $\frac{1}{2}$  and 78 rpm records, with a single twin-tip replaceable needle, without weight change, with tracking pressure of only 6 grams . . . and does it with all the fidelity, the smoothness, the efficiency inherent only in E-V TORQUE DRIVE. With easy, positive-tilting, snap action, you merely tilt the TWILT to select the 1-mil or 3-mil needle tip, for fast or slow speed records. Set down is accurate. Frequency response closely follows NAB standard curve. Output is .9 volt on either tip. Mounts easily in most any standard pickup arm, with nothing more required than reducing needle pressure. "Fast-Slow" decal indicator.

- Model 16-TT. Complete with twin-tip 1-mil Sapphire and 3-mil Osmium needle. List Price .....\$10.00  
 Model 16. Same, but without tilting mechanism. List Price .....\$9.00  
 Model 50-13. Replacement needle. Twin-tip 1-mil Sapphire and 3-mil Osmium. List Price .....\$3.00  
 Model 00-13. Replacement needle. Twin-tip 1-mil and 3-mil Osmium. List Price .....\$2.50  
 Model 55-13. Replacement needle. Twin-tip 1-mil and 3-mil Sapphire. List Price .....\$3.50  
 (See listing below for variable reluctance Magnetic type.)



## E-V TORQUE DRIVE KITS

### SPEED SALES AND SERVICE

E-V Series 12 Cartridges are available individually or in handy Sales and Service Kits. These Kits serve as eye-catching self-selling displays, speed replacement service, save ordering-time and servicing-time. Each Kit listed below contains the basic 3 that enable you to replace any one of over 150 standard models . . . immediately. Also has replacement needles in handy holders for quick sales. Color coding for voltage on every cartridge. Mounting hardware in each cartridge container.  
 KIT "A" (All Osmium-tip). Contains: 6 cartridges, with needles; 4 extra needles; replacement chart. Total List Price .....\$51.00  
 KIT "B" (All Sapphire-tip). Contains: 6 cartridges, with needles; 4 extra needles; replacement chart. Total List Price .....\$61.00

### VARIABLE RELUCTANCE MAGNETIC CARTRIDGES

E-V Phono Pick-up Cartridges are also available in variable reluctance Magnetic type. Easily used with E-V Model 503 Transformer-Filter, which provides the necessary matching network. Does not require a pre-amplifier. If the Magnetic cartridges are used with a pre-amp., the input to the pre-amp. should be 500 ohms. (See listing in table below.)

### ELECTRO-VOICE PHONO PICKUP CARTRIDGES

Model	Description	Type	Application	Needle-Tip	Tracking Force	Output Voltage	Color Code	Net Wt.	List Price
L12	With Mtg. Hardware	Crystal	78 RPM	.003" Osmium	1/2 os.	Low	Yellow	8 grams	\$ 7.40
L12-S	With Mtg. Hardware	Crystal	78 RPM	.003" Sapphire	1/2 os.	Low	Yellow	8 grams	8.50
M12	With Mtg. Hardware	Crystal	78 RPM	.003" Osmium	1/2 os.	Medium	Maroon	8 grams	7.50
M12-S	With Mtg. Hardware	Crystal	78 RPM	.003" Sapphire	1/2 os.	Medium	Maroon	8 grams	8.50
H12	With Mtg. Hardware	Crystal	78 RPM	.003" Osmium	1 os.	High	Blue	8 grams	7.50
14	With Mtg. Hardware	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Osmium	5 grams	.9 volt*	Green-Red Dot	8 grams	7.50
14-S	With Mtg. Hardware	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Sapphire	5 grams	.9 volt*	Green-Red Dot	8 grams	8.50
14-A	Less Mtg. Hardware	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Osmium	5 grams	.9 volt*	Green-Red Dot	6 grams	7.00
14-AS	Less Mtg. Hardware	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Sapphire	5 grams	.9 volt*	Green-Red Dot	6 grams	8.00
16-TT	TWILT (Twin-Tilt)	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Osmium	6 grams	.9 volt*		12 grams	10.00
16	Less Tilt. Mechanism	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Osmium	6 grams	.9 volt*		6 grams	9.00
16-STT	TWILT (Twin-Tilt)	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Sapphire	6 grams	.9 volt*		12 grams	10.50
16-S	Less Tilt. Mechanism	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Sapphire	6 grams	.9 volt*		6 grams	9.50
16-OTT	TWILT (Twin-Tilt)	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Osmium-.003" Osmium	6 grams	.9 volt*		12 grams	9.50
16-O	Less Tilt. Mechanism	Crystal	78, 45, 33 $\frac{1}{2}$ RPM	.001" Osmium-.003" Osmium	6 grams	.9 volt*		6 grams	8.50
34	5/8"-3/4" Hole Space	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Osmium	5 grams	1.1 volt*	Grey-Red Dot	5 grams	8.50
34-S	5/8"-3/4" Hole Space	Crystal	45, 33 $\frac{1}{2}$ RPM	.001" Sapphire	5 grams	1.1 volt*	Grey-Red Dot	5 grams	7.50
20	With Mtg. Hardware	Magnetic	78 RPM	.003" Osmium	15 grams	.070 volt†	Black	12 grams	7.50
20-S	With Mtg. Hardware	Magnetic	78 RPM	.003" Sapphire	15 grams	.070 volt†	Black	12 grams	8.50
22	With Mtg. Hardware	Magnetic	45, 33 $\frac{1}{2}$ RPM	.001" Osmium	6 grams	.060 volt††	Black-Red Dot	12 grams	7.50
22-S	With Mtg. Hardware	Magnetic	45, 33 $\frac{1}{2}$ RPM	.001" Sapphire	6 grams	.060 volt††	Black-Red Dot	12 grams	8.50
26-TT	TWILT (Twin-Tilt)	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Osmium	8 grams	.060 volt††	Black	16 grams	10.00
26	Less Tilt. Mechanism	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Osmium	8 grams	.060 volt††	Black	10 grams	9.00
26-STT	TWILT (Twin-Tilt)	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Sapphire	8 grams	.060 volt††	Black	16 grams	10.50
26-S	Less Tilt. Mechanism	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Sapphire-.003" Sapphire	8 grams	.060 volt††	Black	10 grams	9.50
26-OTT	TWILT (Twin-Tilt)	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Osmium-.003" Osmium	8 grams	.060 volt††	Black	16 grams	9.50
26-O	Less Tilt. Mechanism	Magnetic	78, 45, 33 $\frac{1}{2}$ RPM	.001" Osmium-.003" Osmium	8 grams	.060 volt††	Black	10 grams	8.50
503	Transformer-Filter		For Series 20, 22, 26 Magnetic Cartridges					3 1/2 os.	10.00

### ELECTRO-VOICE REPLACEMENT NEEDLES

Model	Description	Type	Application	Needle-Tip	Output	Color	List Price
O-3	Needle Only	Single-tip	For Series 12 and 20	.003" Osmium		Yellow	1.50
S-3	Needle Only	Single-tip	For Series 12 and 20	.003" Sapphire		Blue	2.50
O-1	Needle Only	Single-tip	For Series 14, 34, 22	.001" Osmium		Orange	1.50
S-1	Needle Only	Single-tip	For Series 14, 34, 22	.001" Sapphire		Red	2.50
SO-13	Needle Only	Twin-Tip	For Series 16 and 26	.001" Sapphire-.003" Osmium		Orange	3.00
OO-13	Needle Only	Twin-Tip	For Series 16 and 26	.001" Osmium-.003" Osmium		Yellow	2.50
SS-13	Needle Only	Twin-Tip	For Series 16 and 26	.001" Sapphire-.003" Sapphire		Blue	3.50

\*On RCA 12-5-31V Record at 1000 c.p.s. †On Columbia 10004 Record at 1000 c.p.s. Output is .7 volt with E-V Model 503 Transformer-Filter.  
 ††On Columbia 10004 Record at 1000 c.p.s. Output is .8 volt with E-V Model 503 Transformer-Filter.



**TURN TO** *Microphones*  
**BY TURNER** for "sound performance"



**THE WORLD FAMOUS  
TURNER MODEL 22X  
CRYSTAL - 22D DYNAMIC**



**HIGH PERFORMANCE! EYE APPEAL!  
MODERATE COST! MODEL 33X-33D  
CRYSTAL OR DYNAMIC**

Tops in value, tops in performance. Accurate pickup and faithful reproduction have made these units the most popular general purpose microphones on the market. Full 90° tilting head for semi- or non-directional operation. Satin chrome finish. 5/8" 27 coupler.

**MODEL 22X CRYSTAL.** High quality humidity protected crystal, mechanical shock-proofed, barometric compensator. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60 to 9000 c.p.s. Complete with 7 ft. removable cable set.

List Price.....\$20.00  
Model S-22X. With slide on-off switch..... List Price \$22.00

**MODEL 22D DYNAMIC.** High quality Alnico magnets in high level dynamic circuit. Level: 54 db below 1 volt/dyne/sq. cm. at high impedance. Response: 70 to 9000 c.p.s. 7 ft. removable cable set. Available in 50, 200, 500 ohms or high impedance.

List Price.....\$25.50  
Model S-22D. With slide on-off switch..... List Price \$27.50

These high fidelity, all purpose units combine high output with smooth response over a wide frequency range. Streamlined case design with full rich satin chrome finish. 90° tilting head.

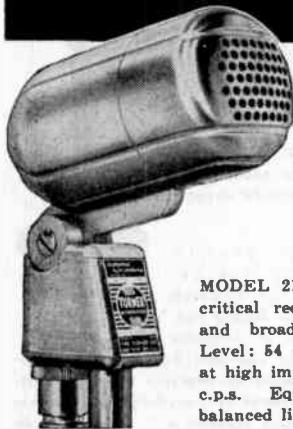
**MODEL 33X CRYSTAL** has high quality 2-element moisture sealed crystal, automatic barometric compensator, and mechanical shock proofing. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-9000 c.p.s. Complete with 20 ft. removable cable set.

List Price.....\$24.50  
Model S-33X. With slide on-off switch..... List Price \$26.50

**MODEL 33D DYNAMIC.** Alnico magnets. Level: 54 db below 1 volt/dyne/ sq. cm. at high impedance. Response: 60-9000 c.p.s. Complete with 20 ft. removable cable set. High impedance wired single ended (single conductor shielded cable). 50, 200 or 500 ohms wired for balanced line (two conductor shielded cable).

List Price.....\$27.00  
Model S-33D. With slide on-off switch..... List Price \$29.00

**BROADCAST QUALITY DYNAMIC**

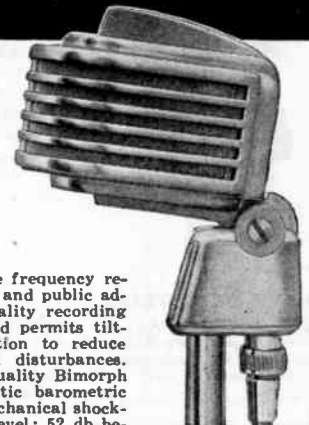


**MODEL 211.** Precision engineered for critical recording, P.A., sound system and broadcast work, including FM. Level: 54 db below 1 volt/dyne/sq. cm. at high impedance. Response: 30-10,000 c.p.s. Equipped with tilting head, balanced line output connection, and 20 ft. 2-conductor, heavy duty removable

cable set. Satin chrome finish. 50 ohms, 200 ohms, 500 ohms or high impedance.  
Model 211.....List Price \$47.50

**MODEL 34X CRYSTAL MICROPHONE**

*Attractive, high fidelity, semi-directional crystal unit*



Exceptionally smooth wide range frequency response. Recommended for studio and public address installations as well as quality recording work. Ninety degree tilting head permits tilting to most advantageous position to reduce audience noise and background disturbances. The Model 34X utilizes a high quality Bimorph moisture sealed crystal, automatic barometric compensator, and is blast and mechanical shock-proofed. Satin chrome finish. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-10,000 c.p.s. Complete with 20 ft. removable cable set.

List Price.....\$29.00  
Model S-34X. With slide on-off switch..... List Price \$31.00

**THE TURNER COMPANY, CEDAR RAPIDS, IOWA**

## BEAUTIFUL NEW MODELS 25X AND 25D CRYSTAL AND DYNAMIC

A new leader in beauty and performance for all sound installations, call systems, recording, amateur communications, etc., indoors or out. Striking, modern case finished in rich two-toneumber gray with chrome plated grille. Full 90° tilting head for semi or non-directional operation. 5/8" 27 coupler.

### MODEL 25X CRYSTAL

Genuine Bimorph, high quality, moisture sealed crystal, mechanically isolated. Level: 52 db below 1 volt/dyne/sq. cm. Response: 50-9000 c.p.s. Complete with 20 ft. removable cable set.

Model 25X..... List Price \$27.50  
Model S-25X. With slide on-off switch.  
List Price..... \$30.00  
Model P-25X. With push-to-talk button switch..... List Price \$30.00

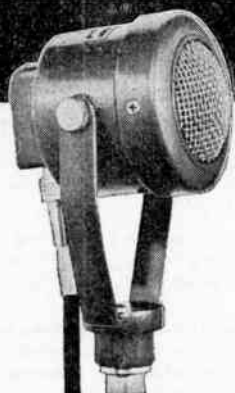
### MODEL 25D DYNAMIC

High flux Alnico V magnets. Level: 54 db below 1 volt/dyne/sq. cm. at high impedance. Response: 50-10,000 c.p.s. Complete with 20 ft. removable cable set. High impedance wired single ended (single conductor shielded cable); 30, 200 or 500 ohms wired for balanced line (two conductor shielded cable.)

Model 25D..... List Price \$40.00  
Model S-25D. With slide on-off switch.  
List Price..... \$42.50  
Model P-25D. With push-to-talk button switch..... List Price \$42.50



## RUGGED TURNER DYNAMIC MICROPHONES



### UNFAILING DEPENDABILITY IN ANY CLIMATE OR TEMPERATURE... FAMOUS TURNER MODEL 99

Professional in appearance and performance. Smooth response not affected by heat, cold or humidity. Has adjustable saddle, 5/8" 27 mounting. Semi or non-directional operation. For announcing and mobile public address systems, paging systems, communications, recording ma-

chines, etc. Gunmetal metalustre finish. Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 60-9000 c.p.s. 20 ft. removable single conductor shielded cable set. 50, 200, 500 ohms or high impedance.

Model 99..... List Price \$34.00

### MODEL U9S MULTI-IMPEDANCE DYNAMIC

#### Four Impedances at your finger tips

50, 200, 500 ohms or high impedance—get it quickly with the turn of the switch on the Turner U9S Dynamic. Same precision engineering and rugged construction as the Model 999 with built-in tapped multi-impedance transformer and switch. Dependable at all impedances and frequencies. Gunmetal metalustre finish. Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 60-9000 c.p.s. Complete with 20 ft. balanced line removable cable set.

Model U9S..... List Price \$40.00

### MODEL 999 BALANCED LINE DYNAMIC

#### For studio results under critical conditions

Same professional appearance as Model 99. Voice coil and transformer leads are insulated from ground and microphone case. Line is balanced to ground. Gunmetal metalustre finish. Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 60-9000 c.p.s. With 3 pin polarized locking connector and 20 ft. balanced line low capacity cable. 50, 200, 500 ohms or high impedance.

Model 999..... List Price \$37.50

## TURNER *Challengers*



### Inexpensive, practical microphones for general sound work

Priced within the range of every user, Turner Challenger Microphones offer performance, quality and appearance usually found in microphones listing at twice their low cost. Available with a choice of crystal or dynamic elements, they retain many of the high quality features of Turner construction. You can rely on Turner Challengers—they are fully guaranteed.

### MODEL VT-73



#### Crystal desk microphone engineered for quality speech

Highest quality humidity sealed, genuine Bimorph crystal. Rising curvature of response between 500-4000 c.p.s. increases intelligibility at effective voice frequencies without over-modulation. Head is adjustable through 60°. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-7000 c.p.s. Complete with ball swivel head, stand and 7 ft. attached cable. Finished in black wrinkle and chrome.

Model VA-73..... List Price \$21.50

### MODEL BX CRYSTAL

For recording, P.A., and amateur work. Brown Metalustre finish. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-6000 c.p.s. Complete with 7 ft. attached cable.

Model BX..... List Price \$10.85

### MODEL BD DYNAMIC

Same appearance and finish as BX. Equipped with dynamic cartridge. Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 100-6000 c.p.s. Complete with 7 ft. attached cable. 50, 200, 500 ohms or high impedance.

M BD..... List Price \$15.75

### MODEL CX CRYSTAL

Satin chrome finish. 7 ft. removable cable set. Standard 5/8" 27 mounting. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-7000 c.p.s.

Model CX..... List Price \$16.25

### MODEL CD DYNAMIC

Same style and finish as CX. High quality magnets. 7 ft. removable cable set. Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 100-7000 c.p.s. 50, 200, 500 ohms or high impedance.

Model CD..... List Price \$19.50



# TURN TO *Microphones* BY TURNER for "sound performance"



## Turner MODEL 87

**Velocity Microphone High Fidelity . . . Bi-Directional Multi-Impedance**

A new unit, engineered with single element ribbon supported in the field of an Alnico V magnet for maximum sensitivity. Thorough shielding excludes hum pick-up. The Model 87 has a bi-directional pick-up pattern with exceptionally smooth response from 80-10,000 c.p.s. Level: 62 db below 1 volt/dyne/sq. cm. at

high impedance. Built-in impedance switch gives selection of 50, 200, 500 ohms or high impedance output. Universal swivel mounting,  $\frac{5}{8}$ " 27 thread. Finished in dark umber gray with bright chromium screen. Complete with 20 ft. two conductor balanced line shielded cable.

Model 87

List Price \$47.50



## MODEL 77 . . . THE TURNER "TRU-CARDIOID"

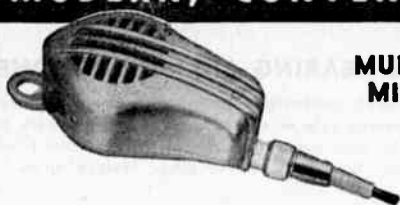
The Turner "Tru-Cardioid" is a super-cardioid type microphone employing a combination of dynamic and velocity generators. "Tru-Cardioid" pickup pattern practically eliminates feedback, audience and background noise. Has wide range pickup at front and a sharply attenuated output at rear with approximately 15 db discrimination between front and rear at all frequencies. Response: 70-10,000 c.p.s. Level: 62 db below 1 volt/dyne/sq. cm.

at high impedance. Built-in impedance selector switch gives choice of 50, 200, 500 ohms or high impedance output. 90 degree tilting head,  $\frac{5}{8}$ " 27 mounting. Finished in dark umber gray with polished chromium screen. Complete with 20 ft. removable two conductor shielded cable set.

Model 77

List Price \$77.00

## MODERN, CONVENIENT HAND HELD MICROPHONES



### THE TURNER "HAN-D" CRYSTAL OR DYNAMIC

One of the handiest and most useful microphones made. Hang it, hold it, or mount on any standard floor or desk stand. Standard  $\frac{5}{8}$ " 27 thread mounting. Balanced to fit the hand naturally. Ideal for stage, paging, public address, amateur, mobile and traveling mike broadcasting. Satin chrome finish. Positive contact slide switch permits on-off operation.\*

### MULTI-PURPOSE MICROPHONE

**MODEL 9X CRYSTAL.** High quality, shock mounted, humidity protected crystal. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-7000 c.p.s. Complete with removable 7 ft. single conductor shielded cable set.

List Price.....\$23.50

**MODEL 9D DYNAMIC.** Level: 52 db below 1 volt/dyne/sq. cm. at high impedance. Response: 100-7000 c.p.s. Complete with removable 7 ft. single conductor shielded cable set. 50, 200, 500 ohms or high impedance.

List Price.....\$27.00

\*Also available with heavy duty non-locking push-to-talk switch at same price. Specify: "With H.D. push-talk sw."



### The Popular Low Cost Model 20X Crystal

A light-weight, convenient, hand-held microphone with high output and unusually fine response characteristics. Equipped with hook ring for hanging. Finished in bronze metalastre. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-7000 c.p.s. 7 ft. attached single conductor shielded cable.

List Price.....\$12.85

Model S-20X. With slide on-off switch.

List Price.....\$14.85

Model SR-20X. With push button relay switch and 6 ft. 3 conductor cable, one conductor shielded.

List Price.....\$17.85

## MODEL 35X CRYSTAL

**The turner "Fireball"  
combination desk or hand  
microphone**

The "Fireball" can be used either as a hand microphone or as a desk unit. A quarter turn releases handle from base or locks it securely. Complete with metal handle, base and 7 ft. attached cable. Brown wrinkle finish. High quality crystal. Level: 52 db below 1 volt/dyne/sq. cm. Response: 60-7000 c.p.s. List Price.....\$13.25



## MODELS 15D and 15D-NC HAND-HELD DYNAMICS

**MODEL 15D.** Heavy duty functionally designed case finished in gray gun metal. Hook for hanging when not in use. Equipped with attached 20 ft. two conductor shielded balanced line cable. Level: 54 db below 1 volt/dyne/sq. cm. at high impedance. Response: 100-7000 c.p.s. Available in 50, 200, 500 ohms or high impedance. List Price.....\$30.00

100-7000 c.p.s. Available in 50, 200, 500 ohms or high impedance. List Price.....\$30.00

Model P-15D. With push-to-talk button switch. List Price.....\$32.50

**MODEL 15D-NC.** Noise cancelling. Designed for intelligible communications under adverse background noise conditions. Unwanted sound cancelled out. Same case and finish as 15D. Level: 54 db below 1 volt/dyne/sq. cm. at high impedance. Response: 100-5000 c.p.s. Available in 50, 200, 500 ohms or high impedance. Complete with attached 20 ft. two conductor shielded balanced line cable. List Price.....\$32.50

Model P-15D-NC. With push-to-talk button switch. List Price.....\$35.00

# TURN TO *Microphones* BY TURNER for "sound performance"



## L40 LAPEL MICROPHONE

Small, lightweight, and inconspicuous, the L40 can be worn in the lapel, used with the 3H, or concealed. Highest quality Bimorph, moisture sealed crystal produces high signal level. Engineered for crisp, clear speech reproduction. Chest sounds damped out. Alligator clip. Satin chrome finish. Level: 52 db below 1 volt/dyne/sq. cm. Response: 50-8000 c.p.s. With 20 ft. attached cable. List Price.....\$25.00

### WITH THIRD HAND—L40-3H

Slips over neck in a jiffy. Ideal for mobile sound work and call systems where operator needs both hands free. Indispensable for demonstrators.

List Price.....\$30.00

## MAGNETIC CONTACT PICKUPS FOR MUSICAL INSTRUMENTS

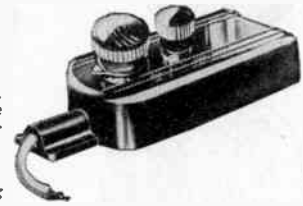
MODEL MM. Standard Turner pickup. ALNICO V circuit provides uniform response over entire musical range. Gives pleasing reproduction of any string instrument. High impedance output. Installed in a few seconds. Finished in gray gunmetal. Complete with 20 ft. single conductor cable and mounting device.

Model MM/VC. With volume control.....List Price \$18.00

Model MM. Without volume control.....List Price \$15.75

DELUXE MODEL MIP (not illustrated). Immense volume and improved tone. ALNICO V magnet and improved coil design in a variable reluctance circuit. Polished chromium finish. Complete with volume control, 20 ft. cable and mounting device.

Model MIP.....List Price \$23.50



## MICROPHONE ACCESSORIES

### TURNER DESK STANDS

MODEL T6. A perfect match for the Turner Models 99, 999, and U9S dynamics. Gunmetal metalustre finish. Hammered effect metal base, 5 1/4" diameter. Weighs 2 1/4 pounds. Height: 6 3/8". 3/8" 27 thread. List Price.....\$4.25

MODEL TB2. Base finished in black wrinkle, upright in telephone black. Chrome trim. 6 1/2" high. Base 4 3/4" diameter. Weighs one pound. 3/8" 27 thread. Easy to hold. Four rubber feet. List Price.....\$2.70

ECONOMY DESK STANDS. These stands measure and weigh the same as the TB2. Rubber feet.

MODEL P1: Finished completely in handsome gunmetal metalustre.....List Price \$1.90

MODEL B1: Finished completely in rich brown metalustre.....List Price \$1.90

MODEL C1: Finished completely in beautiful satin chrome.....List Price \$2.45

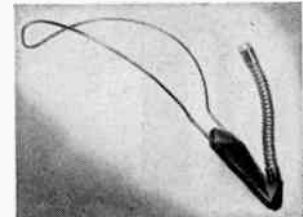
### COMBINATION DESK STAND

MODEL G1: Twist of handle releases for use in hand or locks it securely in base. Light umber gray finish. Metal base and handle. Handle threaded 3/8" 27. Height overall 5 1/2". Base diameter 5". Weighs one pound. List Price \$2.75

### MODEL 3H TURNER "THIRD HAND"

Slips over your head in a jiffy and holds microphone close to your mouth, where you get excellent volume without feedback. Natural to wear. Stays out of your line of vision. Has 6 3/4" flexible gooseneck; 3/8" 27 thread. Black enamel finish. Recommended for use with Turner microphones as they will not blast from close speaking.

Model 3H.....List Price \$5.00



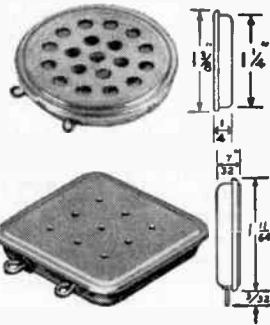
## TURNER HEARING AID MICROPHONES

Small, compact, lightweight crystal microphone cartridges for new hearing aids or replacement. Equipped with tinned leads for easy connection. Level: 50 db below 1 volt/dyne/sq. cm. Response: 40-9000 c.p.s. Weight 1/2 oz.

MODEL HA-12  
(Round type): 1 3/8" dia. x 1/4".  
List Price \$8.00

MODEL HA-29  
(Square type): 1 11/64" sq. x 7/32".  
List Price.....\$8.00

Write for complete details



## GUARANTEED

All Turner Microphones are individually and thoroughly tested before leaving the factory and are guaranteed against defective materials and workmanship for one year, providing that instructions are fully complied with and that units are not opened or tampered with in any way. Guarantee Registration Card accompanying each microphone should be filled out and mailed (postage free) immediately.

THE TURNER COMPANY, CEDAR RAPIDS, IOWA

The TURNER Company



## TILTING HEADS

Turner microphone Models 22X, 22D, 25X, 25D, 33X, 33D, 34X, 211, and 77 are all equipped with 90° tilting heads.

(illustrate with line drawings)



Crystals licensed under patents of the Brush Development Company

PREFERRED BY LEADING P. A. MEN THE WORLD OVER



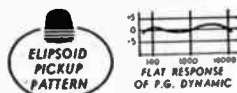
•UNI-DIRECTIONAL

NEW SUPERIOR ELIPSOID PICKUP PATTERN

•ELIMINATES FEEDBACK

TROUBLE BECAUSE IT HAS LOWEST FEED BACK POINT OF ALL DIAPHRAGM TYPE MICROPHONES

•FLAT RESPONSE. FREE FROM ANNOYING PEAKS, GIVING STUDIO QUALITY REPRODUCTION



The P.G. diaphragm follows air particle velocity where amplitude is a GRADIENT of the PRESSURE. In ordinary dynamics amplitude is restricted from following air particle velocity. The P.G. DYNAMIC is a radical improvement in this type of microphone. You can actually hear the difference. Case is designed according to modern acoustic principles. Rugged, not affected by temperature, altitude or humidity. Has unusually high output.

Model PGH —hi-imp. } \$32.00  
 Model PGL —50 ohms } List

Output .....—55 db  
 Freq. Resp. ....40-10000 CPS  
 Cable Length .....25 ft.  
 Finish .....Chrome  
 Switch .....Yes  
 Cable Connector .....Yes  
 Stand Thread ..... $\frac{5}{8}$ -27  
 Ship. Wt. ....2½ lbs.



**PLASTIC BAFFLE FOR P.G. DYNAMIC**  
 Increases output of the microphone 4 db. Especially useful when performer is at distance of 12" or more. Excellent for picking up entire stage, bands, etc. Snaps into place.  
 Model PG..... List \$1.50

Model PGAH —hi-imp. } \$25.00  
 Model PGAL —50 ohms } List

Output .....—60 db  
 Freq. Resp. ....70-8000 CPS  
 Cable Length .....12 ft.  
 Finish .....Chrome  
 Switch .....Yes  
 Cable Connector .....Yes  
 Stand Thread ..... $\frac{5}{8}$ -27  
 Ship. Wt. ....2½ lbs.

AMPERITE MICROPHONE STANDS

Scientifically designed, Amperite stands feature:

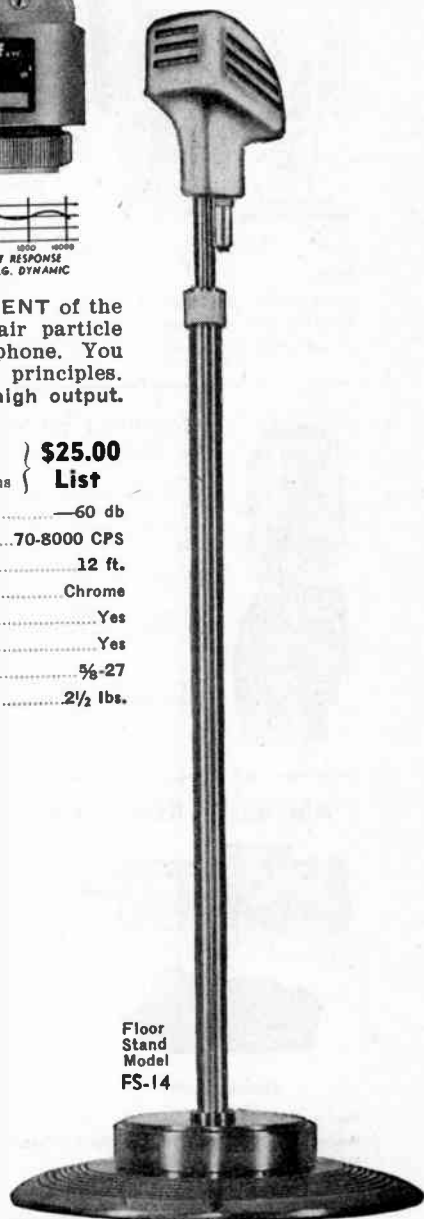
1. Positive, non-sliding clutch. Will never wear out, never require adjustment. Will not "creep".
2. Shock-absorbing rubber bottom.

The microphone can be rotated without loosening clutch. The action up and down is smooth, pneumatic-like.

AMPERITE MICROPHONE STANDS—SPECIFICATIONS

Model	Description	Base Wt.	Base Spread	Height Range	Thread	List Gunmetal or Chrome	Ship. Wt.
FS-14	Floor Stand	14 lb.	12"	37"-55"	$\frac{1}{2}$ -27"	\$18.00	15 lb.
DS-M	Comb. desk & Banquet	6 lb.	7½"	16"-24"	$\frac{5}{8}$ -27"	12.00	11 lb.
DS	Desk only	6 lb.	7½"	3"	$\frac{5}{8}$ -27" & $\frac{1}{2}$ " P.	6.00	11 lb.

Floor Stand Model FS-14



PREFERRED BY LEADING P. A. MEN THE WORLD OVER



**New STUDIO "Ribbon" MICROPHONE**

Models R80H—R80L

A "Blastproof" Velocity  
Eliminates Feedback Troubles



The finest in microphones, regardless of price. Reproduction is of the very highest type. Excellent for broadcasting, recording and public address. Eliminates feedback troubles. Will not become "boomy" on close talking. An entire orchestra can be faithfully reproduced.

Pick-up angle 120° front and back with practically no frequency discrimination. In spite of the wide pick-up angle, feedback is reduced to a minimum.

Not affected by temperature, altitude or humidity. Will operate under any climatic conditions—indoors or outdoors. Not affected by wind.

Frequency range 40-14,000 cps. Output—56 db. Complete with switch, (optional), cable connector and 25' cable.

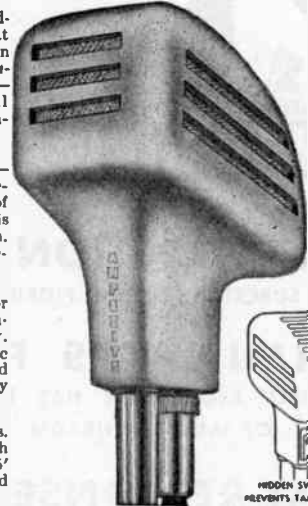
Finish—Chrome. Stand thread, Standard 1/8"—27.  
 Model R80L—200 ohms output ..... List \$80.00  
 R80H—High impedance ..... 80.00  
 50 ohms available. Shipping Weight 10 lbs.



HIDDEN SWITCH PREVENTS TAMPERING

**New "RIBBON" MICROPHONE, RBHG—RBLG**

Automatically Adjusted for Close or Distant Pick-Up  
A "Blastproof" Velocity



Studio reproduction—low feedback. A "ribbon" microphone that brings broadcast quality within everyone's reach. Perfectly natural reproduction on close talking—you can even shout into it. Will also faithfully reproduce an entire orchestra.

Pick up angle front and back—120° with practically no frequency discrimination. In spite of wide pick-up angle—feedback is reduced to an absolute minimum. Low feedback is due to flat response of the microphone.

Excellent for studio—P. A. or recording. Not affected by temperature, altitude or humidity. Can be used under all climatic conditions, and will withstand rough handling. Not affected by wind.

Frequency range 50-11,000 cps. Output—62 db. Complete with switch, cable connector, and 25' cable. Finish—Chrome. Stand thread—Standard 1/8"—27.

Model RBHG—High impedance ..... List \$42.00  
 Model RBLG—200 ohms output ..... 42.00  
 50 ohms available. Shipping Weight 8 lbs.



HIDDEN SWITCH PREVENTS TAMPERING

**COMPACT VELOCITY, ACH—ACL**

The smallest complete velocity ever made

Compact—yet a complete Amperite "Ribbon" Microphone including transformer, switch and cable connector. Recommended wherever a compact microphone is a necessity. Can be used either as a hand microphone or on a stand. Frequency range 120 to 8,000 cps. Output—65 db.

Complete with switch—cable connector—12' cable. Stand thread—Standard 1/8"—27.

Model ACH—High impedance ..... List \$32.00  
 Model ACL—200 ohms output ..... 32.00  
 50 ohms available  
 Shipping Weight 5 lbs.



**New RSHG—RSLG "RIBBON" MICROPHONES**

Although low in price the RSHG and RSLG are excellent "ribbon" microphones built to Amperite standards. Can be used for P.A. or recording. Feedback very low. Not boomy on close talking—you can shout into it—or pick up an entire orchestra.

Not affected by temperature, humidity or altitude. Not affected by wind.

Output:—60 db. Frequency response—70 to 8,000 cps. Complete with switch, cable connector, and 12' cable. Finish—Baked Enamel. Stand thread—Standard 1/8"—27.

Model RSHG—High impedance ..... List \$32.00  
 Model RSLG—200 ohms output ..... 32.00  
 50 ohms available. Shipping Weight 8 lbs.



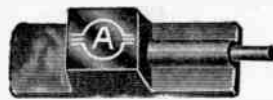
**Amperite 7JH—7JL VELOCITY MICROPHONE "Lapel" Type**

Reproduction is so perfect—you can hardly tell a microphone is working. Free from annoying peaks or mechanical reproduction. Output does not change with any position of the head. It can be concealed in clothing. Will operate under all climatic conditions. Unusually low feedback. Frequency range 60-7,000 cps. Output:—63 db. Cable length 25'. Rubber case.

Model 7JH—High impedance ..... List \$32.00  
 Model 7JL—200 ohms output ..... List 32.00  
 50 ohms available. Shipping Weight 8 lbs.



**AMPERITE KONTAK MIKE FOR MUSICAL INSTRUMENTS**



(Model SKH)

Gives natural reinforcement without peaks. Easily attached without tools. Will operate with either low or high-gain amplifiers. Frequency response 40 to 9000 cps. Output, —40 db.

Shipping Weight 2 lbs.



(Model KKH)

Model SKH—Hi-impedance ..... List \$12.00  
 Model KKH—With Hand Volume Control ..... List 18.00  
 Model KF—Foot Pedal Only ..... List 18.00  
 Low impedance available in model SKH at same price.

**Model LGP—Input Transformer (Cable Type)**

Enables the use of low impedance microphones and cable lengths up to 5,000' with amplifiers having high impedance input. Special shielding eliminates hum pick-up. Can be used with 25, 50, or 200 ohm microphones. Output connects directly into high impedance input of amplifier.

Standard grade recommended for speech. Laboratory grade for music.  
 Model LGP—Standard—60 to 2,000 cps. .... List \$8.00  
 Model LGP—Lab—40 to 14,000 cps. .... List 10.00  
 Shipping Weight 3 lbs.



## Microphones and Accessories

# ALTEC

LANSING CORPORATION

1161 N. Vine Street  
Hollywood 38, Calif.

161 Sixth Avenue  
New York 13, N.Y.

### 21B MICROPHONE

The 21B Microphone provides a new standard for frequency response and dynamic range in quality microphones. The 21B is a condenser microphone and, in addition to its miniature size and superb quality, is omnidirectional, shock proof, blast proof, and free from angular discrimination. Frequency response: 20 through 15,000 cps. Output level: -48 db re 1 milliwatt for a sound field of 10 dynes/cm<sup>2</sup>.

#### 21B & 150A BASE

The 21B is used on the 150A Base as a stand, suspension, or hand microphone. Small size makes it ideal for stage, TV, and motion pictures.

Customer net price: \$95.00

### CABLES

#### 152A CABLE SET

This cable set is designed for stand mounting of the 21B and 150A Base. It is equipped with 8 pin Cannon connectors. Connector at 150A Base has  $\frac{1}{8}$ "-27 thread. Length with connectors: 25 ft.

Customer net price: \$25.00

#### 153A CABLE SET

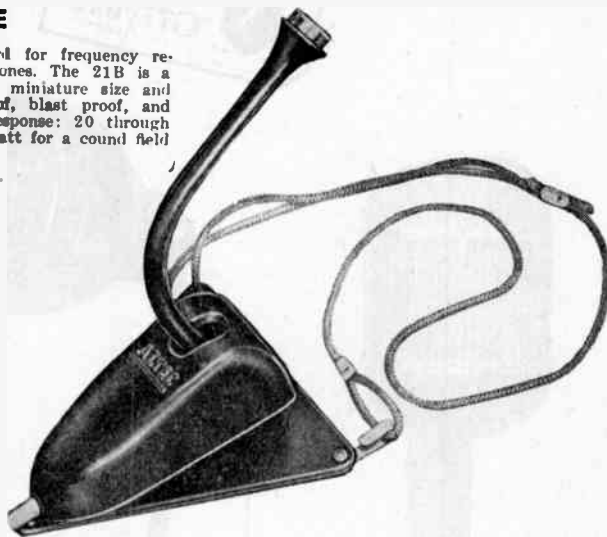
This cable set is designed for suspension mounting or hand use of the 21B and 150A Base. It may also be used as an extension cable. Length with connectors: 25 ft.

Customer net price: \$25.00

#### 161A CABLE SET

This cable set provides a desk stand for the 21B and 150A Base. Desk stand finished in black. H-1  $\frac{1}{8}$ "; Dia. 5"; Length 25 ft.

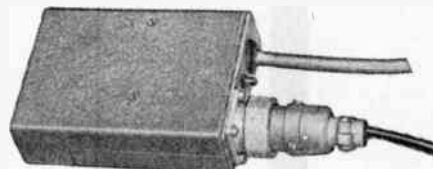
Customer net price: \$25.00



#### 21B & 155A CHESTPLATE

The 21B on the 155A Chestplate is the ideal instrument for the active lecturer or announcer. It hangs around the neck and places the microphone near the lips, leaving hands free. 25 feet of cable is permanently attached to the 155A Chestplate.

Customer net price: \$120.00



**154A MATCHING UNIT** This unit is used in conjunction with the 28A Lapel Microphone. Same size as a pack of cigarettes. May be carried in pocket. Permanently equipped with 25 ft. of cable.  
Customer net price: \$40.00

**28A** The 28A Lapel Microphone incorporates the 21B and is used exclusively with the 154A Matching Unit. Its small size makes it practically invisible when clipped to the clothing of the user. It is permanently equipped with 6 ft. of cable.  
Customer net price: \$80.00



**P-518A** — Dimensions: 7  $\frac{1}{2}$ " x 8  $\frac{1}{4}$ " x 6" Customer net price: \$70.00

### POWER SUPPLIES

The P-518A and P-519A Power Supplies provide the necessary voltages for the 21B or 28A microphones and the impedance matching tube in the 150A Base, 155A Chestplate, and the 154A Matching Unit. These power supplies are necessary to operate the microphones into amplifiers not specifically designed to receive them. They will accommodate one microphone. The P-518A is a portable unit. The P-519 is rack mounted. These power supplies are not needed with amplifiers designed for the microphones and their impedance matching units.

Output impedance: 80, 250, 500 ohms. Power requirements: 117 V, 60 cycles A.C.



**P-519A**—Dimensions: 3  $\frac{1}{2}$ " x 19" x 6  $\frac{1}{8}$ " Customer net price: \$70.00



# Microphones

# ALTEC

LANSING CORPORATION

1161 N. Vine Street  
Hollywood 38, Calif.  
161 Sixth Avenue  
New York 13, N.Y.



Formerly manufactured by Western Electric Co., Inc.



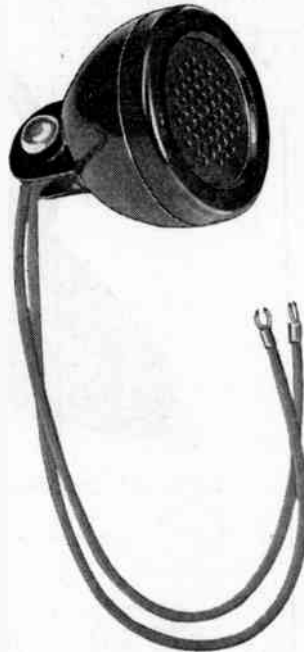
## Cardioid Microphone

639A and 639B

Ideal for broadcast or public address, these cardioid microphones with ribbon and dynamic elements provide the best possible pick-up under varying, difficult conditions. High quality three-way (639A) and six-way (639B) directivity patterns are quickly selected by turning a screw. Each embodies a dynamic moving coil type pressure element. Impedance from 25 to 50 ohms. Power output level: —76 dbm. Frequency response: 40-10,000 cps.

### List Price:

639A ..... \$140.20  
639B ..... \$160.75



## Dynamic Microphone

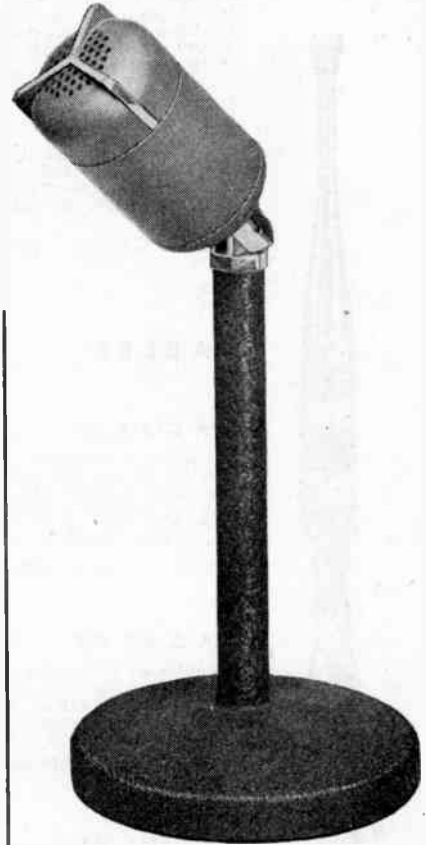
632A

An exceptional, close-talking microphone for announcing and public address systems. Rugged, quiet-operating, unaffected by temperature, humidity or breath condensation. Frequency response: 150 to 5000 cps.

Impedance: 25-50 ohms.

Power output level: —80 db.

List Price: \$84.10



## Dynamic Microphone

633A

This rugged, dependable high-quality microphone for public address, sound distribution system, or broadcasting, affords both non-directional and semi-directional performance. Frequency response: 40-15,000 cps.

Impedance 25-50 ohms.

Power output level: —79 dbm.

List Price: \$74.85

# Brush

# CRYSTAL PRODUCTS



**BRUSH MODEL BA-109 MICROPHONE**

The Brush Model BA-109 is a beautiful new microphone of exceptionally flat frequency response characteristics created for public address, home recording, and amateur applications. The microphone is attractively styled in rich maroon plastic and brushed chrome in compliance with the post-war trend in industrial styling.

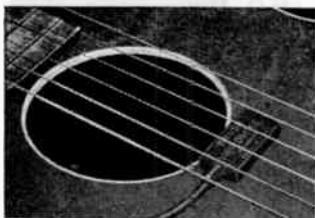
The microphone cartridge represents a further improvement of the "Acoustical" pioneered by The Brush Development Company and extensively used for applications which demand natural reproduction of both music and voice frequencies. The improved "Acoustical" uses "Metalseal" crystal for long life and protection from conditions of high humidity. Shock mounting of the "Acoustical" assures freedom from microphone stand and other mechanical noises.

The BA-109 microphone provides essentially flat frequency response from 40 to 10,000 cps. with an unusually high output of 54 db. below 1 volt/dyne/cm<sup>2</sup>. The pickup pattern is non-directional in the horizontal plane and the microphone is unexcelled for natural reproduction of both orchestra and vocalist.

The microphone is designed for use with standard 5/8" 27 thread microphone stand.

List Price . . . . . \$22.50  
 \*Trade Mark Net Wt. 5 1/2 oz. Shipping Wt. 1 lb.

**BRUSH MODEL "VM-1" "VIBROMIKE"**



The VM-1 or "Vibromike" is a miniature CONTACT-TYPE microphone with high sensitivity and unusually wide-range frequency response (30 to 6,000 cps.). Output voltage from .05 to .1 volt or higher. Size of microphone 7/8" x 3/4" x 5/8".

Designed for a broad field of reproduction adaptable to musical instruments, industrial uses—detecting mechanical vibrations. Hermetically sealed in black rubber covered case.

Microphone complete with mounting clamp and 25' of cable.  
 List Price . . . . . \$19.50  
 Net Wt. 6 oz. Shipping Wt. 2 lbs.

**BRUSH MODEL "BL-2" LAPEL MICROPHONE**



The improved Model BL-2 lapel microphone features virtually flat response. Output level—57 db. (based on 1 volt per bar reference level). Small and rugged (1 1/2" x 2 1/4") the BL-2 can be used in hand or as instrument pickup as well as in local.

Microphone complete with 25' of cable.  
 List Price . . . . . \$25.00  
 Net Wt. 8 oz. Shpg. Wt. 2 lbs.

**BRUSH MODEL BA-106 MICROPHONE**

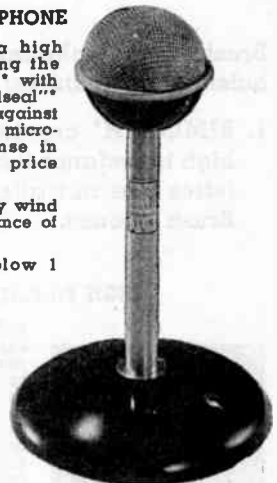
The Brush Model BA-106 is a high quality microphone incorporating the hermetically sealed "Acoustical" with Sintered bronze damping. "Metalseal" crystal is used for protection against conditions of high humidity. This microphone offers unexcelled response in microphones of this type and price range.

Vibration, shock or low frequency wind noise do not affect the performance of this microphone.

Output level Minus 50 db. below 1 volt/bar.

Flat from 40 to 6,000 cps. Unexcelled for home recording, public address systems, ham shacks, monitoring and institutional and industrial applications.

Net Wt. 1 1/4 lb.  
 Shipping Wt. 3 1/4 lbs.  
 List Price . . . . . \$19.75



**BRUSH MODEL BA-116 MICROPHONE**



The Brush Model BA-116 microphone features rugged dependability and uniform frequency response. Because of its quality features, this microphone is unexcelled in its price range for home recording, amateur, public address, institutional and industrial paging applications.

The microphone cartridge is shock mounted for protection against microphone stand and other mechanical noises. The cartridge is the improved protected metal diaphragm type with "Metalseal" crystal for long life and protect on from conditions of high humidity. Output level 53 db. below 1 volt per bar. Uniform response from 50 to 6,000 cps.

This microphone is designed for comfortable use as a hand microphone or for use on the desk without the need of a stand. A standard 5/8" 27 thread is incorporated for floor stand use.

The BA-116 is supplied in brown hammered metallic finish and equipped with an 8' cable.

List Price . . . . . \$14.75  
 Net Wt. 1 lb. 4 oz. Shipping Wt. 1 lb. 8 oz.

**PRICES SUBJECT TO CHANGE WITHOUT NOTICE**

Complete technical data on request  
 \*Trade Mark Reg. U. S. Pat. Off.

**THE BRUSH DEVELOPMENT CO.**

# Brush

# CRYSTAL PRODUCTS

Brush crystal phones possess the following outstanding features:

1. **BIMORPH\*** crystal drive element of such high impedance that line or circuit characteristics are not affected when monitored by Brush phones.

2. Wider range response with more uniform output.

3. Compensation for ear coupling.

4. Light-weight, rugged, shock-proof construction.

### HIGH FIDELITY MODEL "A-1"



For use where HIGH FIDELITY and extended frequency response are of paramount importance. (60 to 10,000 cps. Corrected for rising response below 200 cps.) Especially suited to monitoring, sound measurement, audiometry, and similar exacting headphone applications. Sensitivity approx. 1.5 bars per volt at 1,000 cps. Impedance over 80,000 ohms at any frequency within audio range.

Headset complete with 5' cord and headband.

List Price . . . . . \$18.00  
Net Wt. 6 oz. Shipping Wt. 2 lbs.

### BRUSH MODEL "A" LORNETTE PHONE



The "A" lorgnette phone is designed for use in group hearing aid sound systems installed in churches, concert halls, theatres and auditoriums. Telescope extension from 12" to 17". Attractively finished in satin black. Light weight, easy to handle, and comfortable at the ear.

Single phone complete with 5' cord and lorgnette handle.

List Price . . . . . \$9.75  
Net Wt. 5 oz. Shipping Wt. 1 lb.

### MODEL "BA-303" HUSHATONE\*



A miniature, molded plastic extension speaker for under pillow use. Disc shaped ( $4\frac{3}{16}$ " dia. by  $1\frac{1}{16}$ " thick). Makes no uncomfortable lump beneath the pillow. Tone quality comparable to cone type speaker because of specially engineered response. Speaker gives ample output with low power consumption (.0025 watt). Hermetically sealed, can be dipped into disinfecting solution (temperature not above 120°F). Light weight BIMORPH\* crystal drive element insures uniform response and high sensitivity. No parts to wear, loosen, or become detached. Furnished in maroon with satin chrome trim.

HUSHATONE\* with 10' cord.

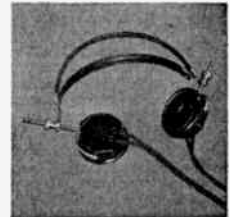
Fair Trade Retail Price . . . \$9.75  
Net. Wt. 8 oz. Shipping Wt. 2 lbs.

### BRUSH MODEL "A" GENERAL PURPOSE

Designed for GENERAL PURPOSE applications including laboratory, studio and skilled amateur home use. The BIMORPH\* crystal drive element insures wide range response (100 to 8,000 cps.) and high sensitivity. High impedance; ideal for multiple installations.

Headset complete with 5' cord and adjustable headband.

List Price . . . . . \$12.00  
Net Wt. 6 oz. Shipping Wt. 2 lbs.



### BRUSH MODEL "A" SINGLE PHONE

Particularly adapted to individual or group hearing aid and radio applications. Light weight, good ear seal, and comfortable to wear. Spring steel headband with soft rubber cushion to eliminate slipping.

Single phone complete with 5' cord and headband.

List Price . . . . . \$6.45  
Net Wt. 3 oz. Shipping Wt. 1 lb.



### BRUSH MODEL "RC-20" CRYSTAL CUTTER

The Brush RC-20 Crystal Cutter has been designed to satisfy the demand for high quality, low cost recordings in the home, school and studio. Due to its inherent stiffness, the RC-20 will cut lateral type records in virtually all hard or soft disc materials. Being of simple and compact design, it is readily adaptable to all types of transcription equipment. A three watt amplifier is sufficient to satisfactorily drive the RC-20 cutter frequency response—flat within plus or minus 3 db. from 50 to 9,000 cps.

Cuts "Constant Amplitude" without equalization, and "Constant Velocity" or other desired frequency characteristics with suitable equalization. Complete technical data sent on request. Cutter (less stylus).

List Price . . . . . \$25.00  
Net Wt. 4 oz. Shipping Wt. 2 lbs.



PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Complete technical data on request

\*Trade Mark Reg. U. S. Pat. Off.

## THE BRUSH DEVELOPMENT CO.

# — TRIMM —

## HEADSETS AND ACCESSORIES

### FEATHERWEIGHT



The world-famous TRIMM FEATHERWEIGHT headset. Weight: 4½ oz. complete with two units, 5-ft moisture-proof cord. Bakelite shell and cap. A custom-built phone throughout. Available in all standard ohmage.

24,000-OHM IMP. SPECIAL for amateurs

- No. 106—Double, adjustable nickel-plated headband.....\$10.00
  - No. 107—Double, fabric-covered wire headband..... 10.00
- STANDARD FEATHERWEIGHT HEADSETS are available in 10, 60, 156, 440, 600, 1,000, 2,000, 3,400, 4,000 and 5,000 ohms d.c. resistance (Impedance approximately 5 times greater)
- No. 100—Double, adjustable nickel-plated headband.....\$10.00
  - No. 104—Double, fabric-covered wire headband..... 10.00

### DEPENDABLE



When a high grade headset is desired, but price must be considered, choose the DEPENDABLE. Bakelite caps and shells. Extra heavy chrome steel forged magnets, 5-ft. cord, vinyl plastic covered wire headband.

- No. 65—Double, 2M ohms.....\$4.35
- No. 67—Single, 1M ohms..... 2.35

### GROUP HEARING AID COMPONENTS

#### FEATHERWEIGHT EARPHONES



The most widely used single earphones for group hearing aid systems in churches, theatres, mortuaries, etc., are of the FEATHERWEIGHT type. Available with either lorgnette handles, or single headbands. Standard ohmage: 76, 1,000 and 2,000 ohms d.c. Low (less than 100-ohm), medium (100-500-ohm), and high (500 ohms and over lines respectively).



- No. 110—Headband type.....\$6.50
- No. 115—Headband type plus vol. cont. in cord.....11.00
- No. 120—Lorgnette type..... 7.50
- No. 125—Lorgnette type plus vol. cont. in cord.....12.00

#### OUTLET BOXES AND CONTROLS



Boxes 460 and 461 are recommended for the majority of installations, combines volume control and jack. No. 460 has brown wrinkle finish, No. 461 glossy ivory to improve visibility in theatres. Standard ohmage: 1000 for low impedance lines, 10,000 for high.

- No. 460—Outlet Box (Brown—specify ohmage).....\$4.00
- No. 461—Outlet Box (Ivory—specify ohmage)..... 4.00
- No. 477—Outlet Box, dual jack, brown, same general shape as No. 460..... 3.50
- No. 478—Outlet Box, dual jack, ivory..... 3.50
- No. 484—Outlet Box, single jack, brown..... 3.00
- No. 485—Outlet Box, single jack, ivory..... 3.00
- No. 451—Volume Control inserted into cord..... 4.95

### PROFESSIONAL

The choice of countless users . . . The original TRIMM headset. Watch case bipolar design, cap and shell molded of brown bakelite (unless specified otherwise). Alnico magnet, concealed terminals, 5-ft. tinsel-braided cord. Standard resistance for double headsets: 10, 76, 600, 2,000, 3,000 and 4,000 ohms d.c.



- No. 76—Double (4M ohms furnished if not specified).....\$5.25
- No. 72—Single (2M ohms maximum ohmage)..... 3.00

### REX

A fine low-cost headset of bipolar construction. Shell of polished aluminum, molded plastic cap. Entirely enclosed terminal. Double headsets, 4½-ft. tinsel-braided cord; singles, all-rubber cord.



- No. 30—Double, 2M ohms.....\$3.40
- No. 30—Double, 3M ohms (20M ohms imp.)..... 3.85
- No. 30—Double, 4M ohms..... 4.00
- No. 32—Single, 1M ohms..... 1.95
- No. 32—Single, 2M ohms..... 2.20

### ACME

A superior lightweight, low-cost headset. Cap and shell of molded bakelite. Weight: 6 oz. Cord: 4½-ft.



- No. 24—Double, 2M ohms, vinyl-covered headband.....\$3.25
- No. 24—Double, 4M ohms, vinyl-covered headband..... 3.40
- No. 25—Double, 2M ohms, metal headband..... 2.75
- No. 25—Double, 4M ohms, metal headband..... 3.00
- No. 27—Single, 1M ohms, metal headband..... 1.65
- No. 27—Single, 2M ohms, metal headband..... 1.80

### "511" PLUG



The standard radio phone plug. Tip and sleeve bright nickel. Stay cord anchorage provided. Shielded types have a fiber liner.

- No. 511 —Black plastic shell.....\$0.50
- No. 511-1—Red plastic shell..... .50
- No. 511-2—Shielded, nickel-plated, single-piece shell..... .85
- No. 511-3—Shielded, nickel-plated, two-piece shell..... 1.30
- No. 511-4—Shielded, nickel-plated, stubby shell..... .80
- No. 515 —Adapter (Couples Amphenol type microphone plug to standard phone jack)..... .45

### "512" PLUG

Compact, non-protruding design. Bakelite body, nickel-plated tip and sleeve. Cord pin tips held by set screws.



- No. 512.....\$0.65

### "514" MIN-A-PLUG



Developed especially for shielded microphone cable. Standard tip-sleeve construction. Wing type terminal clamps directly onto cord shield. Center conductor solders to lug.

- No. 514 —Black plastic shell.....\$0.50
- No. 514-1—Red plastic shell..... .50
- No. 514-2—Shielded shell..... .80
- No. 514-3—Shielded, stubby shell..... .75

See other sections of U.C.P. Catalog or TRIMM General Catalog for more complete listings of headsets, plugs, jacks, replacement parts.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

# TRIMM

## HEADSETS AND ACCESSORIES

### COMMERCIAL



One of the most ruggedly built yet lightweight headset sets. Practically non-breakable. Shell and cap molded of high strength plastic. Diameter 2 1/4", depth 3/4", cord 5-ft. tinsel, moisture-proof construction, type No. 501-10

plug attached. Leather-covered headband. This headset is recommended for monitoring service because of its high quality performance.

- No. 156—Double, 600 ohms Imp.....\$16.00
- No. 157—Double, 17M ohms, Imp..... 16.00
- No. 158—Double, 600 ohms Imp., no plug ..... 14.50
- No. 159—Double, 17M ohms Imp., no plug ..... 14.50

### ARMY-NAVY

Very sensitive, 6-ft. waterproof cord, phone tip terminals. Plastic cap, metal shell. Leather headband. Weight: 1 lb. Available in two impedances.



- No. 29—Double, 2,200 ohms d.c. (20M ohms Imp.).....\$16.00
- No. 28—Double, 112 ohms d.c. (600 ohms Imp.)..... 16.00



### TRIMM "E"

Lightweight headset. Cobalt steel magnet. Plastic cap and shell. Concealed terminals.

- No. 40—Double, 2M ohms, over-the-head all-rubber tinsel cord.....\$16.00
- No. 41—Double, 2M ohms, standard headband and cord..... 8.30

### TRIMM "B"

Suggested for hospital installations. Bakelite shell and cap. Forced bar magnet. Fabric-covered headband. 5-ft. tinsel cord.



- No. 42—Double, 2M ohms.....\$8.00
- No. 43—Double, 600 ohms Imp..... 8.00
- No. 44—Single, 1M ohms..... 4.65
- No. 45—Single, 300 ohms Imp..... 4.65

Ohmage given are d.c. resistance unless specifically indicated as impedance which is about 4-7 times the d.c. resistance.

Price subject to change without notice.

### STETH-A-PHONE

Widely used for secretarial transcribing machines, beauty parlor radios, etc. Satin chrome finished tube, removable neoprene flanged ear tips, cords, and phone plug.



- No. 50—2,600 ohms Imp.....\$11.00
- No. 51—500 ohms Imp..... 11.00
- No. 52—125 ohms Imp..... 11.00

### MIN-A-PHONE

Ultra lightweight midget earphone with extremely fine response. Recommended for transcribing machines, monitoring, pocket radios, etc. Comes complete with receiver unit, 5-ft. vinyl plastic-covered cord with plug and plastic earloop, permitting maximum ease and comfort in wearing.



- No. 10—Single, 2,600 ohms Imp.....\$8.50
- No. 11—Single, 500 ohms Imp..... 8.50
- No. 12—Single, 125 ohms Imp..... 8.50

## HEADSET REPLACEMENT PARTS

### CORDS FOR TRIMM HEADSETS

- No. 811—Double, black, 4 1/2-ft., braided. Fits Acme and Rex .....\$1.15
- No. 821—Double, black, 5-ft., braided. Fits Dependable ..... 1.20
- No. 822—Double, black or brown (specify), braided. Fits Professional ..... 1.40
- No. 831—Double, black, 6-ft., moisture-proof, braided. Fits Featherweight ..... 1.90
- No. 870—Double, black or brown (specify), 6-ft., moisture-proof, braided. Fits Commercial ..... 1.60
- No. 880—Double, black, 6-ft., waterproof, braided. Fits Army-Navy, etc. .... 3.00
- No. 807—Single, black, 4 1/2-ft., all-rubber. Fits Acme and Rex ..... .56
- No. 826—Single, black, 5-ft., braided. Fits Dependable, Professional, etc. .... .85
- No. 838—Single, black, 6-ft., moisture-proof, braided. Fits Featherweight ..... 1.50

### MISCELLANEOUS CORDS

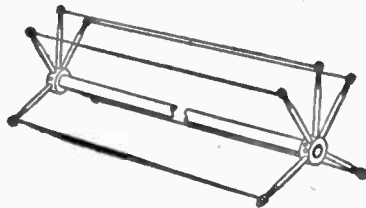
- No. 881—Double, black, 5-ft., pin tips at terminal and receiver ends .....\$1.00
- No. 882—Double, black, 5-ft., pin tips at terminal. Fits Brush type A headsets ..... 2.00
- No. 883—Double, black, 5-ft., pin tips at terminal, spade at receiver end ..... 1.00
- No. 884—Double, black, 5-ft., pin tips at terminal, eyelet and receiver end. Fits Brandes, etc..... 1.10
- No. 845—Double, all synthetic rubber cordage with molded plastic crotch. Terminals and length as specified. Widely used in hospital radio installations..... 2.50

### DIAPHRAGMS

- No. 610—Featherweight .....\$0.20
- No. 612—Professional, Dependable ..... .15
- No. 613—Acme and Rex ..... .15

For complete listing see TRIMM General Catalog.

### ANTENNA MATCHING STARS



Unique impedance transforming device for use with multi-element beams, raising antenna impedance to that of line. Consists of a pair of hubs into which a number of spokes up to 8 are assembled. Star-shaped assemblies are attached to far ends of driven element. From ends of spokes are stretched wires parallel to driven element of array.

- No. 910-A—Antenna Matching Star Kit. Two stars with 5 spokes each, adjusting nuts, set screws, hub bored for 1/2" max. O.D. tubing .....\$9.00
- No. 910-B—Same as No. 910-A except hub bored for 1" max. O.D. tubing ..... 9.00
- No. 912-A—Spokes (2) for No. 910 Kit. .80

See Bulletin R-20 for further information on Antenna Matching Stars.

### EAR CUSHIONS



Sponge rubber ear cushions provide maximum ease in wearing headsets. Fit TRIMM Featherweight, Commercial, Acme, Rex, and "E" types.

- No. 654 .....\$1.35

### ADDITIONAL PRODUCTS\* MANUFACTURED BY TRIMM

- WIRE WOUND POTENTIOMETERS and RHEOSTATS
- L-PADS and T-PADS
- MIDGET EARPHONES
- INSTITUTIONAL HEADSETS
- SPECIAL ARMY-NAVY HEADSETS, PLUGS, and JACKS
- PATCH CORDS
- REPLACEMENT CORDS

\*Write for Special Bulletins on these products.

# HEADPHONES By C. F. CANNON



## THE "CHIEF" Cannon-Ball Bakelite Headset

A high quality headset of durable molded black plastic. Attractive in appearance, it is a sensitive and practical phone for every headset use. Inside terminals. Diameter of diaphragm is  $2\frac{1}{8}$ ". Double coils, two in each receiver. Chrome steel magnets  $\frac{1}{4}$ " diameter. Supplied with braid-covered headband with permanent adjustment and no removable parts. Cotton covered cord,  $4\frac{1}{2}$  ft. long.

CC-2—2000 ohms D.C.	..... List \$4.00
CC-3—3000 ohms D.C.	..... List 4.50
CC-5—6000 ohms D.C.	..... List 5.50

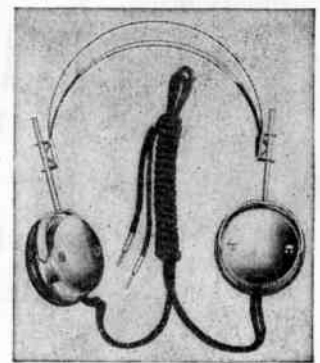


## CANNON-BALL ALNICO MAGNETIC No. 25

A New Headset of Unusual Quality, Efficiency and Durability, powered by Alnico V magnets.

The headband is covered by attractive black extruded vinylite and provides utmost wearing comfort. Limits turn of phone to prevent twisting of cord. Cap and case of molded plastic. Large size diaphragm  $2\frac{1}{2}$ ". Equipped with sanitary moisture-resistant plastic cord with riveted crotch piece.

AM-25-2	..... List \$6.50
AM-25-3	..... List 7.00
AM-25-5	..... List 8.50



## THE "MASTER" Cannon-Ball Headset

Used extensively in hospitals and other institutions as well as for general purposes, and is especially recommended for institutions. Inside terminals Aluminum cases with black bakelite caps. Spring steel adjustable headband with no removable parts. Diaphragm  $2\frac{1}{8}$ " diameter. Double coils. Chrome steel magnets.  $4\frac{1}{2}$  ft. cotton-covered cord.

MC-2—2000 ohms D.C.	..... List \$3.50
MC-3—3000 ohms D.C.	..... List 4.00
MC-5—6000 ohms D.C.	..... List 5.50

## CANNON-BALL "EMPIRE" Lightweight Headset

A low-priced light-weight headset with large magnet and double coils. Reproduces with clarity and good volume. Diameter of diaphragm is  $1\frac{1}{8}$ ". Polished aluminum cases with bakelite caps. Steel adjustable headband.  $4\frac{1}{2}$  ft. cord. Inside terminal connections.

EC-2—2000 ohms D.C.	..... List \$2.75
EC-3—3000 ohms D.C.	..... List 3.00

## THE "DIXIE" Cannon-Ball Headset

The "Dixie" is of the same general construction as the "Master" headset except that the terminals are on the outside.

CD-2—2000 ohms D.C.	..... List \$3.00
CD-3—3000 ohms D.C.	..... List 3.25



## BRANDES "SUPERIOR" Matched Tone Headset

A rugged headset, millions of which are in use all over the world. Large size diaphragms of  $2\frac{1}{8}$ " diameter assure efficient performance. Outside terminals, with polished aluminum cases and bakelite caps. Double coils, two in each receiver. Chrome steel magnets. Steel headband with permanent adjustment.  $4\frac{1}{2}$  ft. cotton covered cord.

BS-2—2000 ohms D.C.	..... List \$3.50
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## BRANDES "ADMIRAL" Matched Tone Headset

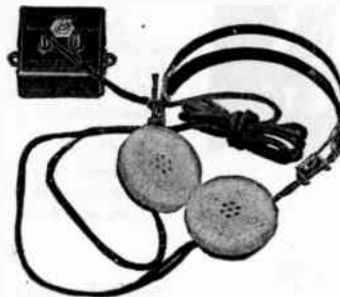
The Brandes "Admiral" is of the same general construction as the Brandes Superior, but has terminals on the inside.

BA-2—2000 ohms D.C.	..... List \$3.75
BA-3—3000 ohms D.C.	..... List 4.25
BA-5—6000 ohms D.C.	..... List 5.75

## ALNICO MAGNETIC No. 15

A new, small size, extra sensitive headset, light in weight. Diameter of diaphragm  $1\frac{7}{8}$ ". Molded cap and case. Steel adjustable headband.  $4\frac{1}{2}$  ft. cord.

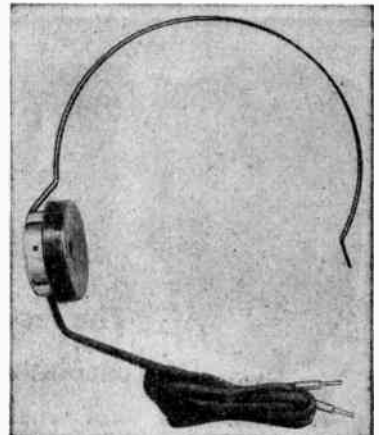
AM-15-2	..... List \$4.00
AM-15-3	..... List 4.50



## CANNON-BALL HEARING AID For Radio

Provides perfect reception for private listening without disturbing others. Can be attached to any radio and permits listening to phones alone, speaker alone, or both together, as desired.

With single phone	..... List \$7.50
With double phones	..... List 8.50



## CANNON-BALL "GRAND" Single Headphone

Equal in clarity and volume to most double headsets, efficient and attractive. Permits listening while being addressed by others. Concealed terminals. Diaphragm  $1\frac{7}{8}$ ". Aluminum case and bakelite caps. Chrome steel magnet, double coils.  $4\frac{1}{2}$  ft. cord. Spring steel headband permanently attached.

SG-1—1000 ohms D.C.	..... List \$1.85
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Phones can be supplied with any resistance required or with variations to meet special requirements. Sanitary plastic covered cords available for institutional use. Write for special quotation.

# New! Headset LISTENING COMFORT



**Rests Lightly On Sides  
of Head—Nothing  
Need Touch Ears!**

Telex Twinset weighs only 1.6 oz. Eliminates listening fatigue. Adjustable, self-locking sound arm may fit into the ear or may be moved a fraction of an inch away, so that nothing touches the ear.

Telex Twinset adjusts simply to any shape head, without pinching or pressure. So flexible it may be coiled up and slipped into the pocket! Perfect for any headset need—amateur, experimental, commercial. Approved by CAA.

PRICES	List	Dealer Net
Twinset only . . . . .	\$11.25	\$6.75
Twinset with cord . . . . .	15.00	9.00
Monocord only . . . . .	3.75	2.25

## SPECIFICATIONS

**Sensitivity**—101 db. above .000204 dynes per sq. cm. for 10 microwatts input.

**Impedances**—1000 ohms (brown), 64 ohms (yellow). (Coding visible inside female socket.)

**Construction**—Weight: 1.6 oz. Tenite plastic and bright nickel for all major parts. Headband: Z-nickel steel wire cased in plastic. Single 5' Monocord plugs into either receiver. Special cord with built-in volume control available.



**Under-Chin Headset  
for many unique  
headset applications**

Telex Monoset sends signal directly into both ears, blocking out background noise. Built of durable Tenite, the Monoset is excellent for communications, office dictation equipment, aircraft radio, wired sound installations, dental offices and beauty shops.

PRICES	List	Dealer Net
Monoset only . . . . .	\$ 8.65	\$5.19
Monoset with standard cord . . . . .	12.40	7.44
Monoset with volume-control cord . . . . .	16.40	9.84
Standard cord . . . . .	3.75	2.25
Volume-control cord . . . . .	7.75	4.65

## SPECIFICATIONS

**Sensitivity**—88 db. above .00024 dynes per sq. cm. for 10 microwatts input.

**Impedances**—128 ohms, 500 ohms, 2000 ohms.

**Construction**—Weight: 1.2 oz. Sealed magnetic receiver. Unbreakable, grey polished Tenite construction. Removable plastic eartips. Choice of 5' tinsel cord with standard plug or built-in volume control.



**The modern  
earphone that slips  
onto the ear!**

Weighing only 1/2 oz., this entirely new conception in ear-phone design finds a ready welcome among stenographers, technicians—all who use single-phone headsets.

Earset's flat plastic frame slips onto the ear, holds the sensitive receiver securely in place. User's other ear is always free for phone calls or conversation. Telex Earset fits either right or left ear, may be worn by anyone without special adaptation.

PRICES	List	Dealer Net
Earset only . . . . .	\$ 6.75	\$4.05
Earset with cord . . . . .	10.50	6.30
Standard cord . . . . .	3.75	2.25

## SPECIFICATIONS

**Sensitivity**—Comfortable listening level with .3 milliwatt input.

**Impedances**—128 ohms, 2000 ohms.

**Construction**—Weight: 1/2 oz. Clear plastic ear frame. Sealed, rust-proof receiver. 5' Monocord with standard phone plug connection.

\*Trademark



# TELEX

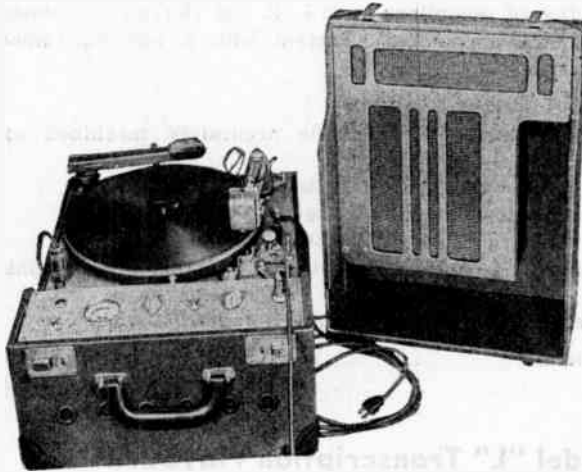
Standard of the World for Quality Headsets  
**TELEX PARK • ST. PAUL 8, MINNESOTA**  
 IN CANADA: ATLAS RADIO CORP. • TORONTO



# RECORDING CORPORATION

WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT AND DISCS

## PRESTO K-10 RECORDER FOR MICROGROOVE AND REGULAR RECORDING



The PRESTO K-10 Recorder, formerly known as the K-8, the foremost machine of its kind to be used in schools for speech, voice, languages, dramatics, music, etc., is now offered for MICROGROOVE (long-playing) recording as well as the standard method.

Note these features:

- Cutting pitches of 112 lines per inch Outside-in, 112 lines Inside-out, 224 lines per inch Outside-in and 224 lines per inch Inside-out.
- Standard unit is equipped for two speeds, 33  $\frac{1}{3}$  and 78 rpm. Available for three speeds, 33  $\frac{1}{3}$ , 45 and 78 rpm at additional cost.
- The cutting head is equipped with an advance ball which regulates the depth of the groove more accurately than a counter spring.
- Two interchangeable pick-up arms, one containing the MICROGROOVE head and the other containing the regular head. Each head is complete with a permanent sapphire stylus.
- A single control permits instant choice of recording, playback, or public address. Amplifier also contains radio and monitor jacks.

The PRESTO K-10 will, when set for MICROGROOVE, record 6  $\frac{1}{2}$  minutes on every inch of disc used. This means that a 15-minute recording with good fidelity can be put on one side of a 12" disc! And a half-hour can be put on one side of a 13  $\frac{1}{4}$ " disc. Seven minutes can be recorded on one side of a 6  $\frac{1}{2}$ " disc.

Price of K-10, less microphone and stand, \$348.00\*.

No increase over K-8.

\*\$5.00 additional for 45 rpm pulley and record adapter.

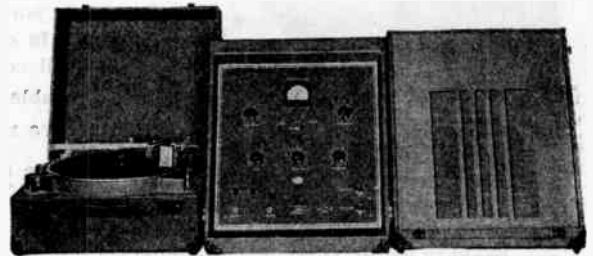
## PRESTO "Y" RECORDER FOR MICROGROOVE AND REGULAR RECORDING

The PRESTO Y-5 is identical to the famous Y-4 but MICROGROOVE has been added. The following feed pitches are included with the Y-3: 112 lines per inch Outside-in, 112 lines per inch Inside-out, 224 lines per inch Outside-in, and 224 lines per inch Inside-out.

Other features are:

- Two interchangeable Pickering sapphire cartridges — for MICROGROOVE and regular recording.
- Advance ball on cutting head to accurately control depth of groove.
- 16" turntable — will take 17  $\frac{1}{4}$ " masters.
- Standard unit is equipped for two speeds, 33  $\frac{1}{3}$  and 78 rpm. Available for three speeds, 33  $\frac{1}{3}$ , 45 and 78 rpm at additional cost.
- Amplifier has connections for two microphones and two turntables. Output is 10 watts. Both high and low frequency manual equalizers are included.
- Ten-inch PM speaker and baffle are built into cover of amplifier.
- Presto high-fidelity 1-D cutting head.

When set for MICROGROOVE the Y-5 will record for 6  $\frac{1}{2}$  minutes on each inch of disc used. A fifteen-minute program can be put on one side of a 12" record. A half-hour on one side of a 16" record. Forty minutes can be recorded on one side of a 16" record by cutting to minimum diameter.

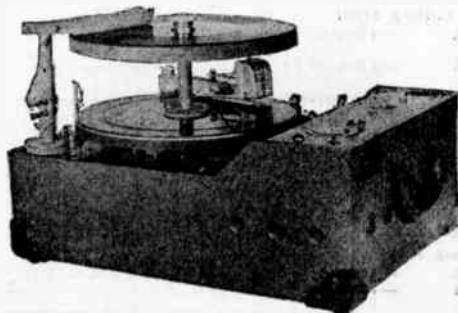


The price of the Y-5 is \$771.00\*

Microphone and stands are not included as regular equipment.

\*\$10.00 additional for 45 rpm pulley and record adapter.

## TYPE 325-M RE-RECORDER



The Presto 325-M re-recorder is a device to be used with the Presto K-10 and Y-3 (and 5) recorders to copy (dub) recordings without the need of a separate turntable. The 325-M consists of a turntable and pedestal which is placed on top of the recorder turntable. The recorded disc is placed on this auxiliary turntable and a new blank disc on the recorder turntable. During re-recording, both discs rotate together. An extension is provided to elevate the pickup to the level of the auxiliary turntable.

Price of 325-M for K-10 or Y-5 recorders  
\$38.10 List.





# RECORDING CORPORATION

WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT AND DISCS

## 3-SPEED MICROGROOVE AND STANDARD PLAYBACK TURNTABLE



### Type 15-GCP-2

The Presto Type 15-GCP turntable is an unusually high quality unit for the reproduction of recordings at 33 1/3, 45 and 78 rpm. The design provides an instantaneous speed selection with a very convenient control arrangement.

#### FEATURES:

- Heavy cast aluminum 12" turntable accurately machined and balanced.
- Precision idler wheels and motor pulley.
- Good speed regulation—minimum "wow."
- Performance comparable to transcription equipment.
- Two pickups included—one standard and one microgroove. Sapphire stylus.
- May be connected to any radio or audio amplifier.

List Price complete.....\$94.00  
Chassis only ..... 49.50



### Model "L" Transcription Playback

This equipment is designed for radio stations, advertising agencies and program producers, who demonstrate recorded programs at the offices of prospective clients.

The Model L Playback was developed to meet the insistent demand among the larger broadcasting stations and agencies for "something better" in portable reproducing equipment. Those who use the Model L Playback in connection with important sales of station time and programs will consider its exceptional performance well worth its cost.

L-3—Portable Transcription Playback for regular and micro-groove records .....List, \$290.00

## PRESTO DISCS AND NEEDLES FOR COMMERCIAL, EDUCATIONAL RECORDING

### PRESTO GREEN LABEL DISCS—ALUMINUM BASE

Packed 25 per box, except 18 1/4" are 80 per box.

Type	Size	Thickness	List Price ea.	Code
610-A	10"	.052"	\$1.15	
611-A	11 3/4"	.052"	1.80	ELVET
613-A	13 1/4"	.052"	2.25	THYRT
616-A	16"	.056"	3.25	SIHEV

### PRESTO OVERSIZE MASTER DISCS—ALUMINUM BASE

(Packed in boxes of 20 discs)

Type	Size	Thickness	Size of Pressing	List Price ea.	Code
627-A	17 1/4"	.066	16"	\$4.90	SEVYT

### PRESTO BROWN LABEL DISCS

(Green label having only one side perfect)

\*Packed 80 to box. †Packed 20 to box.

Size	List Price, ea.
13 1/4"	\$1.50*
17 1/4" (Masters)	3.25†

### PRESTO ORANGE LABEL DISCS

(Medium Aluminum Base—Overall Thickness .086")

Type	Size	List Price, ea.	Code (Box of 10)
306-A	6 1/2"	\$0.35	ORSIN
308-A	8"	.50	ORBAL
310-A	10"	.75	ORCAR
312-A	11 3/4"	1.00	ORDEL

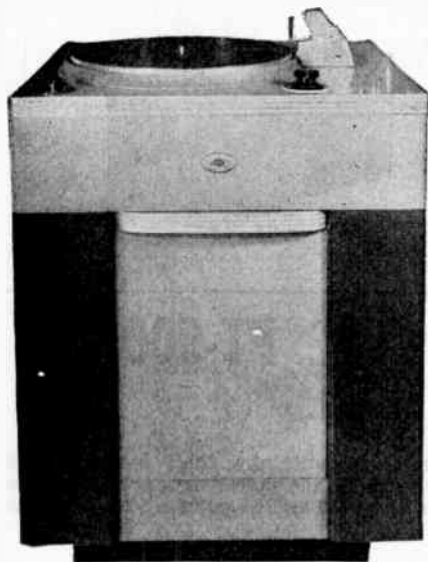
### CUTTING AND PLAYING NEEDLES

Type and Number	Cutting Stylus	List Price Per Needle
Sapphire	—	
320-A	—Brass Shank—Short, (Box of 6)	\$6.00
321-A	—Brass Shank, Long, (Box of 6)	6.00
603-A	—Dural Shank—Short, (Box of 6)	8.00
603 MICRO	—Same as above for MICROGROOVE	8.00
604-A	—Dural Shank—Long, (Box of 6)	8.00
604 MICRO	—Same as above for MICROGROOVE	8.00
	Resharpenering Sapphire	2.00
Stellite	—	
330-A	—(Box of 6)	2.00
331-A	—(Box of 6)	2.00
807-A	—Resharpenering Stellite Point	.75
Steel	—	
330-A	—(Package of 3)	1.00
Sapphire	—	
420-A	—Sapphire Playing Needle	1.25
Transcriptone	—	
430-A	—Transcriptone Playing Needle	1.00
Red Shank	—	
440-A	—(Package of 25)	.25
440-B	—(40 Packages of 25)	10.00



# RECORDING CORPORATION

WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT AND DISCS



Presto Type 153 Reproducer extra

## PRESTO 64-A TRANSCRIPTION TURNTABLE

The Presto 64-A transcription turntable offers the following features which are of major importance to the owner and operator: Unusual mechanical simplicity . . . low mechanical disturbance . . . perfect speed accuracy . . . extreme ruggedness for long continuous operation . . . instantaneous selection of desired speed . . . and no requirements for mechanical adjustments.

This transcription turntable is directly gear driven and employs two separate motors, one for 33-1/3, and the other for 78.26 rpm. There is no friction device of any kind in the mechanism and no mechanical shift is required to change speeds. To select 33-1/3 rpm, 78 rpm or "off," the operator merely throws a three position switch. These changes may be made as rapidly as desired while the turntable is in motion with no damage to the mechanism. Only one motor at a time is in operation. The transmission "over runs" the motor which is not turning and thus does not carry it along in rotation although the stationary motor is never disengaged from the mechanism.

### SPECIFICATIONS

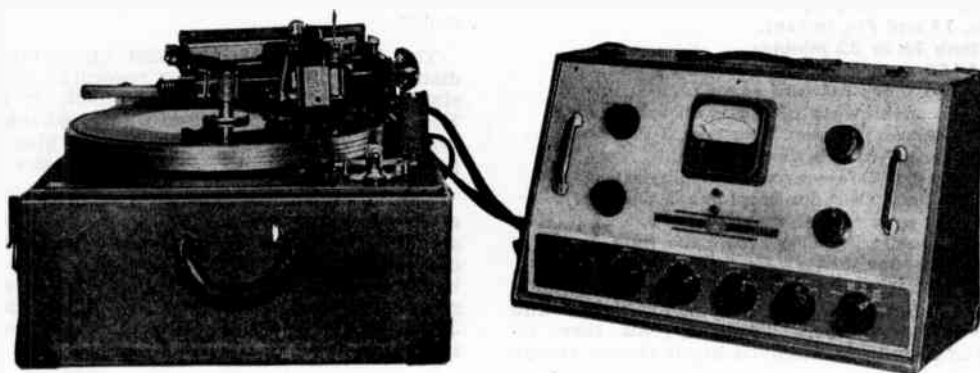
**Standard Equipment:** The 64-A transcription turntable includes the electro-mechanical gear drive, turntable and cabinet. A reproducer and network is not included.

**Speed Accuracy:** No deviation from 33-1/3 and 78.26 rpm.

**Noise Level:** Mechanical noise originating in the equipment over 50 db below program level.

**Power Requirements:** Approximately 75 watts from a 115 volt, 60 cycle line. Motors are of the 1800 rpm synchronous type and are available for other voltages and frequencies at additional cost.

**Mounting:** Turntable and gear drive mounted in heavy wood cabinet 24x24x33 inches (61x61x84 cm.). Finished in two tones of grey lacquer. List Price, \$495.00



## PRESTO 6-N RECORDER AND 90-B AMPLIFIER

The PRESTO 6-N Recorder and 90-B Amplifier is the ideal recording equipment for portable or stationery operation.

The 6-N Recorder is outstanding in its suitability for broadcast stations because it offers all the qualifications for good recordings, including master records, at the most economical price. It is ideal for the station requiring delayed broadcast of network programs, and for reference recordings.

The 6-N standard equipment includes the Presto 1-D cutting head, spiraling feed screw, vertical damper, time scale and pick-up. It is available for microgroove recording at addition cost.

The Presto 90-B recording amplifier contains all the facilities necessary for operation on remote assignments, but with all overall performance found only in high-fidelity studio equipment.

It consists of three preamplifiers with individual gain controls, a mixer circuit, a master gain control and recording amplifier. Provision is made for connecting the Presto 161-A automatic equalizer (radius compensator).

A five-position selector switch provides the following characteristics: 1—flat response, 30 to 15,000 ±1 db; 2—NAB 33 1/3 rpm recording; 3—present day 78-rpm recording; 4—NAB playback; and

5—automatic equalization. The flat response can be modified by variable bass and treble controls, giving emphasis up to a maximum of 20 db at 100 and 7,500 cycles per second or 20 db de-emphasis at 7,200 cycles per second.

Noise is 55 db below recording level and distortion at maximum output is less than 1.5%.

The use of input and output selector switches makes the 90-B amplifier unusually flexible. It permits combining the signals of three microphones or of two microphones and either one of two pick-ups. By using the "Line" position, recordings can be made from an incoming program line. The output selector has three positions; playback (public address), continuous recording and simultaneous recording. While recording, the line jack provides a monitoring outlet or permits feeding a program line at the correct level.

The correct level is monitored by means of a Weston Type 30 VU indicator with illuminated scale and its closely controlled electrical and dynamic characteristics make it an ideal volume indicator for recording.

List Price of 6-N.....\$735.00  
List Price of 90-B..... 595.00



# RECORDING CORPORATION

WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS SOUND RECORDING EQUIPMENT AND DISCS



## PORTABLE TAPE RECORDER TYPE PT-900

### GENERAL DESCRIPTION

The Presto PT-900 Portable Magnetic Tape Recorder is a professional high quality unit especially designed for both studio and remote recording. It is complete in two portable cases: one, containing the 900-R1 recorder mechanism and the bias and erase

oscillator; the other, containing the 900-A1 amplifier system in one half and the power supply in the other half; weight is about 40 and 35 pounds for each case, respectively.

### FEATURES

**High fidelity equipment**—meets with all broadcast requirements.

**Portable Unit**—two carrying cases.

**Two-speeds**, 15 and 7½ in./sec.

**Recording time** 16 or 32 minutes.

**Fast rewind** (50 sec.) in either recording speed.

**Fast forward** (3 times forward speed).

**Movable guide** saves wear of heads on fast rewind.

**Three plug-in heads**: 1-Erase; 2-Record; 3-Playback.

**Azimuth adjustment** for playback head.

**Two separate amplifiers**—record and playback.

**Four input channels**. (Three microphone & one line).

**Suitable** for use as a remote amplifier.

**Instantaneous monitoring** direct from the tape.

**Dynamic range** better than 55 db.

The Presto 900-R1 Recorder consists of a single dual-speed hysteresis type synchronous motor and idler-connected drive to capstan and reels, three individual plug connected magnetic heads (erase, record

and play-back), erase and bias oscillator, system selector switch, speed change toggle switch, fast forward lever and record safety button, and separate rewind motor.

The Presto 900-A1 Amplifier unit consists of two distinct amplifiers: one, for recording or remote assignments; the other, for playback or monitoring. The use of separate record and playback amplifiers together with separate record and playback heads permits instantaneous monitoring of the tape.

The excellent design, quality of materials and high grade workmanship make the Presto PT-900 the outstanding recorder in its field. In performance it is comparable to the larger studio tape recorders but, because of its portability, it is limited to a maximum reel size of 7 inches. This permits approximately 16 or 32 minutes of recording at a tape speed of 15 or 7½ inches per second, respectively.

### SPECIFICATIONS

**Motor**: Dual speed (1800 and 900 rpm) hysteresis synchronous type, capacitor start and run.

**Signal-to-Noise Ratio**: Better than 50 db for the overall system at full modulation. Full modulation being the level at which a 400 cps input will produce 2% RMS overall distortion.

**Output Level**: Recording amplifier . . . + 21 dbm; playback amplifier . . . + 28 dbm.

**Frequency Response\*\***: Both amplifiers—substantially flat from 50-15000 cps; overall response at 15 inches per second—substantially flat from 50-15000 cps; overall response at 7½ inches per second—flat from 50-7500 cps.

**Meter**: Standard 4 inch illuminated dial VU meter checks recording and output levels, bias and erase currents.

**Output Impedance**: 500/600 ohms.

**Input Impedance**: Microphones—80 or 250 ohms.

**Line Input**—high impedance bridge.

**Dimensions**: The mechanical unit, including the oscillator, mounts in a leatherette covered portable case 16" x 11¼" x 14" overall. The amplifier case is in two sections: one containing the amplifiers measures 20" x 9" x 8¾" deep; the other, containing the power supply, measures 20" x 9" x 8¾" deep; thus, the overall dimensions are 20" x 9" x 17".

### PRICES

The Presto PT-900, consisting of the 900-R1 mechanical section and the 900-A1 amplifier and power supply, is sold at \$695.00.

The 900-R1 alone is \$350.00.

The SA-9 Switch Box is \$40.00. This unit is used to connect two 900-R1's to one 900-A1 for continuous recording over longer periods of time than is possible with the PT-900 alone. Rack mounting types of the PT-900, and SA-9 are the same price as portable types.



# REK-O-KUT COMPANY INC.

WORLD'S MOST POPULAR LINE OF RECORDERS AND TRANSCRIPTION EQUIPMENT

## "CHALLENGER" PROFESSIONAL 13 1/4" DISC RECORDERS FOR STANDARD AND MICRO-GROOVE RECORDING

The "CHALLENGER", America's finest professional 13 1/4" disc recorder is built expressly for the inexperienced recordist who wants to make a permanent, professional recording. It embodies the most advanced design, engineering and production techniques in the disc recording industry. The many exclusive operating features incorporated in the "CHALLENGER" simplify and improve the art of disc recording. The "CHALLENGER" is offered in two models:

### STANDARD ★ DELUXE

representing a choice in the recording facilities necessary to meet the respective needs of the Professional Recordist, Musician, Educator and Recording Enthusiast.

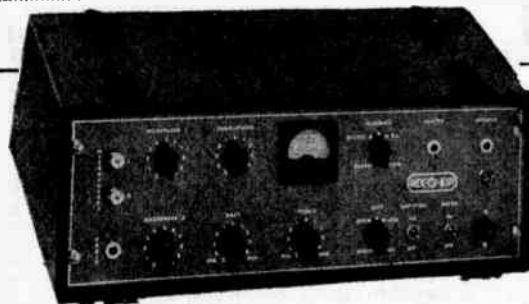
### SPECIFICATIONS:

- "CHALLENGERS" are built under the new, accepted methods of unit assembly, utilizing field-proven REK-O-KUT recording components.
- RECORDING AREA: Records from 6" up to 13 1/4" masters.
- SPEEDS: Simple, finger-tip speed control for instantaneous selection of speed desired — 78, 45, or 33 1/2 RPM.
- OVERHEAD RECORDING MECHANISM:
  - "LIFTOMATIC SAFETY CAM" prevents double cutting and damage to the stylus by automatically raising the cutter from the disc as it approaches the center of the record.
  - FACILITATES INTERCHANGING LEADSCREWS for standard or micro-groove recording.
  - SPIRAL GROOVES: Run-in, run-out and locked grooves are made with a simple, manual operation.
- PICKUP ARM: 16" with dual stylus cartridge. Plays up to 16" broadcast transcriptions, standard commercial pressings and micro-groove records.
- TURNTABLE: Precision machined aluminum. Two double-duty neoprene idlers for internal rim drive. Powered by heavy-duty dynamically balanced motor.
- SPEAKER: 8" — PM type. Built to rigid REK-O-KUT specifications for extra power and wide range. Mounted into detachable cover of case.
- CASE: Sturdy plywood covered with rich grey leatherette. Built to withstand rough usage.
- DIMENSIONS: 25" x 22" x 12". Weight: 65 lbs.



Challenger Standard Illustrated

<b>STANDARD Model</b> — Equipped with R-5A amplifier and induction motor .....	<b>\$359.95</b>
<b>DELUXE Model</b> — Equipped with R-8A amplifier, variable reluctance magnetic pickup and Hysteresis Synchronous motor .....	<b>429.95</b>
<b>ACCESSORIES</b>	
<b>M12-192</b> Micro-Groove Leadscrew .....	<b>17.95</b>
<b>TR-103A</b> Idler and Adapter for 45 RPM., interchangeable with 38 1/2 RPM idler.....	<b>6.00</b>



R-8A Amplifier in C-85 Case Illustrated

(C-85 Portable Case—For R-5A or R-8A Amplifiers. \$22.95 net)

### UNIVERSAL RECORDING AMPLIFIER (as used in Deluxe model)

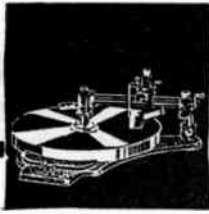
**FREQUENCY RESPONSE:** ±1 db from 80 to 20,000 cycles at normal setting of equalizer controls.  
**POWER OUTPUT:** 18.5 watts at less than 3% total distortion into resistive load.  
**TREBLE EQUALIZER:** Boost of 14 db and attenuation of 15 db above 8,000 cycles, continuously variable.  
**BASS EQUALIZER:** Boost of 14 db and attenuation of 14 db below 50 cycles, continuously variable.  
**INPUT CHANNEL:** Four: 2 high impedance microphones, phono channel compensated for G.E. or Pickering pickup, radio. Switch on rear of chassis changes phono channel for crystal pickup operation.  
**GAIN:** Microphones: 120 db, Phono: 90 db, Radio: 80 db.  
**OUTPUT IMPEDANCE:** 4, 8, 15, 125, 250, 500 ohms for cutter and speaker.  
**OUTPUT SELECTOR:** Three positions providing: recording, play-back and public address. Microphones are muted in play-back position.  
**MONITORING:** A switch is provided giving three positions of monitor level: off, medium, loud. Speaker or headphones may be used. Meter on front panel indicates correct recording level.  
**HUM AND NOISE:** 64 db below 18.5 watts with all controls turned for maximum hum and noise output.  
**CONTROLS:** Microphone "A," microphone "B," radio-phono fader, output selector, treble equalizer, bass equalizer, monitor.  
**TUBE COMPLEMENT:** (2) 6SJ7; (2) 6SL7; (1) 6XC7; (2) 6V6; (1) 5Y3.  
**POWER SUPPLY:** 105-125 volts, 50-60 cycles.  
**POWER CONSUMED:** 100 watts.  
**DIMENSIONS:** Panel: 19" x 6 1/4" — Chassis: 17" x 8 1/4".  
**WEIGHT:** 17 lbs.

**R8A** For rack mounting, including tubes..... **\$149.95**

### UNIVERSAL RECORDING AMPLIFIER (as used in Standard model)

**FREQUENCY RESPONSE:** ±1 db from 50 to 15,000 cycles at normal setting of equalizer controls.  
**POWER OUTPUT:** 12 watts at less than 3% total distortion into resistive load.  
**TREBLE EQUALIZER:** Boost of 14 db and attenuation of 15 db at 8,000 cycles, continuously variable control.  
**BASS SELECTOR:** Attenuation of 14 db at 50 cycles, switch type.  
**INPUT CHANNELS:** Three: high impedance microphone, high impedance phono pickup and radio.  
**GAIN:** Microphone: 125 db, Phono: 76 db, Radio: 76 db.  
**OUTPUT IMPEDANCE:** 2, 4, 8, 15, 500 ohms for cutter and speaker.  
**HUM AND NOISE:** 64 db below recording level.  
**MONITORING:** A switch is provided giving two positions of monitoring level or monitor may be cut out. Speaker or headphones may be used. Meter on front panel indicates correct recording level.  
**OUTPUT SELECTOR:** Three positions providing: recording, play-back and public address. Microphone is muted in play-back position.  
**CONTROLS:** Microphone gain, phono-radio fader, output selector, equalizer, bass, monitor.  
**TUBES:** (1) 6SJ7; (2) 6SL7; (2) 6V6GT; (1) 5Y3GT.  
**POWER SUPPLY:** 105-125 volts, 50-60 cycles.  
**POWER CONSUMED:** 80 watts.  
**DIMENSIONS:** Panel: 19" x 6 1/4" — Chassis: 17" x 8 1/4".  
**WEIGHT:** 16 lbs.

**R5A** For rack mounting, including tubes..... **\$109.95**

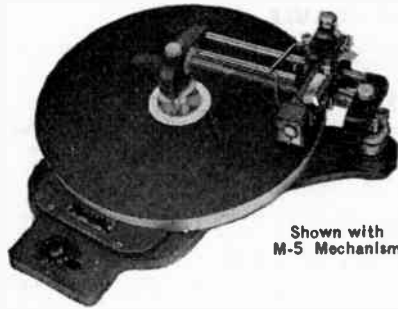


# REK-O-KUT COMPANY INC.

WORLD'S MOST POPULAR LINE OF RECORDERS AND TRANSCRIPTION EQUIPMENT

## MODEL V DELUXE DUAL SPEED 16" RECORDING TURNTABLES

The outstanding value in the recording field. Ruggedly constructed and precisely machined, the model "V" deluxe turntable will maintain the constant, wow-free speed and smoothness demanded in broadcast work. The models M-5S, M-5 and the M-16 Overhead Cutting Mechanisms are mounted to the "V" and "MV" turntables in a matter of moments.



Shown with  
M-5 Mechanism

- MOTOR:** New Hysteresis Synchronous type equipped with lamitex pulley for synchronous speed and maximum drive. Suspended in sheer shock mounts to prevent transmission of motor vibration to turntable or chassis.
- TURNTABLE:** Normalized aluminum alloy casting, lathe turned and balanced.
- CHASSIS:** Cast-iron ribbed L beam type with socket for instantaneous installation of M-5S, M-5 or M-16 recording mechanisms.
- IDLERS:** Double-duty type made of Neoprene compound provides maximum traction. Will not glaze under operating conditions.
- OILING:** Shafts and bearings are self-oiling. Require infrequent periodic lubrication.

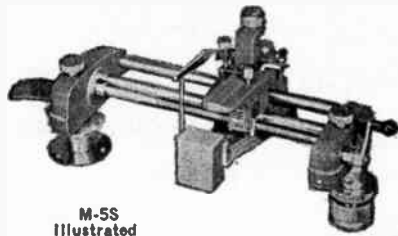
### SPECIFICATIONS:

- SPEED CHANGE:** Mastermatic self-locking instantaneous speed shift.
- DIMENSIONS:** Length: 20"; Width: 20"; Height: 2 1/2" above motor board; 5" below motor board; Weight: 28 lbs.

Model	Net Price
"V-Deluxe" . . . . .	\$195.45
"MV" . . . . .	Equipped with induction motor and manual shift. Designed for use with M-16 only . . . . .
	140.00
"VI03A" . . . . .	45 RPM Idler and record adapter interchangeable with 38 1/2" . . . . .
	8.00

## MODEL M-5S MASTER-PRO 16" OVERHEAD RECORDING MECHANISM

A precise tool for professional work. Working surfaces and moving parts are hardened, ground and polished to a micro finish. The Master-Pro is a universal machine that can be readily attached to all 16" recording turntables as well as the Rek-O-Kut model "V" recording table.



M-5S  
Illustrated

- TILT AND LEVEL ADJUSTMENT:** Enables the operator to level and square his unit to disc in a matter of moments.
- DUAL CLUTCH SPIRALING CONTROL:** A fool-proof device which eliminates the danger of spilling a record while the crank-handle is in motion.
- MICROMETER DEPTH ADJUSTMENT:** For positive depth control of the cutting head.
- LEADSCREW:** Stainless steel with matched bronze feednut.
- ANGLE OF CUT:** Is controlled by a simple micrometer adjustment.
- GEARS:** Drive gears completely enclosed to prevent fouling by loose chips.

### SPECIFICATIONS:

- Standard units are equipped with 8-ohm magnetic cutter and 120-line O.I. Leadscrews.
- DIMENSIONS:** Length: 16"; Width: 6 1/2"; Height: 9"; Weight: 11 lbs.

Model	Net Price
M-5S . . . . .	With spiraling device \$215.00
M-5S . . . . .	Without cutter . . . . .
	200.00
M-5 . . . . .	Less spiraling device . . . . .
	175.00
M-5 . . . . .	Without cutter . . . . .
	160.00

### Micro-Groove Leadscrews

MS-210 . . . . .	For M-5S . . . . .	47.50
M-210 . . . . .	For M-5 . . . . .	36.25

Extra Leadscrews Listed on Page E-7.

## MODEL TR-12H, DUAL SPEED 12" RECORDING TURNTABLE

The first 12" dual speed recording turntable to feature a HYSTERESIS SYNCHRONOUS MOTOR. Design and construction of the model TR-12 is similar to the Rek-O-Kut 16" professional recording tables. The model M-12 overhead recording mechanism is mounted to the chassis in a few moments.



Shown with  
M-12 Mounted

- TURNTABLE:** Aluminum, lathe turned and balanced.
- CHASSIS:** Cast aluminum. Drilled and tapped for instantaneous mounting of the M-12 recording mechanism.
- MOTOR:** Heavy duty Hysteresis Synchronous, fitted with a lamitax drive pulley. Suspended in sheer shock mounts to prevent transmission of motor vibration.
- SHAFTS:** Hardened, ground and polished to a micro-finish.
- DRIVE:** Internal rim drives through double-duty Neoprene drivers, insures free, smooth and quiet operation.

### SPECIFICATIONS:

- SPEED CHANGE:** Instantaneous speed shift engages either the 78 or 33 1/2 RPM idler.
- FINISH:** Beautiful blue grey wrinkle.
- DIMENSIONS:** L.: 14 1/2"; W.: 16 1/2"; Weight: 17 lbs.; Height: 1 3/4" above motor board. 5" below motor board.

Model	Net Price
TR-12 . . . . .	With hysteresis synchronous motor . . . . .
	\$119.50
TR-12 . . . . .	With 4-pole induction motor . . . . .
	89.50
T103A . . . . .	45 RPM Idler and Adapter . . . . .
	6.00

## MODEL M-12 AND M-16 OVERHEAD RECORDING MECHANISMS

The M-12 and M-16 Overhead Cutting Mechanisms are truly professional machines for recording enthusiasts and professionals. They incorporate many of the features found only in 16" professional units. The M-12 records up to 18 1/2" master discs and can be mounted on any 12" recording turntable. The M-16 can be easily mounted to any 16" turntable for 16" disc recordings.



M-16  
Illustrated

- SPIRAL GROOVE:** A run-in, run-out and locked groove made with a simple manual operation.
- LEADSCREW:** Stainless steel, lapped to a matched feednut which is in constant mesh.
- LIFT-O-MATIC:** Automatically lifts cutter from disc as it approaches end of leadscrew.
- MAGNETIC CUTTER:** Flat from 40 to 7,000 cycles.
- DIMENSIONS:** (a) M-12—L.: 11 1/2";

### SPECIFICATIONS:

- W.: 4 1/4"; H.: 6". (b) M-16—L.: 14"; W.: 4 1/4"; H.: 6".

Model	Net Price
M-12 . . . . .	For 12" turntables \$ 89.50
M-16 . . . . .	For 16" turntables 119.50

### Micro-Groove Leadscrews

M-12-192 12" . . . . .	17.95
M-16-192 16" . . . . .	22.95

Standard units equipped with 8-ohm cutter and 108-Lpi O.I. leadscrews. When ordering lead screws other than standard, \$5.00 add'l Extra Leadscrews Listed on Page E-7.



# REK-O-KUT COMPANY INC.

WORLD'S MOST POPULAR LINE OF RECORDERS AND TRANSCRIPTION EQUIPMENT

## MODEL "G-2" DELUXE 16" TRANSCRIPTION TURNTABLES

The model "G-2 Deluxe" Transcription Turntable is acknowledged without reservation by the broadcasting industry to be the finest rim-driven turntable on the market. The rigid requirements for network programs are easily met by the "G-2 Deluxe."

### OPERATING DATA:

- STARTING:** From standing start to 78 rpm  $\frac{1}{2}$  of a turn. From standing start to 38  $\frac{1}{2}$  rpm  $\frac{1}{4}$  of a turn. Meets the NAB standard for speed variation and wow content.
- NOISE LEVEL:** 50 db below average recording level.
- CUEING:** 15  $\frac{1}{2}$ " turntable permits the record to overlap  $\frac{1}{2}$ " which enables the operator to cue from the rim of the disc.
- CONSTRUCTION:** (A) Precision lath-turned balanced turntable. (B) Hysteresis synchronous motor with Lamitex pulley for maximum drive. (C) Double-duty Neoprene idlers. (D) Cast-iron L beam no twist chassis. (E) Mastermatic self-locking instantaneous speed shift. (F) All shafts hardened, ground and polished to a micro finish.
- DIMENSIONS:** L.: 18"; W.: 20"; H.: 2  $\frac{1}{2}$ " above motor board; 5" below motor board. Weight: 26 lbs.

Model	Net Price
"G-2 Deluxe" . . . . .	\$165.45
"G-2" Standard Equipped with constant speed induction motor and manual shift. . . . .	125.00
G103A 45 rpm idler and record adapter interchangeable with 38 $\frac{1}{2}$	8.00



G-2 Standard Illustrated

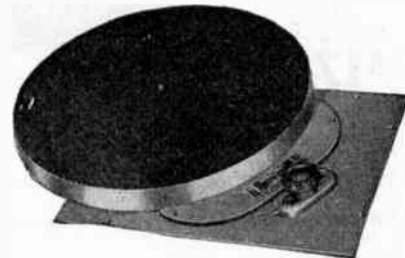
## MODELS T-12H and T-43H DUAL SPEED 12" TRANSCRIPTION TURNTABLES

The REK-O-KUT Models T-12H and T-43H are the only 12" dual speed turntables that meet the standards for speed regulation and wow content specified by the National Association of Broadcasters. The construction, design and performance standards equal those of the REK-O-KUT 16" broadcast models. The T-12H and T-43H are recommended for use with Hi-Fi amplifiers and speaker systems.

### SPECIFICATIONS:

- NOISE LEVEL:** (a) T-12H and T-43H—50 db below average recording level. (b) T-12 and T-43—40 db below average recording level.
- MOTORS:** (a) T-12H and T-43H—Hysteresis Synchronous. (b) T-12 and T-43—4 pole induction, built to REK-O-KUT specifications. The motors, shock mounted, are fitted with lamitex pulleys, which are pressed on and ground concentric to the motor shaft—an exclusive REK-O-KUT feature which insures smooth, rattle-free operation.
- COMPONENTS:** Turntable: Cast aluminum, machined and balanced. Chassis: Aluminum casting, cross ribbed, flush mount. Requires a rectangular cutout for mounting. Easily installed. Drive: Internal rim drive through double-duty Neoprene idlers insures free, smooth and quiet operation. Shafts: Hardened, ground and polished to a micro-finish.
- SPEED SELECTION:** Instantaneous speed shift engages either 78 or 38  $\frac{1}{2}$  rpm idler without stopping turntable or removing disc.
- FINISH:** Blue grey wrinkle.
- DIMENSIONS:** L.: 12"; W.: 15"; H.: 1  $\frac{1}{2}$ " above motor panel and 5" below motor panel. Weight: 13 lbs.

Model	Speeds	Net Price
T-12H	78 - 33 $\frac{1}{3}$	\$109.50
T-12	78 - 33 $\frac{1}{3}$	79.50
T-103A	(45 rpm idler, interchangeable with 38 $\frac{1}{2}$ including record adapter . . . . .)	6.00
T-43H	45 - 33 $\frac{1}{3}$	109.50
T-43	45 - 33 $\frac{1}{3}$	79.50
T-104	(78 rpm idler, interchangeable with 45 rpm) . . . . .	5.50



T-12H Illustrated

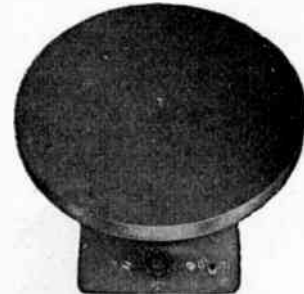
## MODEL LP 743—3 SPEED — 12" TRANSCRIPTION TURNTABLES — MODEL LP 12—2 SPEED

Here are the outstanding values for the discriminating buyer who seeks a quality three speed or two speed turntable, at a moderate price. The LP-743 and the LP-12 meet the growing demand for a good turntable which is priced between deluxe models and ordinary phono motors. Designed and dimensioned for easy replacement of obsolete motors in average consoles.

### SPECIFICATIONS:

- NOISE LEVEL:** 30 db below average recording level.
- TURNTABLE:** Lathe-turned and balanced. Made of laboratory tested aluminum casting.
- MOTOR:** Induction type, 4-pole. Designed for smooth, quiet, vibration-free operation, fitted with a Lamitex motor pulley.
- SHAFT:** Turntable shaft hardened, ground and polished.
- SPEED CHANGES:** Instantaneous speed shift with finger-tip control.
- FINISH:** Grey hammertone.
- DIMENSIONS:** L.: 12"; W.: 15"; H.: 1  $\frac{1}{2}$ " above motor panel; 5" below motor panel. Weight: 10 lbs.

Model	Speeds	Net Price
LP-743	78 - 45 - 33 $\frac{1}{3}$	\$49.95
LP-12	78 - 33 $\frac{1}{3}$	39.95



LP-743 Illustrated

## A C C E S S O R I E S

### LEADSCREWS

Specify "Inside Out" or "Outside In" by letters IO or OI after part number.

Lines Per In.	For Model M-5	Net Price	For Model M-5S	Net Price
105	M-105	\$26.25	MS-105	\$37.50
120	M-120	26.25	MS-120	37.50
135	M-135	26.25	MS-135	37.50
*210	M-210	36.25	MS-210*	47.50
	<b>Model M-12</b>		<b>Model M-16</b>	
108-I.O.	M12-108	17.95	M16-108	22.95
120	M12-120	17.95	M16-120	22.95
144	M12-144	17.95	M16-144	22.95
*192	M12-192	17.95	M16-192*	27.95

\*Micro-Groove.

No.	Net Price	
P-11	Portable case for 16" recording table and cutting mechanism, constructed of heavy plywood reinforced with a steel band, built to withstand rough usage. . . . .	\$59.00
C-7	Console cabinet, with record drawer for storing 100 transcriptions, beautifully finished in metallic grey. 4 adjustable screw jacks. Built-in electrical outlets. Motorboard cutout for instantaneous mounting of Models "V" and "G" Turntables. Ventilated compartment for self-contained amplifier. Can be had with Blank Motor Board. . . . .	\$119.95



# REK-O-KUT COMPANY INC.

WORLD'S MOST POPULAR LINE OF RECORDERS AND TRANSCRIPTION EQUIPMENT



MODEL  
RP-43C  
(Recitalist) Net  
**\$179<sup>95</sup>**

## Recitalist A PORTABLE, 3-SPEED, HIGH FIDELITY PHONOGRAPH FOR MUSICIANS, SCHOOLS AND ADVERTISING AGENCIES

- for authentic music reproduction
- for absolute tonal balance
- for a pleasing blend of brilliant highs with natural bass.

The REK-O-KUT Recitalist is the only full-range, three (3) speed portable phonograph that balances the response characteristics of amplifier, speaker and speaker enclosure. By carefully compensating the natural resonances of these three components, undesirable reverberations are eliminated.

Whether the Recitalist is played for hundreds in an auditorium (with volume raised) or for you alone, while relaxing in the comfort of your living room (with volume greatly subdued) — you will feel the animated presence of the artists evoked for an enchanting and realistic visit.

The POLYPHONIC SELECTOR, an engineering feature exclusive with REK-O-KUT, maintains tonal balance and equalization for the particular selection being played on any type of record, whether it be a standard pressing, high fidelity broadcast transcription, or long playing micro-groove — of American or foreign make.

The Recitalist is a "flexible" instrument. A microphone input enables "mixing" of live music or voice, simultaneously with a recording being played on phono . . . or, as a high fidelity public address system. By connecting an FM or AM tuner in the radio input, the Recitalist becomes a superb broadcast amplifier.

### FEATURES

**TURNTABLE:** 12" cast aluminum, lathe turned with shaft hardened and ground to micro finish.

**MOTOR:** Constant speed, 4-pole, fitted with REK-O-KUT's exclusive lamitex motor pulley ground concentric to the motor.

**SPEEDS:** 78, 45 and 33 1/2 with instantaneous selection.

**DRIVE:** Inside rim. Idlers completely disengaged from motor and turntable when in neutral.

**SPEAKER:** 8" PM type, built to our exacting specifications with 6.8 ounce Alnico V magnet. Mounted in detachable cover of the case.

**AMPLIFIER:** Frequency response is controlled by Polyphonic Selector.

Position No. 1: Uniform within 1 db from 50 to 15,000 cycles.

Position No. 2: Bass up 4 db at 100 cycles, treble uniform above 5,000 cycles.

Position No. 3: Bass up 6 db at 100 cycles, treble uniform above 5,000 cycles.

Position No. 4: Uniform from 50 to 8,000 cycles, increasingly sharp cut-off, 14 db down at 10,000 cycles.

**PICKUP:** 16" with dual stylus cartridge. Plays up to 16" broadcast transcriptions, standard commercial pressings and micro-groove records.

**POWER OUTPUT:** 10 watts at less than 8% total harmonic distortion.

**INPUT CHANNELS:** Three. High impedance microphone; radio, crystal phono-pickup.

**INPUT GAIN:** Microphone, 120 db; Phono-pickup, 80 db; Radio 80 db.

**OUTPUT IMPEDANCE:** 6-8 ohms at speaker jack.

**NOISE LEVEL:** More than 50 db below rated output with all controls set at maximum.

**CONTROLS:** Microphone gain; radio-phono fader; Polyphonic Selector.

**TUBE COMPLEMENT:** (2) 6SL7; (2) 6V6GT; (1) 5Y3GT.

**POWER INPUT:** 70 watts.

**CASE:** Sturdy plywood, covered with rich grey leatherette.

**DIMENSIONS:** 17" wide, 9 1/2" high, 21 1/4" deep. Closed.

**WEIGHT:** 88 lbs.



(Illustrated)  
Model P-43C

**CONSTRUCTION:** Same as Recitalist less amplifier and speaker.

**DIMENSIONS:** 16 1/2" wide, 16 3/4" long, 7 1/4" high—closed.

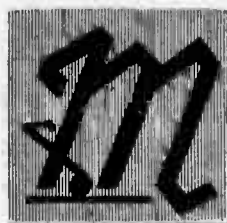
**WEIGHT:** 19 lbs., packed.

### 3-SPEED RECORD PLAYER

For Smooth, Quiet, Wow-Free Reproduction

The quality instrument of the playback field. Can be attached to any amplifier, sound projector, radio or TV set. You can duplicate faithfully, your favorite records by dubbing into ANY type of recorder . . . wire, tape or disc.

Model		Net Price
P-43C	3-Speed, 16" Dual Crystal Pickup.....	\$84.95
P-43M	3-Speed, 16" Dual Variable Reluctance Pickup....	89.95
P-42C	78-88 1/2, 16" Dual Crystal Pickup.....	74.95
P-42M	78-88 1/2, 16" Dual Variable Reluctance Pickup..	79.95
C-43	Case only .....	17.95



# MAGNECORDER

## HIGH FIDELITY MAGNETIC TAPE RECORDING EQUIPMENT

WORLD'S MOST WIDELY USED PROFESSIONAL TAPE RECORDER!

- ★ BROADCASTING    ★ BUSINESS    ★ CHURCH
- ★ MOTION PICTURES    ★ RECORDING STUDIOS

### BASIC RECORDING MECHANISM MODEL PT6-A

Full Frequency Response • Low Distortion  
Portable or for Rack Mount • Economical



#### SPECIFICATIONS

- Recording Speeds: 15 inches/sec., or 7½ inches/sec. interchangeable. Quick change capstans.
- Rewind Speed: Full 7½-inch reel rewound in approx. 40 seconds.
- Frequency Response: At 15 inches/sec. from below 40 cps to 15 kc ± 2 db. At 7½ inches/sec. 40 cps to 7600 cps when used with proper equalizer.
- Motors: Synchronous 117 v. 60-cycle AC motor provides constant speed drive for recording and playback. Shaded pole motor provides high speed rewind.
- Record-Reproduce Head: Magnecorder RT-61 plug-in type.
- Erase Head: Magnecorder ET-18 plug-in type.
- Flutter: Max. 0.3%.
- Mechanical Drive: Positive idler speed reduction system.
- Power Requirements: 117 volts 60-cycle single phase AC, 70 watts.
- PT6-A Case: 18" L x 8" W x 15½" D. Finish: Black Grain Leatherette.

PT6-A (with case)	\$278.00 Net
PT6-AX (without case)	262.00 Net
<b>WITH HI-FORWARD CUEING SPEED</b>	
PT6-AH (with case)	\$294.00 Net
PT6-AXH (without case)	278.00 Net

- Panel: Magnecorder grey hammered finish. 7" H x 17" W.
- Bias Oscillator: Built in. Uses single 12AU7 tube. 6.3 at .3 amps and 300 v at 40 ma must be supplied from external source.
- Connections: All power connections for motors and 12AU7 are made to Jones plug. Audio connections to Cannon socket.

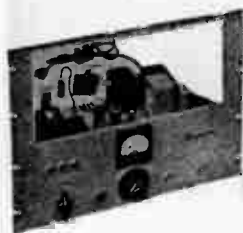
### MAGNECORDER AMPLIFIERS FOR USE WITH ABOVE MAGNECORDER PT6-A

#### STANDARD SPECIFICATIONS

- Frequency Response: ± 2 db from 50 to 15,000 cps at a tape speed of 15 inches/sec., and ± 2 db from 50 to 7500 cps at 7½ inches/sec. when plug-in recorder equalizer for the specific speed is used. Amplifier alone ± 2 db 50 to 15,000 cps.
- Harmonic Distortion: Total generated in record-playback cycle, including tape and recording head, 2.0%.
- Volume Level Meter: Std. 3" square V.U. meter, Scale A.
- Power Requirements: 117 v, 60-cycle Single Phase AC, 60 watts.
- Panel: Magnecorder grey hammered finish.
- Outputs: + 6 dbm, 600 ohms balanced. (Recording output is equalized signal developing approx. 1 ma in Magnecorder RT-61 recording head used in PT6-A.)
- Inputs: Three independently mixed low-level microphone channels 30/50 ohms; also, high impedance bridging input.
- Mixer: Individual low impedance controls (2 db per step) on each microphone input. Master gain control (2 db per step).
- Indicator Lights: Colored target lights indicate selector switch position.
- Monitor System: Small built-in loudspeaker with separate power tube and volume control.
- Headphone Jack: Jack for headphone monitoring.
- Tubes: PT6-P: 1-12AX7, 2-12AU7. PT6-PS: 1-6V6, 1-6X4.
- Cases: 18" L x 8" W x 16½" D. Finish: Black Grain Leatherette.



**MULTI-PURPOSE AMPLIFIER PT6-P ... \$462.00**  
With 3 Low-Level Input Microphone Channels **NET**



### RACK AMPLIFIER PT6-R ... \$383.00

Shown with  
PT6-A  
Installed

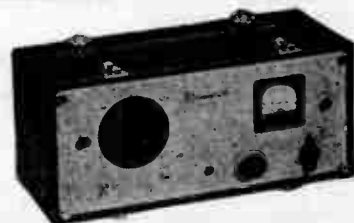


- Inputs: 600-ohm balanced; high impedance bridging.
- Output: + 6 dbm, 600 ohms balanced. (Recording output is equalized signal developing approx. 1 ma in Magnecorder RT-61 recording head used in PT6-A.)
- Gain Control: Single, 2 db per step.
- Switching: Three-position switch selects "Record," "Listen" or "Amplifier."
- Indicator Lights: Colored target lights indicate selector switch position.
- Monitor: Jack on front panel provides for headphone monitoring.
- Dimensions: Std. 19" relay rack panel 14" H. x 12½" deep. Has cut-out for mounting PT6-A recording mechanism in face of panel.

- Inputs: One low level, low impedance microphone. High level input: 100,000 ohms, unbalanced.
- Output: Line output, + 6 dbm at 600 ohms balanced from terminal strip. Power output, 10 watts, at 4 or 16 ohms.
- Switching: Three-position switch selects "Record," "Listen" or "Amplifier" operation. Inserts proper characteristics for record or playback and removes all equalization for use as a 10-watt audio or P.A. amplifier.
- Monitor System: Built-in 5" P.M. loudspeaker with on-off switch.

### PT6-J with 10-Watt Audio Amplifier \$221.50 NET

Single Low-Level Low  
Impedance Microphone  
Input.



**PT6-A AND PT6-J ALSO SOLD AS PORTABLE COMBINATION: ORDER PT6-JA \$499.50**





# Magnecord

## HIGH FIDELITY MAGNETIC TAPE EQUIPMENT

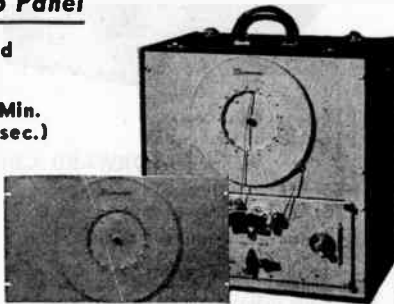
WORLD'S MOST WIDELY USED PROFESSIONAL TAPE RECORDER!

### Greater Flexibility WITH MAGNECORD ACCESSORIES

#### Continuous Loop Panel

Eliminates Rewind to Replay Tapes  
2 Seconds to 15 Min.  
Long (7½" per sec.)

**PT6-EL**  
**\$64.50 NET**  
(Panel Unit Only)



The Magnecord PT6-EL Panel accommodates messages from 2 seconds long (30") to 15 minutes long (600 ft.) on tape in an endless loop. This permits the continuous replaying of music and commercial messages without rewinding. Panel is finished in gray hammerloid and is 19" x 10½" high. The stationary storage reel is equipped with precision ball-bearings over which the tape passes inside the reel—out through the center, and down the normal tape path of the Magne recorder Mechanism PT6-A.

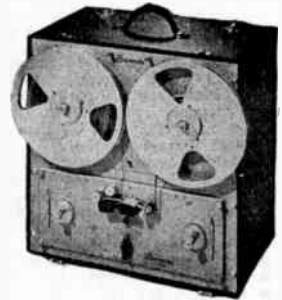
PT6-H Rack Panel (8¾" x 19" rack panel). For rack mounting one PT6-AX. Does not include knurled thumb screws for mounting in the PT6-AX. These come with the PT6-AX. Each . \$7.00 Net

#### LONG-PLAYING MECHANISM

**PT6-MA**

**\$431.00 NET**

Includes Spooling Mechanism, PT6-AX Basic Unit, Mounting Panel and Case



PT6-MA. This combination of the PT6-M auxiliary spooling mechanism and the PT6-AX is normally used for rack mounting but in this combination the units are mounted in a PT6-H panel in a carrying case which affords a portable mechanism with long-playing capacity. May be used with either the PT6-P or PT6-J amplifiers. Case size: 20½" high x 20" wide x 15" deep. Weight: approximately 50 lbs. Includes all the features of the PT6-Recorder mechanism described above plus the auxiliary spooling mechanism which increases the playing time by a factor of 2. Adapter hubs for using 10½" NAB spools included. \$431.00 Net

PT6-M Auxiliary Spooling Mechanism (10½" x 19" rack panel). For increasing playing time of PT6-R/PT6-AX combination by a factor of 2. Action controlled by PT6-AX switching when connected to and operated with PT6-R. Does not include empty 10½" NAB reels. Each . . . . . \$128.00 Net

#### 3 AND 4 CHANNEL INPUT MIXERS



**PT6-IM3 . . . . . \$67.50 Net**  
**PT6-IM4 . . . . . 74.00 Net**

These Mixers plug into the mike input of the PT6-J Amplifier, and make possible the simultaneous mixing of 3 or 4 30/50-ohm microphones. Either model may be permanently mounted inside the PT6-J case. Master gain on the amplifier acts as over-all control on the mixer. Controls are 2 db per step, ladder-type attenuators calibrated in db. Specify PT6-IM3 for 3-channel mixer . . . PT6-IM4 for 4 channels.

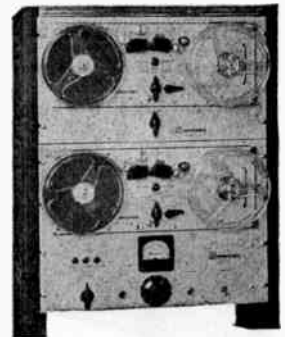
#### OTHER MAGNECORD ACCESSORIES

PT6-S Portable 12-Volt D.C. Power Supply (Made to Order). Contains 36-ampere, 12-volt airplane-type battery, Genemotor, frequency meter and control for 117-V, 60-cycle A.C. output. Will run PT6-A/PT6-P combination for approximately 1 hour. In portable carrying case. Each . . . . . \$251.00 Net

PT6-Q Monitor Head Strip (1¾" x 19" rack panel). For use with PT6-AX/PT6-R combination. To furnish immediate monitoring of recording. Mounts above PT6-R panel. (Has playback head and tape guide rollers). Includes head connector plug but no monitor amplifier included. Each . . . . . \$43.00 Net

#### CONTINUOUS RECORDING COMBINATION (RACK MOUNT)

**\$975.00 NET**



With the addition of a PT6-HT, rack panel and throwover switch, an additional PT6-AH can be used with the PT6-AH and PT6-R combination to provide continuous recording or playback. Another amplifier is not necessary for the additional PT6-AH (Hi-Speed Forward).

#### FOR CONTINUOUS RECORDING IN THE FIELD

Using the PT6-P or PT6-J Amplifiers, the PT6-T Throwover Switch and Adapter Plug, is available to make possible the use of two PT6-A portable mechanisms with only one amplifier.  
PT6-T. Each . . . . . \$32.00 Net

PT6-HT Rack Panel and Throwover Switch. For rack mounting a second PT6-AX with the PT6-AX/PT6-R combination and providing selective switching between either PT6-AX and the PT6-R amplifier for continuous recording. Does not include knurled thumb screws for mounting the PT6-AX. These come with the PT6-AX Each . . . . . \$36.00 Net



# PICKERING HIGH QUALITY AUDIO COMPONENTS FOR RECORD REPRODUCTION



## THE PICKERING CARTRIDGE

There is a Pickering Cartridge Reproducer for every record playing and transcription use . . . Professional, Laboratory and Home Phonograph.



**Models D-120M, S-120M, D-140S and S-140S**, with diamond or sapphire stylus, are without equal; they produce the finest quality reproduction of

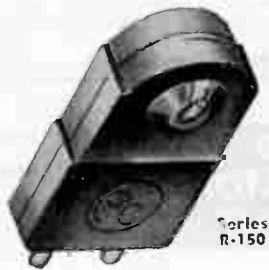
lateral recordings; they are the choice of professional audio engineers.

MODELS D-120M AND S-120M are for playing standard records and transcriptions requiring 2.5 mil styli. MODELS D-140S AND S-140S are for long playing, microgroove records; 33 1/3 and 45 RPM.

**PICKERING CARTRIDGES  
ARE UNCONDITIONALLY  
GUARANTEED**

**Model R-150**, featuring a replaceable diamond or sapphire stylus is specifically designed to produce optimum quality record response with standard home record playing phonographs. The R-150 is designed for 78 RPM shellac records. The high frequency response is attenuated by mechanical means above 8000 cycles.

All Pickering Cartridges will fit practically any arm made for a standard pickup. Their ingenious "Keystone Clip" mounting permits adaptation to a wide variety of arm shapes and sizes; also permits adjustment of the stylus position for minimum tracking error. Special adapter-clips are available for Webster-Chicago and Garrard changers.



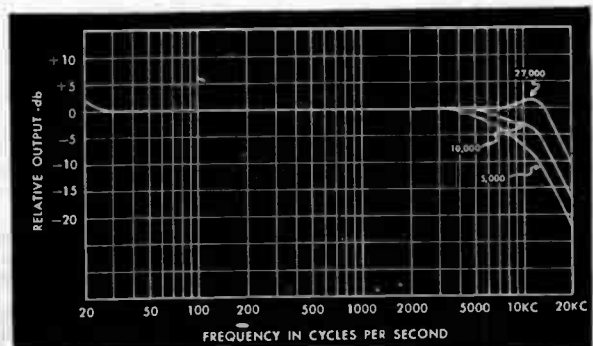
**Pickering  
& Company, Inc.**

**Oceanside, Long Island, N. Y.**

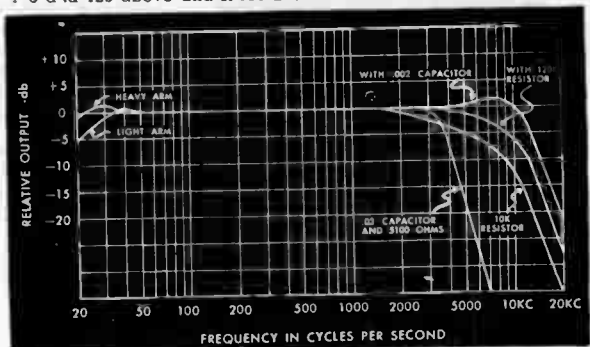
- Model S-120M** w.th .0027" Sapphire stylus . . . . . List price **\$16.50**
- Model D-120M** with .0025" Diamond stylus . . . . . List price **\$41.50**
- Model S-140S** with .001" Sapphire stylus for long-playing MICROGROOVE recordings . . . . . List price **\$25.00**
- Model D-140S** with .001" Diamond stylus for long-playing MICROGROOVE recordings . . . . . List price **\$60.00**
- Model R-150** without stylus for home phonographs . . . . . List Price **\$16.50**

### Styli for Model R-150 Cartridge Reproducer

- S-20** — .002" Sapphire . . . . . List price **\$4.00**
- S-25** — .0025" Sapphire . . . . . List price **\$4.00**
- S-30** — .003" Sapphire . . . . . List price **\$4.00**
- D-20** — .002" Diamond . . . . . List price **\$25.00**
- D-25** — .0025" Diamond . . . . . List price **\$25.00**
- D-30** — .003" Diamond . . . . . List price **\$25.00**



The frequency response characteristics with various load impedance values are shown in the accompanying curves. Series 120 and 140 above and R-150 below.



With the exception of the stylus point, all Pickering Cartridges are covered by an unconditional guarantee, provided the cartridge has not been opened nor subjected to extraordinary abuse. Every Pickering Cartridge, before leaving the factory, is carefully tested for **FREQUENCY RESPONSE, WAVEFORM DISTORTION, OUTPUT LEVEL, TRACKING PRESSURE**, and in addition, optical inspection of the stylus polish and shape, mechanical inspection of moving parts and electrical inspection of the pickup coil are made on each unit. Reports from users reveal absolute stability, amazing ruggedness and complete insensitivity to the effects of temperature and humidity.

# PICKERING HIGH QUALITY AUDIO COMPONENTS

## PREAMPLIFIER MODEL 130H

EQUALIZES THE BASS RESPONSE OF RECORDS AND TRANSCRIPTIONS AND PROVIDES THE NECESSARY GAIN FOR HIGH-QUALITY MAGNETIC PICKUPS.

The Pickering 130H Preamplifier is designed to operate with any high-quality amplifier having a high impedance input. It is self-powered, operates from the 115 volt AC line, and is installed by simply plugging in.

Model 130H is unique in its accuracy of equalization, being superior to most broadcast station equipment in this respect. Further, the intermodulation and harmonic distortion is lower than good engineering practice requires in professional equipment.

The 130H Preamplifier represents the most advanced design ever achieved in phonograph preamplifiers, and like all Pickering Audio Equipment, symbolizes maximum performance.



### TECHNICAL SPECIFICATIONS

FREQUENCY RESPONSE: Within 2 db from 40—20,000 cps. Compensates for 6 db per octave loss below 500 cps. . . . OUTPUT: High impedance. 2 volts average from phonograph records. (For 500/600 ohm output at -10 dbm use Pickering 600G transformer, available as accessory equipment.) . . . DISTORTION: Not more than 0.2 percent intermodulation at normal output level. Not more than 0.4 percent intermodulation at +10 db over normal level. Not more than 1.7 percent intermodulation at +20 db over normal level. . . . HUM LEVEL: -56 db below maximum signal. . . . INSTALLATION: Unit furnished with 6 ft. approved cord which can be connected to wall socket or amplifier. Input socket—standard type; matching plug furnished with unit. Output—terminal strip. Rubber shock mounts provided. . . . DIMENSIONS AND WEIGHTS: Size of preamplifier: 8½ inches long, 5½ inches deep and 4½ inches high. Weight: 2 lbs. 10 oz.

List Price, less tubes

\$31.25



## RECORD COMPENSATOR MODEL 132E

Provides the flexibility required to properly equalize for the different recording characteristics used by various record manufacturers.

The Pickering Record Compensator permits proper equalization of the amplifier system to produce optimum reproduction of individual records; because all linear circuit elements are used it has no inherent distortion. This Compensator permits each individual record to offer all of its quality without compromise . . . permits getting the maximum use out of scratched and worn records. Its six positions correctly equalize for all of the established recording characteristics including microgroove and standard records, domestic and foreign.

The Pickering Record Compensator is a most important addition to any record player equipped with an amplifier system having a high gain preamplifier, such as the Pickering 130H. It is easily installed, and like all Pickering Audio Equipment, symbolizes maximum performance.

### SWITCH POSITIONS

- 1—EUROPEAN RECORDS: This group covers HMV, DECCA FFRR, TELEFUNKEN etc., and American pressings of European recordings 300 cycle turnover . . . 2—VICTOR 45: For all 45 RPM records and Victor LP records . . . 3—VICTOR 78: For 78 RPM records. 500 cycle turnover . . . 4—COLUMBIA-CAPITOL: This position is for most domestic records, including Decca, MGM and Capitol LP records . . . 5—MICROGROOVE LP: For Columbia 33½ RPM microgroove recordings . . . 6—NOISY RECORDS: This position permits playing of old, noisy records with objectionable hiss removed.

**Pickering  
& Company, Inc.**

### TECHNICAL SPECIFICATIONS

OUTPUT LEVEL: To feed into high-gain amplifier which has 6 db per octave rise below 500 cycles per second . . . INSTALLATION: Unit can be mounted in any position (on panels up to ½" thick) by means of threaded bushing. Switch shaft is ¼" long. Since no power is required to operate the Record Compensator only a single connection has to be made to a suitable preamplifier. Input connection—standard socket. Matching plug furnished with unit. Maximum distance between record compensator and preamplifier input 20 inches, cable supplied . . . DIMENSIONS AND WEIGHT: Size of unit: 1¾ x 2", by 2½" overall, less switch shaft. Weight: 6½ oz.

List Price . . . \$16.50

Oceanside, Long Island, N. Y.



# ... FOR RECORD REPRODUCTION



## PICKUP ARM — MODEL 190

The only arm capable of

Optimum Performance on both Microgroove and Standard Records.

Much distortion in playing records can be caused by an inadequate pickup arm, regardless of how good the cartridge. The most common causes of distortion inherent in the operation of conventional arms are poor tracking and excessive record and stylus wear. These undesirable qualities are a result of improper lateral and vertical moments of inertia and an incorrect relationship between the two. Further, many arms cause tracking error which creates needless distortion.

The Pickering 190 Pickup Arm is designed to overcome the disadvantages of all conventional arms, the shortcomings of which have been severely accentuated by the advent of LP microgroove records. Extensive investigation by Pickering engineers disclosed that reproducer arms which perform well on 78 RPM phonograph records and standard transcriptions will not necessarily produce good results on LP microgroove records. In fact no commercially available arm was found which would meet all of the requirements for this type of service.

The 190 Pickup Arm embodies all the features determined as significant and important to enable a high-quality cartridge to meet the stringent requirements for playing LP records without distortion and free of record and stylus wear: 1—The ratio of vertical-to-lateral moment of inertia is as low as possible . . . 2—The vertical mass has been minimized in order to track any record without imposing extra vertical load on grooves. It plays badly warped records just as well as flat ones . . . 3—There is no spurious arm resonance at any frequency . . . 4—Pivot

friction is lower than 3 gram centimeters and the bearings are rugged and trouble-free . . . 5—The arm is statically balanced about the vertical axis to eliminate tendency to jump grooves when subjected to bumping or jarring . . . 6—Offset head reduces tracking error to less than plus or minus 2½" . . . 7—Stylus point is protected against contact with anything but the record grooves. It cannot strike the turntable mat or center-pin. It plays all size records up to 17¼" O.D. In addition to these important design considerations, the 190 Pickup Arm features: Sensitive tracking force adjustment . . . height adjustment for turntables from ½" to 2" high . . . one-hole mounting and self-contained levelling screws . . . plug-in cartridge holder . . . magnetic arm rest . . . stylus point completely visible for starting and cueing records . . . 16¾" long.

List Price . . . \$40.00

Pickering Cartridges used with the Model 190 Arm require 50% less vertical tracking force than is required when using conventional arms.

## THE ONLY LOUDSPEAKER WITH ACOUSTICALLY ADJUSTABLE BASS RESPONSE . . . LOW-COST . . . HIGH-QUALITY . . . WITH SMOOTH WIDE-RANGE RESPONSE AND LOW DISTORTION . . . IT SATISFIES THE MUSICAL EAR.

## LOUDSPEAKER MODEL 180L

The Pickering 180L Loudspeaker grew out of the realization that most loudspeakers of the wide-range type produce unmusical disturbances, whereas the restricted-range speakers to which sensitive listeners turn for relief destroy most of the character of the sound. Furthermore, other high-quality loudspeakers are expensive, and either compromise acoustical design for the sake of appearance or ignore appearance to achieve acoustical performance.

There are no compromises in the Pickering 180L Loudspeaker; the use of different principles result in a design which fulfills all acoustic requirements . . . in a cabinet style which harmonizes with any interior decoration and occupies less floor space than any other loudspeaker. It is designed to produce wide-range, low distortion sound at ear level. This is an important factor in achieving realism and musical satisfaction which can never be approached by loudspeakers located near the floor.

### TECHNICAL SPECIFICATIONS

PHYSICAL DIMENSIONS: 48" high, 10" wide, 10" deep . . . FINISH: Walnut, mahogany or limed oak. Mahogany is standard finish . . . ACOUSTICAL CHARACTERISTICS: Smooth response from 45 to 12000 cps. Covers 90° included angle in horizontal plane and 60° included angle in vertical plane when placed in a corner . . . ELECTRICAL CHARACTERISTICS: 8 ohm nominal impedance; should be operated from a feedback or triode amplifier. Will handle 10 watts continuous power.

List Price . . . \$149.50



**Pickering  
& Company, Inc.**

Oceanside, Long Island, N. Y.



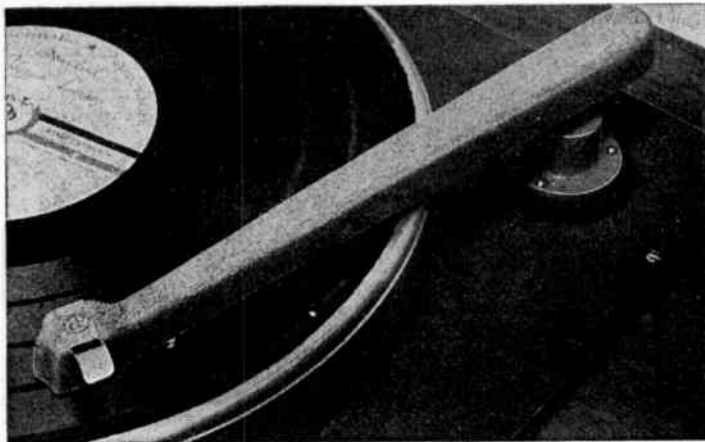
# PICKERING HIGH QUALITY AUDIO COMPONENTS FOR RECORD REPRODUCTION



## THE PICKERING PICKUP

### MODEL 161 WITH DIAMOND STYLUS

**Model 161 with Diamond Stylus.** A professional magnetic type reproducer for lateral-cut phonograph records and transcriptions. It has virtually no intermodulation nor harmonic distortion at any amplitude capable of being recorded. There is no frequency discrimination over the range from 30 to 15,000 cycles per second and is completely free from any vertical response. Tracking pressure is 18 grams. Diamond stylus has .0025 inch radius for use with all 88 to 136 lines-per-inch recordings. Withstands practically any shock through unique guard into which stylus recedes. Arm is supported on frictionless hardened steel alloy cone pivots for perfect tracking, even on badly warped discs. Diamond stylus life is approximately 5,000 hours, at least ten times the life of sapphire. Overall length of arm, 14 3/4"; height, 2 3/4". Supplied with arm rest. Shipping weight, 2 lbs.



MODEL 161L—500/600 ohms output, —40 db. . . . . List price \$165.00  
MODEL 161M—10,000 ohms output, .05 volt. . . . . List price \$165.00

### MODEL 165L EQUALIZER-AMPLIFIER



**Model 165L Equalizer-Amplifier** Designed for use with Model 161M Pickup. Five-position equalizer switch compensates for American, European, N.A.B., Orthacoustic, etc., record characteristics. Supplied with output impedance of 30, 250, 500 and 600 ohms at "0" db. Uses 6SJ7, 6SN7 and 6J5 tubes. Size 5 x 6 x 10 inches. Requires 250 volts D.C. at 15 ma. and 6.3 volts A.C. or D.C. at 1.2 Amperes. Supplied with tubes and input cable. Shipping weight, 9 lbs.

List price \$200.00

### MODEL 163A EQUALIZER

**Model 163A Equalizer** A loss-type equalizing network for use with the Model 161M Pickup. It is designed to compensate for most of the commonly encountered record characteristics. Position 1 — flat high frequency response to over 15,000 cps. Low frequency rise to give full compensation from 500 to 40 cycles. Position 2 — flat high frequency response. Low frequency response approximately 5 db. below position 1. Position 3 — for NAB or Orthacoustic transcriptions. Position 4 — Low frequencies same as position 2. High frequencies sharply attenuated to reduce surface noise. Attenuation starts at 4000 cycles. Position 5 — low frequencies same as position 1. High frequencies same as position 4. 250/600 ohms output. —60 db. Size 3 1/2 x 3 3/4 x 5 inches. Shipping weight 2 lbs.



List price \$70.00

## EACH PICKERING PICKUP AND CARTRIDGE IS UNCONDITIONALLY GUARANTEED

Pickering reproducing equipment, with the exception of the stylus point, is fully covered by an unconditional guarantee provided that the units have not been tampered with, nor subjected to extraordinary abuse. Replacement styli can be installed in cartridge reproducers for the following net charges: .0027" sapphire — \$2.50; sapphire stylus of special radius \$5.00; diamond stylus \$15.00. Replacement diamond styli for the Model 161 transcription pickup can be installed for \$22.50 net. Unless otherwise specified diamond styli will be supplied with a radius of .0025". Other diamond stylus radii can be supplied at no additional charge. All returns should be sent direct to factory at Oceanside, L.I., N. Y.

Equipment returned to the laboratory for service will be reshipped within 24 hours after receipt. All frequency ranges indicated above denote region of response flat within 2 db. Voltage and db levels (6 mw/500 ohms) based on 10 cm/sec. stylus velocity.

**Pickering Reproducing Equipment is Sold by All Principal Distributors**

# Pickering & Company Inc.

Audio Laboratories, Oceanside, Long Island, New York

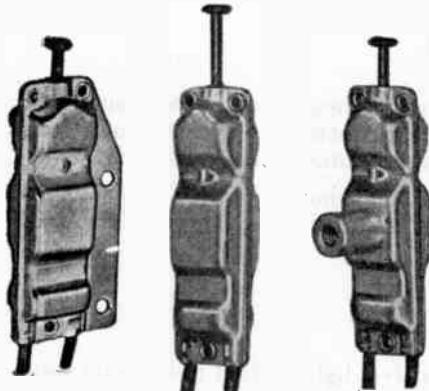
# WEBSTER ELECTRIC



Webster Electric Company, Racine, Wisconsin. Established 1909

## CRYSTAL CARTRIDGES

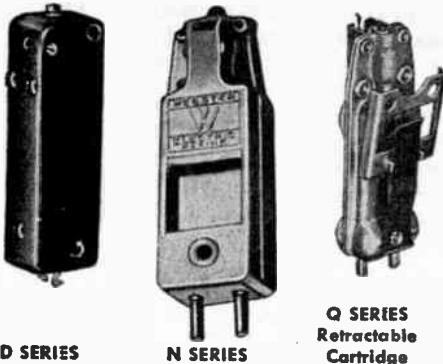
FEATHERIDE CARTRIDGES are manufactured to exceptionally high standards of precision. Each cartridge is individually tested and packed in Dri-Pack containers before release, assuring flawless performance and maximum customer satisfaction. The range of characteristics described below permits replacement of crystal cartridges in record-players, record changers and radio-phonograph combinations. See your radio parts jobber or write direct for bulletin RC156A Replacement Chart.



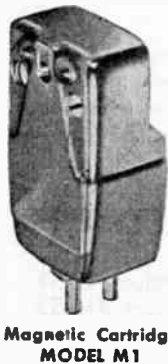
Flange Mount MODEL C2    Clamp Mount MODEL C3    Stud Mount MODEL C4



For 78 RPM Records MODELS F1, F2, F7    For 33 1/3-45 Records MODEL F13    For 33 1/3-45-78 Records MODELS F15, F16



D SERIES    N SERIES    Q SERIES Retractable Cartridge



Magnetic Cartridge MODEL M1



A SERIES Plays 33 1/3-45-78 RPM Records

### CHARACTERISTICS AND LIST PRICE

Model No.	Average Output at 1000 C. P. S. Volts		Minimum Tracking Pressure R. P. M.		Approx. Cut-off frequency C.P.S.	Net Weight Gram	Needle Information (See Note)	List Price
	R.P.M. 33 1/3-45	R.P.M. 78	Gram 33 1/3-45	Gram 78				
<b>DUAL PURPOSE CARTRIDGE MICROGROOVE AND STANDARD (33 1/3, 45 AND 78 R.P.M.) AND MICROGROOVE (33 1/3 AND 45 R.P.M.) ONLY.</b>								
A1	.75	1.00	7.0	7.0	5,000	5.0	1MS & 3MS	\$8.50
A1M	.75	1.00	7.0	7.0	5,000	5.0	1MO & 3MO	7.50
A2	.75	—	7.0	—	5,000	5.0	1MS	6.50
A2M	.75	—	7.0	—	5,000	5.0	1MO	6.00
A7-1	.75	1.00	7.0	7.0	5,000	5.0	1MS & 3MS	9.00
A7M1	.75	1.00	7.0	7.0	5,000	5.0	1MO & 3MO	8.00
A9-1	.75	1.00	7.0	7.0	5,000	5.0	2MS	6.50
A9M1	.75	1.00	7.0	7.0	5,000	5.0	2MO	6.00
F13M	.85	—	7.0	—	6,000	8.0	1MO	6.50
F14-2	.85	1.70	7.0	21	6,000	10	1-DO	8.50
F15M	.85	1.70	7.0	21	6,000	10	1MO & 3MO	8.50
F16M	.75	1.00	8.0	8.0	6,000	10	1MO & 3MO	8.50
Q3	2.0	3.0	12	12	5,000	23	2MO	7.50
<b>STANDARD (78 RPM) ONLY</b>								
A3	—	1.00	—	.25	5,000	5.0	3MS	6.50
A3M	—	1.00	—	.25	5,000	5.0	3MO	6.00
C2	—	3.40	—	2.50	5,000	16	—	4.50
C3	—	3.40	—	2.50	5,000	16	—	4.50
C4	—	2.50	—	2.50	5,000	16	—	4.50
C8	—	4.00	—	1.50	5,000	16	—	4.50
D2	—	2.50	—	2.50	5,000	25	—	5.40
D3	—	.70	—	1.25	6,000	25	—	5.55
F1P	—	1.25	—	1.00	5,000	8.0	—	5.00
F2P	—	1.25	—	1.00	5,000	18	—	5.00
F7P	—	1.20	—	1.00	8,000	18	3MO	7.50
F7P 2	—	2.25	—	1.50	5,000	8.0	3MO	6.50
M1	—	.10	—	1.00	5,000	26	3MO	7.50
N6P	—	1.50	—	1.00	5,500	25	—	5.25
N7P	—	.60	—	.75	10,000	25	—	6.50
N10P	—	2.50	—	1.25	5,000	25	—	5.25
Q1	—	1.00	—	1.00	8,000	23	3MO	8.50
Q2	—	2.00	—	1.50	6,000	23	3MO	7.50
W. S.	—	1.50	—	.75	5,500	25	3MO	5.50
		or						
		4.00						
YN2	—	.70	—	1.00	5,000	25	—	10.75

Note: 1MS = 1 Mil Sapphire tip; 1 MO = 1 Mil Osmium tip; 2 MO = 2 Mil Osmium tip; 3 MS = 3 Mil Sapphire tip; 3 MO = 3 Mil Osmium tip; DO = Dual tip 1 Mil Osmium and 3 Mil Osmium. Symbols indicate number of needles furnished. See your jobber or write direct for price bulletin on Featheride needles.

#### NEW REPLACE-ALL (W.S. SERIES) FOR ALL 78 RPM SERVICE JOBS



1. Three-terminal construction provides either 1.5 volts or 4.0 volts at 3/4 oz. tracking pressure.
2. Installs in any 1/2" standard RMA tone arm.
3. Replaceable osmium needle.
4. Dri-Seal Crystal sealed against moisture.

# WEBSTER ELECTRIC

Webster Electric Company, Racine, Wisconsin. Established 1909

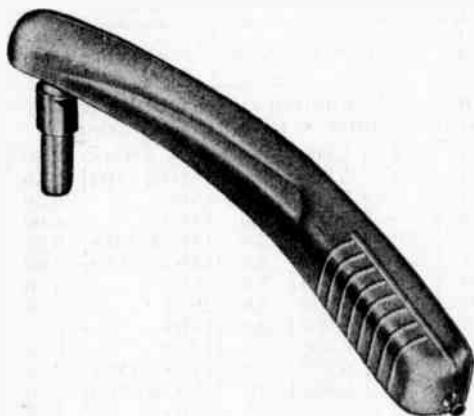
## TONE ARMS

**F**eatheride tone arms are manufactured to the same exceptionally high standards of precision as the Featheride crystal cartridge.

Featheride tone arms are provided to play any of the current speeds, 33 $\frac{1}{3}$ , 45 or 78 R. P. M., and will accommodate 7", 10" or 12" records.

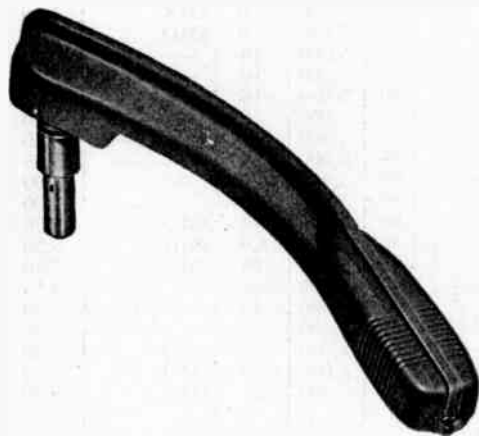
The precision matched components assure you that resonance, distortion and microphonic feed back have been reduced to the minimum.

All models are single hole mounting and are supplied with arm rests and mounting base brackets.



**T Series:** A competitive, light weight low-inertia tone arm constructed of stamped aluminum, attractively fluted and internally braced. This arm will give you long carefree service.

Model T1AC8.....	List Price \$6.50
Model TQ2.....	List Price \$9.75
Model TIQ3.....	List Price \$9.75



**V Series:** A new tone arm which combines beautiful styling with exceptional rigidity, incorporating a high lateral ridge as an integral feature of design. This tone arm will enhance the appearance and quality of any record player.

Model VF7.....	List Price \$11.50
Model VQ1.....	List Price \$12.50
Model VIQ3.....	List Price \$11.50
Model VM1.....	List Price \$11.50
Model VQ2.....	List Price \$11.50



**V Series Twist Arm:** The beautiful styling and exceptional rigidity combined with the new twist feature allows this arm to be used on any application where it is desirable to play all three popular speeds (33 $\frac{1}{3}$ , 45 or 78 R. P. M.) records. This arm is built to give years of service and may be used to advantage when converting present equipment to modern three speed use.

Model V1A8.....	List Price \$12.50
Model V1F16.....	List Price \$12.50

# Audax

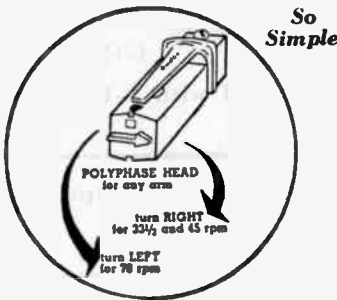
Pickups for facsimile Reproduction

*"The Standard by Which Others Are Judged and Valued"*

## POLYPHASE reproducers

In One Single Magnetic Unit —  
33-1/3 - 45 - 78 rpm

Not since the advent of the electronic pickup back in 1926 — has there been such astonished praise and complete acceptance of a new reproducer.



### POLYPHASE LIST PRICES

L-6 Head, for lateral records.....	\$29.50
L-6 with 12" arm (*10").....	\$43.00
L-6 with 16" arm (*13-15/16").....	\$57.00
L-6 with STUDIO arm (*18½").....	\$82.00
<hr/>	
R-2 Head for lateral records.....	\$19.50
R-2 with 12" arm (*10").....	\$33.00
R-2 with 16" arm (*13-15/16").....	\$47.00
<hr/>	
VL-9 a Vertical-Lateral Head.....	\$ 65.00
VL-9 with 16" arm (*13-15/16").....	\$ 83.00
VL-9 with STUDIO arm (*18½").....	\$115.00

(\*Center of turntable to rear end of arm)

Replacement Stylus—Sapphire.....	\$ 3.50
Diamond Stylus.....	\$25.00
Diamond Stylus for Microgroove.....	\$35.00
Diamond Stylus for Vertical.....	\$35.00
<hr/>	
Magnetic Shield (if required).....	\$ 1.00
Record Changer-connector plug.....	\$ 4.50



L-6 with 12" arm (16" same style)

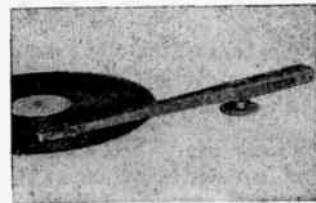
- Sapphire styli (or diamond) replaceable individually, as simply as you replaced steel needles.
- Output about 20 m.v.
- Response 20 to over 10,000 cps.
- Needle-talk at vanishing point.
- Tracking phenomenal.
- EAR QUALITY, par excellence.
- High or low impedance.
- Flexible plug-in connectors.
- In order to meet the extremely high compliance of POLYPHASE, the new AUDAX arms are sensitized to the nth degree.

Models Available for Record Changers

## TUNED-RIBBON reproducers

for microgroove discs  
or standard or vertical discs

- Wide range performance.
- Point-pressure about 18 grams.
- Replaceable Sapphire Stylus (or diamond).
- Output about -25 db.
- High or low impedance.
- Flexible plug-in connectors.
- Ear Quality excellent.



Studio Arm

There is an AUDAX pick-up for every purse and every purpose . . . each superlative in its own field and price group.

### TUNED-RIBBON LIST PRICES

No. 81 Head for all lateral records.....	\$116.00
No. 81 with STUDIO arm (*18½").....	\$165.00

No. 73 Head for lateral records.....	\$ 60.70
No. 73 with 12" Arm (*10").....	\$ 66.50
No. 73 with 16" Arm (*13-15/16").....	\$ 83.00
No. 73 with STUDIO arm (*18½").....	\$115.00

No. 61 Head for lateral records.....	\$ 43.90
No. 61 with 12" Arm (*10").....	\$ 49.75
No. 61 with 16" Arm (*13-15/16").....	\$ 64.75

No. 99 Head for lateral records.....	\$146.00
No. 99 with STUDIO arm (*18½").....	\$195.00

(\*Center of turntable to rear end of arm)

Replacement Stylus—SAPPHIRE.....	\$ 3.00
Replacement Stylus—DIAMOND.....	\$ 25.00



# Audax

## Cutters for facsimile Recording

*"The Standard by Which Others Are Judged and Valued"*

### AUDAX PICKUPS using conventional needles

**L-18**—For records up to 16". FLAT within about  $\pm 3$  db to approximately 6500 cycles, with slightly rising bass curve. Point-pressure about  $1\frac{7}{8}$  oz. Output approximately -20 db. High or low impedance. Black and silver finish. Turntable center to rear end of arm 12-7/16". List \$49.00



L-17 (L-18 same style)

**L-17**—For records up to 12". Performance identical with L-18 above. Turntable center to rear end of arm 9-1/16". List Price \$35.00

**STUDIO EQUALIZER No. 8199** — 200 to 500 ohms output — affording NAB (LP), Orthacoustic, Vertical, 78 RPM — and filter positions. List Price \$83.00

## PICKUP-ARMS

The new AUDAX arms are sensitized to the *nth* degree in order to meet the extremely high compliance of POLYPHASE . . . important factors in the continued distortionless, silent-surface of your records.

These new AUDAX arms have no peer—regardless of price. They are available with or without reproducer heads.

	List Price
No. 12 arm . . . . . to 12" records . . . . .	\$19.50
No. 16 arm . . . . . to 16" records . . . . .	\$29.50
STUDIO arm . . . . . to 16" records . . . . .	\$65.00

## HIGH FIDELITY CUTTERS

**AUDAX CUTTER H-5** — Substantially FLAT to 10,000 cycles, Distortion about 1.2% at 1000 cycles. Fully modulates groove with input of about 18 db with 96 lines. Impedances up to 500 ohms.

List Price \$185.00

**AUDAX CUTTER H-4** — Substantially FLAT to 8,000 cycles. Distortion about 1.7% at 1000 cycles. Fully modulates groove with input of about 16 db with 96 lines. Impedances up to 500 ohms.

List Price \$125.00

**AUDAX CUTTER H-3** — Substantially FLAT to about 7500 cycles. Distortion about 2.1% at 1000 cycles. Fully modulates groove with input of about 18 db with 96 lines. Impedances up to 4000 ohms.

List Price \$83.00



*AUDAX Cutters are readily interchangeable on most recording machines*

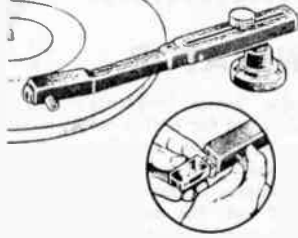
*AUDAX instruments are NOT affected by temperature or atmospheric changes*

**CLARKSTAN**  
CORPORATION

MANUFACTURERS OF  
FINE ELECTRONICS & INDUSTRIAL EQUIP.

**BEST FOR LP MICROGROOVE  
AND STANDARD DISCS**

**MODEL 213** — The new Clarkstan 12" record arm offers the best in standard disc and microgroove reproduction. Heavy aluminum casting eliminates audible resonance point. The slide-in cartridge holder allows instantaneous mounting of all types of standard cartridges. Silver-plated, spring loaded plungers maintain positive electrical contact without necessity of soldering. Quick acting weight adjustment is positive and accurate for change from microgroove to standard records. Arm has adjustable height, fits all standard turntables. Vertical roller bearing and thrust ball bearing minimize cramping — no mechanical bias on the pickup. Finish grey wrinkle and brushed chrome. Net price arm only \$18.90.



**MODEL 212** — 16" Transcription arm. This high quality professional arm is built on same proven engineering principles as the above Model 213. Has slide-in cartridge holder and quick adjusting weight for accurate needle force. Accommodates both LP microgroove and standard records — any size up to 17" diameter. Overall length of arm is 14 3/4". Has adjustable height for all turntable conditions. Vertical roller bearings and ball thrust bearings eliminate mechanical bias on the pickup. Attractively finished in grey wrinkle and brushed chrome. Net price arm only \$19.90.

**MODEL 212G** — Same arm slotted to accommodate G.E. cartridge RPX-050. Net price arm only \$19.90.

**MODEL 213G** — Same arm slotted to accommodate G.E. cartridge RPX-050. Net price arm only \$18.90.

**WIDE RANGE RV PICK-UP**

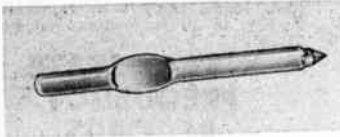
**MODEL 201** — Clarkstan RV wide range variable reluctance cartridge for best reproduction of LP microgroove and standard records. Instantaneously replaceable and interchangeable needles. Frequency response to above 12,000 cps. Needle force 5-7 grams for LP microgroove, as low as 10 grams for conventional records. Output 60 millivolts. High impedance — 5-50-250 and 500 ohm models available. 1/2" mounting centers. Supplied with sapphire stylus. Specify .0012" for LP microgroove or .0030" tip radius for standard records. .0015", .0022", .0025" tip radii also available. Can also be supplied with diamond stylus of any of above tip radii. Net price (cartridge only with standard sapphire stylus) \$15.00.



**SAPPHIRE & DIAMOND STYLII**

Extra stylii (tubular shank) for Clarkstan RV Pickup:

Sapphire No.	Diamond No.	Ball Point Radius
251.10	254.10	.0012"
251.15	254.15	.0015"
251.2	254.2	.0022"
251.5	254.5	.0025"
251.3	254.3	.003"

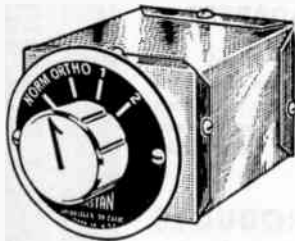


Net Price Sapphire stylus only \$2.40.

Diamond stylus only \$18.00.

**FOUR-POSITION  
EQUALIZER**

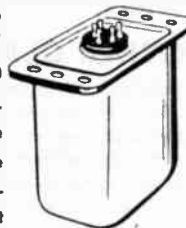
**MODEL 221** — Clarkstan 4-position equalizer. A high impedance input and output — adjustable network, without amplification, for use with magnetic pickups. Has one position for correct NAB or orthacaustic roll-off required for finest reproduction of LP microgroove records. Also two positions for sharp high frequency cutoff for standard records. Will give proper response when used in normal high gain microphone input of amplifier. Turn-over frequency is 500 cps. Panel mounting on 2 1/2" centers, 3/8" diameter center hole. Furnished with Clarkstan hand machined superfine knob and attractive dial plate. Net price \$12.60.



(All prices subject to change without notice.)

**PICK UP-TO-LINE  
TRANSFORMER**

**MODEL 225** — Clarkstan pick-up-to-line transformer. A high quality transformer to be used wherever the signal is to be introduced to 30/50, 200/250, 500/600 ohm lines. May also be used as a line to grid transformer. Net price \$19.50.



**MICROSCOPE  
GROOVE ANALYZER**



**MODEL 231** — Low-cost, medium power microscope with built-in light and reticle. Designed expressly for the phono record recorder. The illumination is optimum for observing the condition of the groove and the number of lines per inch and depth of cut. Has flat field, excellent optics — can be used with glasses (eyepoint is 1" above top). Both 20x and 40x provided in one microscope. Reticle for direct measurement by .0020". Complete with lacquered wooden carrying case with sliding cover. Focusing is accomplished by means of friction sliding tube. Is easy and positive. Net price \$22.50.



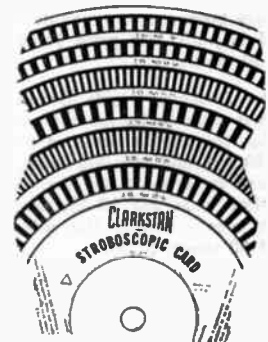
**NEEDLE FORCE  
GAUGE**

**MODEL 301** — Clarkstan Gauge for phono needle force. This professional device has a calibrated dial to read in grams for use with LP microgroove records. Easily read to less than 1 gram. Also has scale in ounces. Net price \$1.50.

**STROBOSCOPIC  
CARD**

FOR 33 1/3 RPM  
45 RPM AND 78 RPM

**MODEL 610** — New stroboscopic card for checking turntable speed of microgroove and standard records. Includes replaceable punch-out for new 1 1/2" center hole for 45 RPM records. Printed on quality enameled stock. Net price \$0.15.



**CLARKSTAN**  
CORP.

Los Angeles 64, California

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MANUFACTURERS OF  
FINE ELECTRONICS & INDUSTRIAL EQUIP.

## REPRODUCTION AND TEST EQUIPMENT

### AUDIO SWEEP FREQUENCY GENERATOR



networks, wire recorders, film recorders, broadcast and aircraft receivers, motion picture sound equipment, loud speakers, microphones, transformers, filters, pickups, pre-amplifiers and cutting heads. Net price Model 125 complete with scanning disc \$165.00.

MODEL 130.1 — Scanning disc, 40 cps. to 10 kc. disc only. \$12.20 net price.

MODEL 130.2 — Scanning disc 40 cps. to 7500 cps. disc only. \$12.20 net price.

### GRAPH SHEETS

Four extremely useful tools for the audio engineer. These specially designed graph sheets save endless time:

601 — Reactance-Freq. Graph. The elements of reactance, capacitance, and inductance all related in one simple graph. Net price \$1.00 pad of 50 sheets.

602 — dbm — Impedance Graph. The four variables: power (W), voltage (V), current (ma), and Impedance or Resistance ( $\Omega$ ) are acquainted in such a manner that given any two of these electrical quantities the other two may be graphically determined. A decibel scale in dbm (decibels below or above 1 milliwatt) parallels the power ordinate. Net price \$1.00 pad of 50 sheets.

603 — Attenuator-Design Graph. In this universal pad design chart here presented for the first time, the resistance in ohms for each branch of the pad may be determined by multiplying the values found at the lower horizontal scale by the impedance of the line into which the pad is to be inserted. It covers balanced and unbalanced T and Pi pads. Net price \$1.00 pad of 50 sheets.

604 — Semi-log, 3-cycle Graph. Designed expressly for the audio range. It has the unique virtue of starting at 20 cps. and covering three logarithmic cycles to 20,000 cps. On the vertical scale are 10 divisions per inch over 7 inches. Net price per pad 50 sheets \$1.00.

(All prices subject to change without notice.)

MODEL 125 — Clarkstan Audio Sweep Frequency Generator. A Clarkstan development for testing the behavior of audio and other alternating electrical apparatus with respect to frequency and associated phenomena. The generator operates in the audio range from 40 cps. to 10,000 cps. The complete frequency range is regularly recurrent so that the signal may be used in conjunction with an oscilloscope. The sweep frequency is governed 20 synchronizing pulses per second. Provides an instantaneous evaluation of the performance of amplifiers at various settings of tone control and pick-up correction



### CLARKSTAN KNOBS

Attractive one-piece knobs accurately machined from DURAL add the professional appearance to control panels. All knobs have fluted sides and have screw-type mounting for round or flat shaft\*

to fit standard  $\frac{1}{8}$ " shafts. Back of all knobs recessed  $\frac{3}{16}$ " dia. by  $\frac{5}{64}$ " deep to accommodate panel bushing nut.

Model	Knob Dia.	Height	Price
275-1A*	1"	5/8"	.87
275-1B*	1"	5/8"	.90
275-12A*	1 1/4"	2 1/32"	.93
275-12B*	1 1/4"	2 1/32"	.96
275-2A*	1 1/2"	1 1/16"	.96
275-2B*	1 1/2"	1 1/16"	.99
275-3A*	2"	3/4"	1.50
275-3B*	2"	3/4"	1.53
275-4A*	2 1/2"	1 3/16"	1.74
275-4B*	2 1/2"	1 3/16"	1.77

\* A designates plain face. B designates with pointer.



### 4-PRONG ADAPTER

214 — 4-pronged Adapter adapts Western Electric #5A arm — for use with magnetic and other types of pickups having standard half-inch mounting holes. Optimum stylus force for any type pickup may be easily compensated for by adjustable weights within the adaptor. Net price \$19.20.

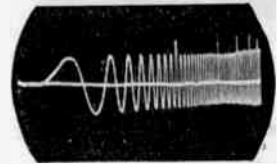
### OTHER CLARKSTAN PRODUCTS

Industrial Microscope for inspection work in shops, laboratories and research.

Alpha Counter for qualitative and quantitative analysis of radio active ores, such as thorium, uranium, etc.

Rubber Hardness Gauge to measure the Shore hardness of all rubber and other elastomers. Accurately measures rubber hardness within any of the commercial manufacturing tolerances.

### AUDIO SWEEP FREQUENCY TRANSCRIPTION



The Sweep Frequency Transcription is a new method of making instantaneous frequency response runs. It has been designed with all correction factors included in the original recording, therefore, no charts or graphs are needed. Before the development of the Sweep Frequency Transcription, the tone record was used for frequency response measurements on playback systems. This method was both time consuming and laborious. If adjustments were required, a new frequency run was required after each adjustment. Now all that is needed is a cathode ray oscilloscope and a Sweep Frequency Transcription for instantaneous response measurements. Only a few quick adjustments on the equalizer circuits and the job is done. For complete frequency checking of all broadcast transmission equipment and components for production testing of phonographic reproducers, filter networks, audio amplifiers, preamplifiers, tone control systems and components.

MODEL 1000A — 12" Vinylite transcription, 78 RPM, 70 to 10,000 cps. recorded flat  $\pm 1$  db. Net price \$6.60.

MODEL 1000D — 12" Vinylite transcription, 78 RPM, 5 KC to 15 KC, recorded flat  $\pm 1$  db. Net price \$6.60.

MODEL 100A — 16" Vinylite transcription, 33-1/3 RPM, 60 to 10,000 cps. recorded with NAB curve. Net price \$10.00.

MODEL 102M — 12" Vinylite, for micro-groove testing, 33-1/3 RPM, 70 to 10,000 cps. modified NAB recording. Net price \$6.60.

MODEL 115 — audio sweep frequency film, 35mm, positive print, variable density, 10 ft. lengths. Net price \$10.00.

MODEL 116 — audio sweep frequency film, 35mm, positive print, variable area, in 10 ft. lengths. Net price \$10.00.

MODEL 117 — audio sweep frequency film, 16mm, positive print, variable density, in 10 ft. lengths. Net price \$10.00.

### STEADY STATE FREQUENCY RECORDS



A series of new test records in which all the information for the engineer is annotated for both the cutting and reproduction. In recording these records harmonic distortion was kept to the lowest possible figure. Extreme care throughout the processing cycle was used. Careful reproduction, using the latest techniques insures exact duplication of the original recordings in each pressing.

MODEL 2000S — Steady State Frequency Record, 12" Vinylite, 78.26 RPM 50 cps. to 10,000 cps. flat recording (1 side only). Net price \$3.90.

MODELS 2001S & 2002S — Microgroove Steady State Frequency Record, 12" Vinylite, 33-1/3 RPM, 50 cps. to 10,000 cps. one side NAB, other side flat recording. Net price \$3.90.

MODEL 101 — Intermodulation Test Record, 12" Vinylite, 33-1/3 RPM, standard groove, 1/4 ratio, 7 KC and 100 cps. (1 side only). Net price \$3.90.

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Los Angeles 64, California



**MODEL 178**



**MODEL 357-1**



**MODEL 66**



**MODEL 100**



**MODEL 100-27**



**MODEL 100-55**



**The accepted name for the ultimate in record changer chassis and magnetic recorders**

**MODEL 178**

Can be used with any radio. Push-button controls. Meter type recording level indicator. Contains built-in pre-amplifier, inter-stage amplifier, oscillator, power supply. Comes with microphone, spool of wire. Size: 11" x 11 3/8" x 5 1/8". Shipping weight: 22 lbs.

List Price.....\$107.50  
West of the Rockies..... 109.75

**MODEL 100**

Model 100 is the latest development in three-speed three-size record players. Plays full inch stack of 7-, 10-, or 12-inch records at 33 1/3, 45 or 78 rpm. Velocity-Trip mechanism. Dimensions: 13" x 13 1/2"; 5 1/8" above mainplate, 3 1/8" below. Shipping weight: 14 lbs.

List Price.....\$46.50  
West of the Rockies..... 47.75

**MODEL 755**

Plays up to eight 7-inch records automatically 33 1/3 or 45 rpm. Quick 3-second change cycle. Balanced tone arm. Velocity-Trip. Plays through radio or amplifier. Shipping weight: 9 lbs.

List Price.....\$29.75  
West of the Rockies..... 30.50

**MODEL 357-1**

This deluxe three-speed changer features the famous basic changer Model 356 enclosed in a base for semi-portable use. The Model 357-1 incorporates all the finest features of changer design. Plays through radio or amplifier. Velocity-Trip mechanism. Shipping weight: 16 lbs.

List Price.....\$58.25  
West of the Rockies..... 60.00

**MODEL 100-27**

Model 100-27 is the same as the 100 but equipped with interchangeable tone-arm plug-in heads for G. E. Variable Reluctance Pick-ups. (Pick-ups not furnished).

List Price.....\$37.75  
West of the Rockies..... 39.00

**MODEL 100-64**

Model 100-64 is a portable three-speed, three-size record changer in luggage-type, attractive carrying case. Plays full inch stack of 7-, 10-, or 12-inch records at 33 1/3, 45 or 78 rpm. Velocity-Trip mechanism with cover closed. Ready to play by attaching to amplifier, radio-phono input or to wire recorder. Shipping weight: 24 lbs.

List Price.....\$63.25  
West of the Rockies..... 65.25

**MODEL 66**

Portable amplifier to use with record changer or wire recorder. Attractive burgundy leatherette over wood. 8-watt push-pull amplifier with 8-inch Alnico speaker. Shipping weight: 22 lbs.

List Price.....\$58.50  
West of the Rockies..... 59.95

**MODEL 100-55**

Model 100-55 is the same as Model 100 but is enclosed on an attractive metal base for semi-portable use. Plays full inch stack of 7-, 10-, or 12-inch records at 33 1/3, 45 or 78 rpm. Velocity-Trip mechanism. Shipping weight: 18 lbs.

List Price.....\$51.00  
West of the Rockies..... 52.50





**The accepted name for the ultimate in record changer chassis and magnetic recorders**

**MODEL 356-1**

This automatic three-speed changer plays a full one-inch stack of 7-, 10- or 12-inch records—33 $\frac{1}{3}$ , 45 or 78 rpm. Velocity-Trip mechanism. Tone arm comes to rest after last record has been played, repeats last seven-inch record until attended. Dimensions: 14 $\frac{1}{4}$ " x 14" x 8 $\frac{3}{4}$ ". Shipping weight: 18 lbs.

List Price.....\$51.75  
West of the Rockies..... 53.25



**MODEL 356-27**

Same as 356-1 but enclosed on metal base for semi-portable use and equipped with interchangeable tone-arm plug-in heads for G.E. Variable Reluctance Pick-ups. (Pick-ups not supplied.)

List Price.....\$43.00  
West of the Rockies..... 44.50



**MODEL 156-1**

The Model 156-1 is the single-speed version of the Model 356-1 (illustrated above). Plays a full one-inch stack of standard 78 rpm. records. Dimensions: 14" x 14" x 9". Shipping weight: 18 lbs.

List Price.....\$38.50  
West of the Rockies..... 39.75



**MODEL 156-27**

Same as 156-1 but equipped for General Electric Variable Reluctance Pick-up. (Pick-ups not supplied.)

List Price.....\$41.50  
West of the Rockies..... 43.00



**MODEL 77**

The little "giant" in the new seven-inch field. Plays up to eight 7-inch records—33 $\frac{1}{3}$  or 45 rpm. Quick 3-second change cycle. Balanced tone arm. Velocity-Trip mechanism. Dimensions: 7 $\frac{1}{8}$ " x 10 $\frac{1}{8}$ " x 6 $\frac{3}{4}$ ". Shipping weight: 7 lbs.

List Price.....\$27.50  
West of the Rockies..... 28.00



**WEBSTER-CHICAGO**

# GARRARD



# GARRARD



GARRARD

*Triumph*

MODEL RC-80

**THE WORLD'S  
FINEST 3 SPEED  
RECORD CHANGER**

**Plays All Records: Fully Automatic With Automatic Stop!**

**The lowest price at which any Garrard Changer  
has ever been sold!**

Introducing several ingenious innovations in 3 speed record changers, the RC-80, nevertheless, retains the watch-like custom construction which has made Garrard acclaimed by music lovers the world over.

The Garrard "Triumph" plays all types of records now in use, 33-1/3 - 45 - 78 rpm, regardless of diameter (7"-10"-12") or size of spindle hole. Once records are placed on the player and simple settings made, action is completely automatic, with unfailing switch-off at the end of the last record. Tone arm is automatically returned to rest position.

The new changer is surprisingly simple in operation. It has one turntable, one tone arm, one set of switches. But over-simplification has been avoided in the interests of quality and standards of performance. Certain features previously found in Garrard instruments have been retained because good basic engineering demands them. For example, record changing is accomplished by the same tried-and-true pusher-type platform mechanism proven best in previous Garrard models.

45 r.p.m. records are played exactly as intended by the manufacturer. A special spindle is provided with each changer to accommodate these records. No "spiders" or artificial inserts are necessary; the pusher platform is not even used.

Any modern type of quality pick-up can be used for standard and micro-groove reproductions. Crystal, magnetic or variable reluctance cartridges can be selected by the customer.

The "Triumph" is heavily built for long, rugged service. It cannot sag or warp. Repairs and adjustments can be made inexpensively on parts which, in most other machines, would require expensive replacement in their entirety.

Minimum cabinet dimensions are 15 1/2" long x 13 1/4" wide x 5 3/4" clearance above and 3 1/2" clearance below the top of motor board.

RC-80 — AC Model Dual voltage motor 100/130 and 200/250 volts, 60 cycles. 50 cycle pulley available. Less cartridge. . . Net Price \$36.80

A triumph of engineering, with every feature tested for finest performance.

<b>PUSHER TYPE PLATFORM:</b>  It always works	<b>TWO INTERCHANGEABLE SPINDLES:</b>  Plays records as intended	<b>HEAVY DRIVE SHAFT:</b>  No wows, no wavers
<b>JEWEL MOUNTED TONE ARM:</b>  Disturbing resonance eliminated	<b>AUTOMATIC STOP:</b>  At end of any type record	<b>TRIPLE SPEED SWITCH:</b>  Simple and easy settings
<b>INTERCHANGEABLE PLUG-IN HEADS:</b>  Your choice of cartridge	<b>HEAVY DUTY SILENT MOTOR:</b> Absolutely no rumble	<b>WEIGHTED TURNTABLE:</b>  Gives flywheel action
<b>MUTING SWITCH:</b> Silence between records	<b>SIMPLE INSTALLATION:</b> Fits former Garrard cut-outs	<b>START-STOP-REJECT LEVER:</b>  Combined and conveniently located

GARRARD SALES CORPORATION

NEW YORK 13, N. Y.

# GARRARD



# GARRARD

## GARRARD MIXER CHANGER DE LUXE

MODEL

# RC-65

FOR 78 R.P.M. ONLY



Model 65/D — AC. Model, Dual Voltage Motor for 110/130 and 200/250 volts, 50/60 cycles; less cartridge.....Net Price \$48.00

Model 65/U — Universal AC-DC Model; 25/60 cycles; 110/130 and 200/250 volts; furnished less cartridge.....Net Price \$57.75

The RC-65 is built to rigid specifications, using superior parts, and is fastidiously machined and assembled to assure trouble-free performance.

A "mixer" changer, the RC-65 accomodates both 10" and 12" records intermixed in any assortment and in any combination. There are no buttons or switches to throw; it is entirely automatic.

Garrard's speed regulated, governor-controlled motor, using a steel governor disc, is fashioned to give powerful and regulated running at all times. The motor runs silently at maximum record loads without vibration, rumble or speed variations and has a positive automatic stop which shuts the motor off after the last record is played and returns arm to rest.

The Garrard RC-65 offers a replaceable pick-up head which can accommodate any of the popular cartridges available.

Minimum cabinet dimensions are 15" wide x 13" deep x 5½" clearance above the unit plate and 4½" clearance below the unit plate.

## GARRARD MULTI-SPEED Transcription MOTOR MODEL 201-V



The Garrard 201-V dual speed motor is offered exactly as produced for the U.S. Navy and the British Admiralty.

The governor-controlled motor operates at any speed between 33-1/3 and 78 rpm with absolute constancy and without waver or rumble. It is ideally suited for use where truly superior reproduction is required. It is constantly variable, governor-controlled.

Because of its extra-heavy rotor, which is slow-running, the resulting torque makes this motor amazingly smooth and silent. In sheer performance, it is the finest we have to offer. It is a self-starting, induction type unit, and is fitted with the patented Garrard Governor to insure perfect regularity.

A unique feature is its "one shot lubrication." The only maintenance required is to sparingly lubricate the main bearings in the gears through the single oiling point, which is located in the top of the center spindle.

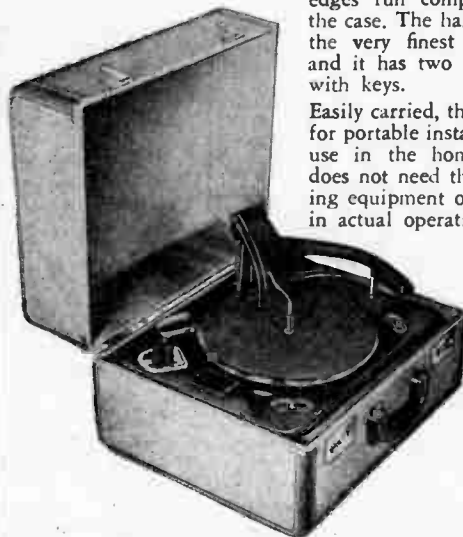
The 201-V is equipped with a Speed Regulator, by means of which a wide range of speeds is possible. It is set on an extension arm so that 16" transcription records can be properly speed controlled.

Model 201-V — Constantly variable, dual voltage; AC-110/130 and 200/250 volts, 40/60 cycles....Net Price \$45.00

## GARRARD CARRYING CASE

This De Luxe unit is fabricated of seasoned wood and covered with a fine parchment-type material. Sewn leather edges run completely around the case. The hardware used is the very finest durable brass and it has two locking snaps, with keys.

Easily carried, this unit is ideal for portable installations or for use in the home where one does not need the record playing equipment out unless it is in actual operation.



Model CC1 — Carrying Case with Motor Board Uncut.  
Net Price \$14.50

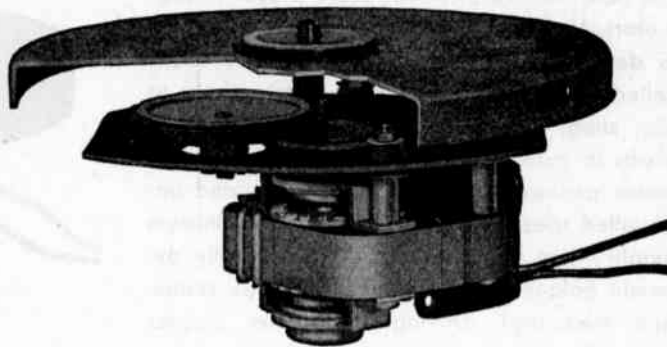
Model CC6 — Carrying Case with Motor Board cut out to accommodate Garrard Model RC-65 or RC-80 Record Changer. . . . .Net Price \$14.50

# alliance PHONOMOTORS

## New 45 r.p.m. Phonomotor for Record Players

The new 45 r.p.m. record player Phonomotor, Model JP45, features a new motor which is designed specifically for this type of application. Exceptional features are quietness, freedom from mechanical vibration, no external fan, decreased height, and excellent speed regulation. On this unit the center disc is permanently fastened to the turntable and is designed for ease of record placement and removal. The unit is furnished with a 6½" O.D. turntable for RCA records with the 1½" diameter center hole.

**NOMINAL RATING**—45 r.p.m. for 5 gram stylus force with 117 volts, 60 cycles, 0.2 amps., and 10 watts input.



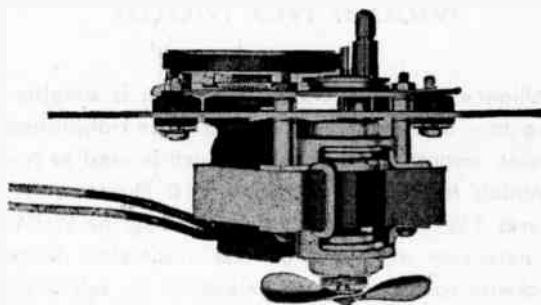
**PHONOMOTOR MODEL JP45**

New 45 r.p.m. record player PHONOMOTOR is designed for ease of record placement and removal.

## New 33⅓ r.p.m. Phonomotor for Record Players

Here are three excellent record player phonomotors, Models MPS8, MPS9, and MPS10, for the 33⅓ r.p.m. long-play Micro-groove records. The idler tires are precision ground to extremely close limits, thus minimizing "wow." In each case the motor drive shaft is ground in its own bearings in order to minimize run-out. As is also the case with the Alliance 45 r.p.m. and 3-speed phonomotors for record players, each turntable bearing is rotary burnished to assure smoothness of operation. These units are furnished with 8", 9", or 10" O.D. turntables for records with conventional center holes.

**NOMINAL RATING**—33⅓ r.p.m. for 5 gram stylus force with 117 volts, 60 cycles, 0.3 amps., and 14½ watts input.



**PHONOMOTOR MODELS MPS8, MPS9, AND MPS10**  
(with 8", 9", and 10" O.D. turntables, respectively).



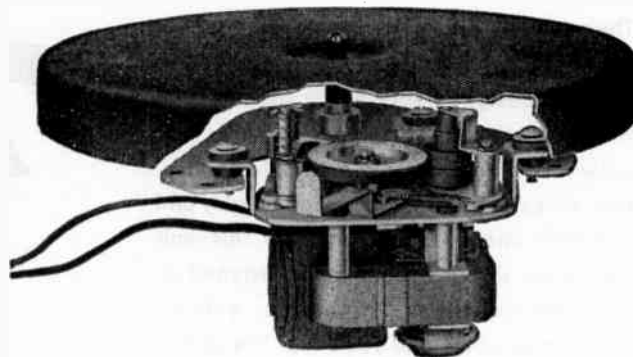
# alliance

## Powr-Pakt MOTORS

### New 3-Speed Phonomotors for Record Players

Drive  $33\frac{1}{3}$ , 45, and 78.26 r.p.m. Records

The new Alliance 3-speed record player Phonomotors, Models JPT8 and JPT9, are so advanced in design that mechanical operation is unexcelled! There are no rubber bands or belts to slip, snap, distort, or stretch . . . no needle shafts to indent tires under stall. A totally new motor assures minimum rumble, hum, and unequalled speed regulation! Motor has minimum height — no external fan — electronically dynamic balanced rotor — new vibration reduction mounting! Driving mechanism assures unimpaired performance at all speeds — has fewer moving parts! These units are furnished with 8" or 9" O.D. turntables designed for records with either the conventional or the RCA  $1\frac{1}{2}$ " diameter center holes. A removable center disc is provided to fit the  $1\frac{1}{2}$ " diameter center holes. This disc is reversible and will go on either way. Its height is designed for ease of record handling.



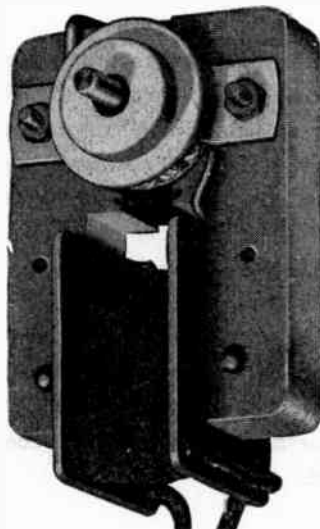
**PHONOMOTOR MODELS JPT 8 AND JPT9**  
(with 8" and 9" O.D. turntables, respectively).

**NOMINAL RATING**— $33\frac{1}{3}$  or 45 r.p.m. for 5 gram stylus force and 78.26 r.p.m. for 10 gram stylus force with 117 volts, 60 cycles, 0.3 amps., and  $14\frac{1}{2}$  watts input.

### Powr-Pakt Model MS Motor

The Alliance Powr-Pakt Model MS motor is suitable for driving toys or other light loads. It is an adaptation of the quiet, smooth running motor which is used to power the Models MPS8, MPS9, and MPS10 Phonomotors. It measures  $3\frac{1}{8}$ " x 2" x  $1\frac{3}{4}$ " not including the  $\frac{7}{16}$ " long shaft extension which has an  $1\frac{1}{4}$ " diameter. Rotation is clockwise facing the shaft extension. Its self aligning bearings are of the porous bronze oilless type.

**NOMINAL RATING**—2800 r.p.m. at full load with 117 volts, 60 cycles, 0.3 amps., and 16 watts input. More detailed specifications are available upon request.



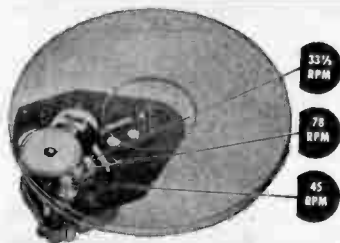
**MOTOR MODEL MS**

# GI GENERAL INDUSTRIES GI

## *Smooth Power* PHONOGRAPH MOTORS, TAPE-DISC RECORDER AND DISC RECORDERS

Suitable for every phonograph instrument where low cost, dependable performance, compactness, light weight and quietness of operation are important considerations. GI phonomotors are even in speed and have ample power to play 10" and 12" records. Fan cooling permits use in partially closed cabinets. Designed to comply with Underwriters' Laboratories' requirements.

### THREE-SPEED PHONOGRAPH MOTOR



**MODEL TS — 45, 78, 33-1/3 R. P. M.**

**115 volts a. c., 60 cycles**

A novel 45-78-33 $\frac{1}{3}$  R.P.M. rim drive, 2-pole motor. Very compact. Employs two identical Neoprene belts for 45 and 33 $\frac{1}{3}$  R.P.M. speeds. 78 R.P.M. speed is obtained direct from rotor shaft. Speed is changed by a simple external lever movement. Specially designed and manufactured to hold wow and rumble to a minimum for excellent reproduction of the new records. Turntable shaft revolves with turntable, and is grooved for turntable clip. Available with 6 $\frac{1}{2}$ ", 8" or 9" turntable, using same mounting plate. A 45 R.P.M. record adaptor and a speed indicator dial are furnished with each motor.

**List Price, \$10.85**

Dimensions: Length—3 $\frac{1}{8}$ "; Width—2 $\frac{1}{4}$ "; Depth—2 $\frac{3}{8}$ " below mounting plate. Furnished complete with turntable and mounting plate ready for installation. Shipping weight—4 lbs.

### DUAL-SPEED PHONOGRAPH MOTORS

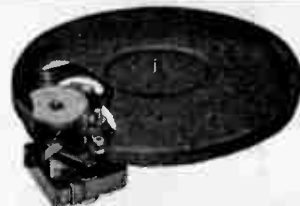
**MODEL DS — 45, 33-1/3 R. P. M.**

**115 volts a. c., 60 cycles**

A novel 45-33 $\frac{1}{3}$  R.P.M. rim drive, 2-pole motor. Very compact. Employs a Neoprene belt for the 33 $\frac{1}{3}$  R.P.M. speed. 45 R.P.M. speed is obtained direct from rotor shaft. Speed is changed by a simple external lever movement. Specially designed and manufactured to hold wow and rumble to a minimum for excellent reproduction of the new records. Turntable shaft revolves with turntable, and is grooved for turntable clip. Available with 6 $\frac{1}{2}$ ", 8" or 9" turntable, using same mounting plate.

**List Price, \$10.75**

Dimensions: Length—3 $\frac{1}{8}$ "; Width—2 $\frac{1}{4}$ "; Depth—2 $\frac{3}{8}$ " below mounting plate. Furnished complete with turntable and mounting plate ready for installation. Shipping weight—4 lbs.



**MODEL DM — 33-1/3, 78 R. P. M. • MODEL DE — 45, 78 R.P.M.**

**115 volts a. c., 60 cycles**

Novel and ingenious rim drive, 2-pole motors. Very compact. Employs a Neoprene belt for slow speeds. 78 R.P.M. speed is obtained direct from rotor shaft. Speed is changed by a simple external lever movement. Specially designed and manufactured to hold wow and rumble to a minimum for excellent reproduction of new records. Turntable shaft revolves with turntable, and is grooved for turntable clip. Available with 9" turntable.

**List Price, \$10.75**

Dimensions: Length—3 $\frac{1}{8}$ "; Width—2 $\frac{1}{4}$ "; Depth—2 $\frac{3}{8}$ " below mounting plate. Furnished complete with 9" turntable and mounting plate ready for installation. Shipping weight—4 lbs.



**MODEL DR — 78, 33-1/3 R. P. M. • MODEL DZ — 78, 45 R. P. M.**

**MODEL DV — 45, 33-1/3 R. P. M.**

**115 volts a. c., 60 cycles**

Deluxe rim drive, 4-pole motors with a simple and positive mechanism for shifting from one speed to the other. Speed change is accomplished by means of an external push-pull lever. An ingenious mechanism raises and lowers the entire idler assembly, disengages the idler wheel from the two-diameter motor shaft and moves the idler wheel from one diameter to the other. At the slow speed the idler wheel engages the small diameter of the motor shaft; at the fast speed it engages the large diameter.

**List Price, \$18.50**

Dimensions: Length—6"; Width—5 $\frac{1}{2}$ "; Depth—2 $\frac{3}{8}$ " below mounting plate. Furnished complete with 10" turntable and mounting plate ready for installation. Shipping weight—6 $\frac{1}{2}$  lbs.



### TAPE, WIRE AND DISC RECORDING MOTORS



Heavy duty 4-pole, shaded pole induction motors.  $\frac{1}{20}$  H.P. Free speed: 1740 R.P.M. Maximum running torque: 12 ounce-inches.

Features include: A locating and locking arrangement for both top and bottom covers which assures high accuracy in alignment of rotor within the stator bore; new air intake; dual cooling fans and self-aligning, oil-impregnated sleeve bearings.

These high torque motors are used in practically all tape, wire and disc recorders now being manufactured.

**List Price, \$12.00**

Dimensions: Length—3 $\frac{3}{8}$ "; Width—3 $\frac{3}{8}$ "; Depth—3" below mounting plate; Shaft diameter— $\frac{1}{8}$ "

**115 volts a. c., 60 cycles**

# GENERAL INDUSTRIES

*Smooth Power* PHONOGRAPH MOTORS,  
TAPE-DISC RECORDER AND DISC RECORDERS

## CONSTANT SPEED ELECTRIC PHONOMOTORS

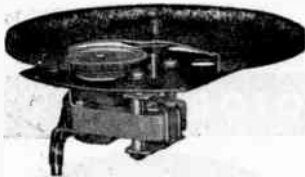


Model MX Model MX-3  
Model MX-45

- MODEL MX** — 78 R. P. M. . . . . List Price, \$7.95  
**MODEL MX3** — 33-1/3 R. P. M. . . . . List Price, 9.15  
**MODEL MX45** — 45 R. P. M. . . . . List Price, 9.15  
 115 volts a. c., 60 cycles

Rim drive, 2-pole motor with novel idler arrangement insuring quiet operation. Motor is also insulated from mounting plate to eliminate vibration. Turntable shaft revolves with turntable, and is grooved for turntable clip. Novel bearing construction insures rigid and permanent alignment of motor shaft. Oilless bearings. Furnished with 9" turntable and complete with mounting plate ready for installation.

Dimensions: Length—3 1/8"; Width—2 1/4"; Depth—2 1/4" below mounting plate.  
 Packed in individual cartons. Shipping weight—4 lbs.

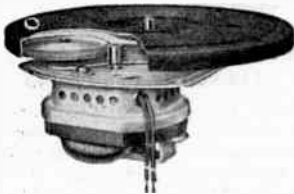


Model LX Model LX-3  
Model LX-45

- MODEL LX** — 78 R. P. M. . . . . List Price, \$6.80  
**MODEL LX3** — 33-1/3 R. P. M. . . . . List Price, 8.00  
**MODEL LX45** — 45 R. P. M. . . . . List Price, 8.00  
 115 volts a. c., 60 cycles

Rim drive, 2-pole motor. Rubber insulated from both mounting plate and turntable for quiet operation. Turntable shaft revolves with turntable, and is grooved for turntable clip. Furnished with 9" turntable and complete with mounting plate ready for installation.

Dimensions: Length—3 1/8"; Width—2"; Depth—2" below mounting plate.  
 Packed in individual cartons. Shipping weight—4 lbs.



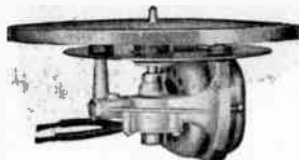
Model RX Model RX-3  
Model RX-45

- MODEL RX** — 78 R. P. M. . . . . List Price, \$10.25  
**MODEL RX3** — 33-1/3 R. P. M. . . . . List Price, 11.95  
**MODEL RX45** — 45 R. P. M. . . . . List Price, 11.95  
 115 volts a. c., 60 cycles

Rim drive, 4-pole motor. Rubber insulated from both mounting plate and turntable for quiet operation. Driving pulley, idler and turntable are positively aligned in one plane for efficient performance. Turntable shaft revolves with turntable and is grooved for turntable clip. Furnished with 9" turntable and complete with mounting plate, ready for installation.

**EXTRA FOR 10" TURNTABLE, 20 CENTS EACH**

Dimensions: Length—4 1/8"; Width—3 3/4"; Depth—2 1/8" below mounting plate.  
 Packed in individual cartons. Shipping weight—5 lbs.



Models CX & CX3

- MODEL CX** — 78 R. P. M. . . . . List Price, \$14.25  
**MODEL CX3** — 33-1/3 R. P. M. . . . . List Price, 16.00  
 115 volts a. c., 60 cycles

Gear drive, 4-pole motor. Fully enclosed, with silent, helical-cut gears running in oil bath within the sealed housing. Patented combination rubber turntable drive sleeve and record centering tip insure mechanical and electrical insulation between turntable and motor. Furnished complete with mounting plate, ready for installation; available with 9" turntable.

**EXTRA FOR 10" TURNTABLE, 30 CENTS EACH**

Dimensions: Length—4 1/4"; Width—4 1/8"; Depth—3 1/8" below mounting plate.  
 Packed in individual cartons. Shipping weight—6 lbs.



Model RM4 Model RM4-3  
Model RM4-45

- MODEL RM4** — 78 R. P. M. . . . . List Price, \$16.50  
**MODEL RM4-3** — 33-1/3 R. P. M. . . . . List Price, 18.30  
**MODEL RM4-45** — 45 R. P. M. . . . . List Price, 18.30  
 115 volts a. c., 60 cycles

Heavy duty, rim drive, 4-pole motor. Rubber insulated from both mounting plate and turntable for exceptionally quiet operation. Turntable shaft revolves with turntable and is grooved for holding clip. Retractable pin in turntable permits playing standard records without adjustment. Efficient performance is assured by positive alignment of driving pulleys, idler and turntable in one plane. Furnished with 10" weighted turntable and complete with mounting plate ready for installation.

Dimensions: Length—8 3/4"; Width—8 3/4"; Depth—2 1/8" below mounting plate.  
 Packed in individual cartons. Shipping weight—9 lbs.

# G GENERAL INDUSTRIES G

## *Smooth Power* PHONOGRAPH MOTORS, TAPE-DISC RECORDER AND DISC RECORDERS

### TAPE-DISC RECORDING ASSEMBLY

#### MODEL 250

115 volts a. c., 60 cycles

List Price, \$79.50

When connected with the proper amplifier, the Model 250 performs the following functions:

- RECORDS TAPE FROM RECORDS
- RECORDS DISCS FROM TAPE
- RECORDS MICROPHONE ON TAPE
- RECORDS RADIO ON DISC
- RECORDS MICROPHONE ON DISCS
- RECORDS RADIO ON TAPE
- PLAYS BACK BOTH TAPE AND DISCS
- PLAYS ANY 78 R.P.M. RECORDS

#### TAPE RECORDING FEATURES:

One hour recording time.  
Dual track.  
Fast forward and reverse.  
Permanent magnet erase head.  
Turntable acts as flywheel, giving constant tape speed.  
Designed for use with 5" reels.  
Tape speed 3¾" per second.  
Designed for use with either plastic or paper base tape.

No tape threading — Merely place tape around turntable — Automatically drops into correct position.  
Due to ingenious clutch and drive mechanism, impossible to throw tape.

Mechanical interlock eliminates any possibility of accidentally erasing tape.

Equipped with a switch for recording head electrical interlock.

Automatically shuts off at end of tape playback.

#### DISC RECORDER AND PLAYBACK FEATURES:

Cuts records up to 10" in diameter at 78 R.P.M.



Plays 78 R.P.M. recorded discs and all 78 R.P.M. commercial records. When pivot of arm is lifted it snaps into recording position, engages lead screw, and insures proper angle for cutting stylus.

Merely push arm down for playback.

Simple to interchange cutting stylus and playback needle.

Dimensions: Width 12 ½", Length 17 ½", Depth below mounting plate 4". Equipped with G.I. smooth power, dynamically balanced four-pole motor. Net weight 10 ½ lbs. Shipping weight 11 lbs.

### HOME RECORDING AND PHONOGRAPH ASSEMBLIES

**MODEL GI-R85L — LP, 78 and 33-1/3 R. P. M.**  
with conversion spring for changing the 33-1/3  
R. P. M. speed to 45 R. P. M.

**MODEL GI-R90L — 78 & 33-1/3 R. P. M. —**  
Standard

115 volts a. c.,  
60 cycles

Model GI-R90L is the standard model which has been in the GI line for several years. It cuts 120 lines per inch, and plays back records with the standard needle pressure.

The Model GI-R85L incorporates a dual purpose pickup cartridge and an excellent and simple adjustment for playing the LP records and standard records. It cuts 160 lines per inch. In a separate envelope is furnished a conversion spring for changing the 33 1/3 R.P.M. speed to 45 R.P.M. with mounting instructions printed thereon.

Both models cut records up to 10" diameter . . . play records up to 12" diameter. To shift motor from one speed to the other, merely turn the speed change dial. Beautiful walnut wood grain on steel base plate. Streamline plastic trim on pickup and cutter arm attractively engraved with legends "Reproducer" and "Recorder". Turntable recessed into well in base plate. Merely lower cutting arm over record disc to start recording. Convenient, depth-of-cut adjustment. Dynamically-balanced, rim drive, 4-pole motor. Compensating switch operated by speed change dial.



**MODEL GI-R85L — LP . . . . . List Price, \$53.50**  
**MODEL GI-R90L — STANDARD . . . . . List Price, 47.50**

Assembly includes dual speed motor; 10" weighted turntable; crystal cutter; crystal pickup; compensation switch; pickup and cutter arm rests; drawn steel base plate with formed down edges.

Above prices include crystal cutter.  
For (M41-10) magnetic cutter add \$2.00 each.

Dimensions: Base plate—15" wide; 11 ½" front to back; height above lower edge of base plate—2 ¾"; depth below lower edge of base plate—3 ¾". Packed in individual cartons. Shipping weight—17 lbs.

#### MASTER JR. SPRING MOTOR

Plays two 10" selections from one winding. Exceptionally quiet and uniform in speed. Turntable is held in place by turntable-holding clip. Furnished with 9" turntable, winding crank and escutcheon; turntable brake; dial and pointer speed regulator; mounting screws

and washers. Dimensions: Length—5 ¾"; Width—4 ¾"; Depth—2 ½" from top surface of casting to bottom.

**MODEL: MASTER JR. — 78 R. P. M. List, \$10.25**  
Single Spring Type. Price includes 9" turntable and parts.

# GENERAL ELECTRIC

## GENERAL ELECTRIC VARIABLE RELUCTANCE CARTRIDGE

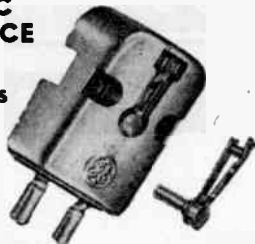
with replaceable stylus

STANDARD RECORDS  
(3 mil tip radius)

Catalogue No. RPX-040

MICRO-GROOVE RECORDS  
(1 mil tip radius)

Catalogue No. RPX-041



Performance engineered at Electronics Park, these cartridges provide record reproduction unsurpassed in quality. Low needle talk and needle scratch. Minimum distortion. Retracting stylus. Low record wear due to flexible suspension and low stylus pressure. Virtually unaffected by normal temperature or humidity variations.

Shipping Weight — 1½ ounces.....List Price \$9.95

Also available in a Professional model (RPX-046) with low impedance to match broadcast equalizers. Furnished less stylus.  
Shipping Weight — 1½ ounces.....List Price \$11.45

### G-E REPLACEMENT STYLI

Catalog Number	Stylus	Tip Radius in inches	List Price
RPJ-001	Sapphire	.008	\$3.50
RPJ-005	Sapphire	.001	3.50
RPJ-006	Sapphire	.0025	3.50
RPJ-002	Diamond	.0025	27.50
RPJ-003	Diamond	.008	27.50
RPJ-004	Diamond	.001	27.50



## GENERAL ELECTRIC TRIPLE PLAY CARTRIDGE

Catalogue No. RPX-050

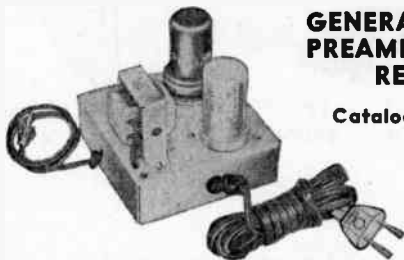
The RPX-050 plays 33½, 45 and 78 RPM records without changing its position in the tone arm. Uniform stylus pressure of 6 to 8 grams for all 3 types of records. This, plus the low mass is valuable in minimizing record wear. Retaining the unexcelled frequency response characteristics of previous G-E Variable Reluctance Cartridges, the RPX-050 is also notable for low needle talk and needle scratch. Output impedance is the same as RPX-040 and RPX-041.

Shipping Weight — 2 ounces.....List Price \$13.95

Replacement Stylus RPJ-010  
(1 mil & 3 mil Sapphire).....List Price 5.95

## GENERAL ELECTRIC PREAMPLIFIER WITH RECTIFIER

Catalog No. UPX-003

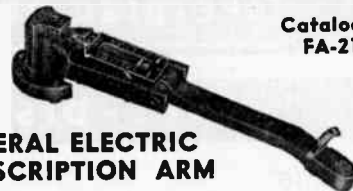


The UPX-003 Phono Pre-amplifier, which operates directly from a 105-125 volt, 50-60 cycle AC power line, is designed for use with the General Electric Variable Reluctance Cartridges. It provides sufficient amplification and the necessary low frequency equalization to enable Variable Reluctance Cartridges to be used with standard receivers and amplifiers.

Shipping Weight — 1½ lbs.....List Price \$15.95

Also available without rectifier as SPX-001, designed to take its power requirements (6.3 volts AC, 100DC) from the receiver or amplifier with which it is used. Leads and jacks provided for attachment to chassis and Variable Reluctance Cartridge.

Shipping Weight — 1 lb.....List Price \$9.90



Catalog No.  
FA-21-A

## GENERAL ELECTRIC TRANSCRIPTION ARM

The General Electric Transcription Arm, designed to mount the G-E Variable Reluctance Cartridges, is for use by those desiring the utmost in quality reproduction of lateral transcriptions and records.

The G-E Transcription Arm is designed for optimum performance of lateral transcription and recordings only. It contains no design compromise such as are necessary if provision for vertical reproduction is also incorporated.

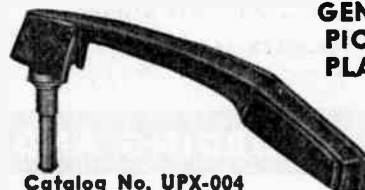
The mass of the transcription arm has been reduced to the ultimate point by careful mechanical design and the use of magnesium alloy for the moving parts. Very low bearing friction in both the lateral and vertical planes is assured by precision, hand-adjusted cone-type bearings.

Shipping Weight — 2½ lbs.

Suggested professional user's price \$41.00

An arm counterweight, Catalog No. RWP-001, is available to adapt the FA-21-A for long-playing records.

Suggested professional user's price \$3.85



## GENERAL ELECTRIC PICKUP FOR LONG PLAYING RECORDS

with the New  
Variable  
Reluctance  
Cartridge

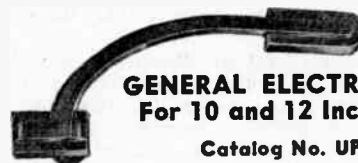
Catalog No. UPX-004

This G-E pickup has been designed specifically for use with long-playing records. The cartridge has a special high-compliance, low-mass stylus arm assembly, and a precision-ground highly-polished sapphire stylus.

To keep the tone arm mass low, the arm has been made as small as possible, and the construction material is a special lightweight alloy.

Smooth lateral movement with a minimum of drag is assured by ball-bearings and a long bearing surface, protected by a dust cover.

Shipping Weight — ½ lb.....List Price \$15.95



## GENERAL ELECTRIC PICKUP For 10 and 12 Inch Records

Catalog No. UPA-004

Especially designed for and equipped with the G-E Variable Reluctance Cartridge, this new pickup is an extremely fine unit for the improvement of record players.

Matched with the Variable Reluctance Cartridge, this product provides excellent performance — with installation simplified and proper balance assured.

It provides the best compromise between minimum tracking error and overall dimensions.

The unit is balanced at the factory to provide 1 oz. stylus pressure and may be adjusted if desired.

Shipping Weight — 1 lb.....List Price \$15.95



# THE RECORDISC CORP.

395 BROADWAY, NEW YORK 13, N. Y., • CABLE ADDRESS: RECORDISC, NEW YORK, N. Y.  
EXPORT DEPT.: ROYAL NATIONAL COMPANY, INC., 89 BROAD STREET, NEW YORK

## WORLD-FAMOUS HOME RECORDING BLANKS

### ORANGE LABEL

Popular composition base disc . . . a party favorite! Heavy and firm, it will take punishment, yet it is coated carefully with our standard RECORDISC surface compound. The acme of amateur transcription blanks.

### PURPLE LABEL

Lightweight aluminum base disc with heavyweight selling power! The lowest-priced high-quality disc with an inexpensive .012 aluminum base, designed for amateurs desiring semi-professional reproduction.

### RED LABEL

High-fidelity, volume selling disc with .021 aluminum base. Coated with flawless RECORDISC compound. Professional quality in smaller sizes for those who want the finest. Professional nitrate coating.

### "GM" LABEL

Available in the three larger sizes only, these discs are made on heavy .021 aluminum base, coated with critically selected compound. Precision-made, and minutely inspected, they are guaranteed for perfect performance and long use.

### SPECIAL ORDER

At no increase in cost, made up to order, with the same quality and in the same sizes as the Orange and Red label blanks, RECORDISC offer their YELLOW and BROWN labels, using ethyl cellulose coating with the U.L. approved film, instead of regular cellulose nitrate.

### ECONOMY LABEL

To meet the huge demand for extra-low-cost blanks, RECORDISC offers these slightly imperfect Red Label blanks which have failed to meet our rigid inspection. They do not bear the RECORDISC trademark. They will give at least the equivalent of one full side of perfect recording.

### LIST PRICES †

LABEL	BASE	6 1/2"	8"	10"	12"
ORANGE	Bond	15c	25c	35c	
PURPLE	Aluminum	20c	30c	45c	
RED	Aluminum	30c	40c	60c	80c
"GM"	Aluminum		60c	80c	\$1.00
ECONOMY	Aluminum	15c	20c	30c	

## PRECISION-PERFECT PROFESSIONAL RECORDING DISCS

Designed for broadcasting stations and recording studios. Years of costly research and the valuable experience gained as the world's largest producer of home recording blanks have been combined to produce the perfect professional recording disc . . . possessing a fidelity heretofore thought impossible. Each blank guaranteed for five full years.

### LIST PRICES †

	10"	11 7/8"	12"	13 1/4"	16"	17 1/4"
1 ★ STAR consistently dependable, single face	\$ .85		\$1.40		\$2.35	
2 ★ ★ STAR precision-processed, double-face	\$ .90		\$1.50		\$2.70	
3 ★ ★ ★ STAR perfectly flawless, double-face	\$1.15		\$1.85		\$3.40	
MASTER DISCS double-face		\$2.35		\$3.05		\$5.10

## RECORDISC RECORDING STYLI Best Suited for Best Recordings

### SAPPHIRE STYLUS



A specially lapped sapphire point on each stylus cuts clean shiny grooves with less surface noise than any similar stylus. As much as 10 hours of recording time . . . can be sharpened as many as 15 times. Packed in individual jewel box. LIST PRICE †

**650**

### STELLITE STYLUS



Carefully machined of special, hardened metal alloy . . . less fragile than costly sapphire stylus. Recommended for less experienced recording operators. Packed one to a protective card. LIST PRICE †

**200**



### SPECIAL QX-5

A precision-made stylus made of processed and tempered steel . . . with an expensive filter cutting point and recessed shank. Smooth easy cutting for those who seek a fine but non-fragile recording tip. LIST PRICE †

**75c**

### HAND-LAPPED STEEL STYLUS



Carefully hand-lapped and micro-inspected for greatest fidelity at lowest price. A specially designed stylus that gives good service to semi-professional and amateur recordists. Packed one to the protective card. LIST PRICE †

**50c**



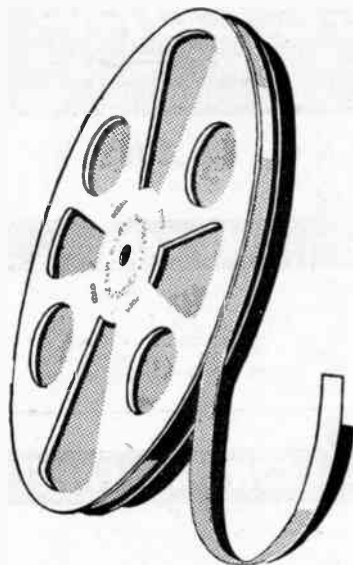
### STEEL STYLI (CHROME PLATED)

A fine economy stylus that gives excellent service during its recording life of approximately one hour. Shiny chrome-plate on hardened steel. Packed in protective cards. LIST †

**3 for \$1**

### RECORDISC ACCESSORIES

STROBOSCOPE. Determines turntable speed accurately for better recordings. \$1  
RECORD PRESERVER. Cleans and preserves freshly-cut surfaces. 2 oz. bot. 45c  
TURNABLE LUBRICANT. For smooth operation on all parts subject to friction. 40c  
MAILING ENVELOPES. Heavy brown, Kraft, lined. 6 1/2"-10c 8"-12c 10"-15c



# REEVES Soundcraft

CONSTANT OUTPUT

## MAGNETIC SOUND-RECORDING TAPE

FOR ALL MAKES OF TAPE RECORDERS

### PRICE LIST

Soundcraft tape is available in ALL types and lengths.  
The following are most popular:

Identifying TYPE NUMBER*	Type of OXIDE	Type of BASE	Description			LIST PRICE Per Reel	NET PRICE Per Reel
			WINDING Oxide Faces	LENGTH in Feet	Size** of REEL		
RPN-12	Red	Plastic	In	1250	7"	\$5.50 each	\$3.30 each
RPO-12	Red	Plastic	Out	1250	7"	(625 ft. — 5 in. reel \$3.50 each)	
BPN-12	Black	Plastic	In	1250	7"	Prices of other lengths on request.	
BPO-12	Black	Plastic	Out	1250	7"		
RKN-12	Red	Kraft Paper	In	1250	7"	\$3.50 each	\$2.10 each (625 ft. — 5 in. reel \$2.25 each)
RKO-12	Red	Kraft Paper	Out	1250	7"		
BKN-12	Black	Kraft Paper	In	1250	7"	Prices of other lengths on request.	
BKO-12	Black	Kraft Paper	Out	1250	7"		

\*Easy-to-remember type numbers:

1st letter  
R = RED Oxide  
B = BLACK Oxide

2nd letter  
P = PLASTIC  
K = KRAFT PAPER

3rd letter  
N = Wound IN  
O = Wound OUT

Number = hundreds of ft. (approx.)

— 12 = 1250 ft.  
— 6 = 625 ft.

— 25 = 2500 ft.  
— 54 = 5400 ft.

Popular Type Equivalents

Soundcraft "INITIAL" Designations	Type Numbers in other brands
RPN	= #111 A = #1251
RPO	= 111 B = 1250
RKN	= 100 A = 1221
RKO	= 100 B = 1220

\*\*Soundcraft tape comes on sturdy six-spoke polystyrene reels. Tests indicate these reels run truer and resist warping better than metal reels. Soundcraft professional tape-user survey shows overwhelming preference for good plastic reels.

If in doubt as to type tape to use ask your dealer.

### 10 GREAT FEATURES

**CONSTANT OUTPUT** built-in by new electronic monitoring method. The playback level of a continuously recorded tone during coating determines requirements for making compensating adjustments to the coating machinery.

**65 db DYNAMIC RANGE**, high output with minimum background rumble results from combining the highly uniform oxide dispersion with tape surfaces specially polished in production to eliminate even microscopic irregularities.

**HIGH FREQUENCY RESPONSE** of Soundcraft tape conforms to the standards that usage in the tape industry has set so that it may be used interchangeably type-for-type with other popular makes.

**LONG LIFE** for thousands of recordings and replays at high output is assured by complete erasability without special equipment and by Soundcraft's tough, no rub-off oxide coating.

**LONG HEAD LIFE**. Low-friction oxide-coating vehicle covers each of the uniform-sized particles of oxide with a tough microscopic film that prevents any abrasive material from touching magnetic heads. This vehicle or binder, moreover, contains nothing that can rub off and gum head surfaces.

**MINIMUM DETERIORATION** is guaranteed by safety-film plastic and high-tensile paper base materials. Under average indoor temperatures and humidities Soundcraft tapes will resist brittleness indefinitely and stretch or shrink a minimum.

**INTERCHANGEABILITY**. Coercive force, output, and frequency response are intentionally identical with those factors in other good quality tapes so that Soundcraft tape may even be spliced into other tapes if so desired.

**HIGH ADHERENCE** of the coating to the base is effected by preprocessing (like priming) the base material before coating. Permits the use of coating material that has no tendency to stick layer to layer.

**MECHANICAL UNIFORMITY** is assured by straight-line rotary-shearing of the wide stock into individual tapes and by a special coating vehicle formulation that prevents curling. Soundcraft tape tracks straight and winds flat.

**WIDE BIAS LATITUDE** of Soundcraft tapes results in high uniform output and low distortion without critical bias adjustments.



# REEVES Soundcraft



## FAMOUS NAME SOUND RECORDING DISCS

"THE BROADCASTING STATION STANDARD"

	Size	Standard Package	List Price each	Your Net at 40% off List In Std. Pkgs.
<b>The 'PLAYBACK'</b>				
The standard broadcasting-quality blank record for all professional uses in radio stations, recording and motion picture studios. Physical and sound properties equal to the best competitive blanks plus Soundcraft's many extra features.	6½" Double Face	20	\$0.55	\$0.33
	8" " "	20	.80	.48
	10" " "	20	1.15	.69
	12" " "	20	1.90	1.14
	16" " "	20	3.45	2.07
	10" Single Face	20	.80	.48
	12" " "	20	1.40	.84
	16" " "	20	2.40	1.44
<b>The 'AUDITION'</b>				
A selection from the runs of 'PLAYBACKS' having minor physical defects outside of the recording areas. Suitable for less important radio and sound studio applications, for schools, amateur, and better home recording. Competitive with other 2nd quality blanks.	6½" Double Face	20	\$0.45	\$0.27
	8" " "	20	.70	.42
	10" " "	20	1.00	.60
	12" " "	20	1.55	.93
	16" " "	20	2.65	1.59
	<b>The 'MAESTRO'</b>			
Oversize MASTER discs for originals in making phonograph records and transcriptions. No trademarks, only one drive hole to comply with processing requirements. Use 12" for 10" phono records " 13¼" " 12" " " " 17¼" " 16" transcriptions	12" Double Face	20	\$2.40	\$1.44
	13¼" " "	20	3.10	1.86
	17¼" " "	20	5.25	3.15
	12" Single Face	20	1.65	.99
	13¼" " "	20	2.20	1.32
	17¼" " "	20	3.25	1.95
	<b>"MICROMASTERS" extra flat for microgroove recording.</b>			
	{ 13¼" Double Face	20	3.75	2.25
	{ 17¼" " "	20	6.15	3.69
<b>The 'BROADCASTER'</b>				
A MASTER selection in instantaneous sizes for vitally important recordings. An "extra fare" product in a class by itself. Perfect recording area, perfect edges. 16" double face furnished "MICROFLAT" for microgroove recording on request at no extra charge.	10" Double Face	20	\$1.40	\$0.84
	12" " "	20	2.20	1.32
	16" " "	20	3.95	2.37
	10" Single Face	20	.90	.54
	12" " "	20	1.50	.90
	16" " "	20	2.75	1.65

On special order Soundcraft discs can be furnished with your own trademarking, labels, special hole-punching or grading.

Technical specifications of Soundcraft discs and Soundcraft stylus information on reverse of this sheet.

Soundcraft magnetic tape adjoins.





REEVES

# Soundcraft

"MAKING THE  
RECORDINGS  
MILLIONS LISTEN TO"

## SAPPHIRES—CUTTING & PLAYING

Code Word	Description	List Price	Net to Radio Station, Studio, etc. Less 50%
<b>SAPPHIRE CUTTING STYLUS</b>			
<b>Sacut</b>	Broadcast quality, dural shank, maximum length jewel Standard 87 deg. angle, 1.5 mil radius, or Microgroove stylus, .5 mil radius. (Specify if microgroove & long or short.)	\$7.50	\$3.75
<b>STELLITE CUTTING STYLUS</b>			
<b>Stell</b>	For semi-professional recording. (Specify long or short shank as above.)	\$2.00	\$1.00
<b>SAPPHIRE TRANSCRIPTION PLAYBACK NEEDLE</b>			
<b>Sapla</b>	Straight dural shank, 2.5 mil radius Microgroove playback, 1 mil radius. (Specify if microgroove.)	\$6.50	\$3.25
<b>RESHARPENING SERVICE</b>			
	Sapphire Cutting Stylus, any type.	\$3.25	\$1.63
	Stellite Cutting Stylus	1.00	.50
	Sapphire Transcription Playback	2.50	1.25
	Mail stylus for resharpening in original packaging to your distributor.		

### TECHNICAL SPECIFICATIONS OF SOUNDCRAFT DISCS

#### PHYSICAL PROPERTIES OF BLANK DISCS

Aluminum Bases: Alcoa #2 Reflector Sheet Stretcher-leveled for flatness  $\frac{3}{4}$  hard.

Base Thicknesses: 17 $\frac{1}{4}$ " & 13 $\frac{1}{4}$ " — .050

16" — .040; 12" — .032

10", 8", 6 $\frac{1}{2}$ " — .025

Center Hole: .2845" + or — .001"

Drive Pin Holes: .284" + or — .010

Coating: Recording lacquer applied by flow method.

Coating Thickness: .007 to .008

Coating thickness increases slightly toward outer edge so that weight of pile of discs is carried on outer edges in recording margin.

Thread Behavior: Thread throws inward  $\frac{1}{2}$ " to  $\frac{1}{4}$ ". Can be picked up easily.

#### CHEMICAL PROPERTIES OF COATINGS

Free from foreign matter down to size of 1 micron (thoroughly filtered).

Free from hard or soft spots (thoroughly mixed).

No deterioration with age (inert plasticizers).

Free from solvents (thoroughly dried).

Free from excess lubricant (successfully processed regularly by RCA-VICTOR, COLUMBIA, MERCURY, CAPITOL, etc.)

Free from lacquer impurities to cause grey cutting.

#### SOUND PROPERTIES OF COATINGS

Frequency Response: Indefinable (due to factors of temperature, diameter, stylus tip dimensions, pickup characteristics, playback needle dimensions, etc.), but will playback at least 10,000 cycles per second under commercial conditions.

Surface Noise: — 55 to 60 db below maximum signal level commonly recordable.

Wearlife: At least 100 playings of unmodulated groove without noticeable noise increase, using any good pickup, if kept dust-free.

# audiotape



*it speaks for itself*

A complete line of professional quality magnetic recording tape—on plastic or paper base, with red or black oxide coating, permitting matched performance in any tape recorder.

Audiotape is precision manufactured to the same exacting standards of quality and uniformity which have characterized Audiodiscs for the past decade—your assurance of maximum fidelity, uniformity, frequency response, and freedom from background noise and distortion.

The following types of Audiotape are now available:

1250 Feet, on 7" all-aluminum reel  
600 Feet, on 5" sturdy plastic reel

Type No.		Coating	Wound on Reel with	List Price
7" Reel	5" Reel			
<b>PLASTIC BASE AUDIOTAPE (in the Red Box)</b>				
1240	640	Black Oxide	Oxide Out	} \$5.50 per 7" Reel \$3.50 per 5" Reel
1241	641	Black Oxide	Oxide In	
1250	650	Red Oxide	Oxide Out	
1251	651	Red Oxide	Oxide In	
<b>PAPER BASE AUDIOTAPE (in the Blue Box)</b>				
1200	600	Black Oxide	Oxide Out	} \$3.50 per 7" Reel \$2.25 per 5" Reel
1201	601	Black Oxide	Oxide In	
1220	620	Red Oxide	Oxide Out	
1221	621	Red Oxide	Oxide In	

AUDIOTAPE is also available on larger reels.

**audiodiscs and audiopoints** are listed on the following page.

## "HOW TO MAKE GOOD RECORDINGS"

A complete, authoritative and non-technical handbook on all phases of disc recording—materials, equipment and techniques. Contains 140 pages, profusely illustrated with photographs, charts and diagrams. Includes a glossary of recording terms. Now in its 9th printing.

List price \$2.00



## AUDIODISC CHIP-CHASER

A simple but perfect solution to the thread removal problem in recording. The felt-lined wiper blade is set on the disc before starting the recording. The Chip-Chaser automatically and infallibly brushes the thread toward the center, winding it up on the overhead post or drive pins, as the case may be.

List Price { for 18" turntables, \$6.25  
for 12" turntables, \$5.00



AUDIOTAPE is cut by a superior straight-line slitting process which makes it track and wind absolutely flat.

AUDIOTAPE has no curl—lies flat on the magnetic head without increased tension, giving better frequency response and more uniform motion.

AUDIOTAPE has exceptionally low surface friction—reduces wear on heads.

AUDIOTAPE has definitely superior dispersion of oxide particles—no lumps, no bumps. This can be checked with any good microscope.

AUDIOTAPE is completely free from any tendency to stick, layer to layer. Unwinds uniformly, no tendency to create wows.

AUDIOTAPE coating is specially formulated to give strong adherence of the oxide to the base.

AUDIOTAPE is designed to give maximum signal to noise ratio.

AUDIOTAPE has a wider bias range for optimum results—less sensitive to bias changes.

AUDIOTAPE has excellent high frequency response.

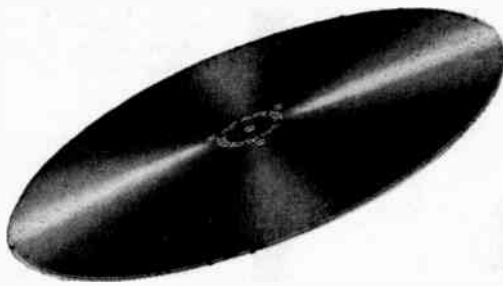
AUDIOTAPE has low distortion.

AUDIOTAPE has no low-frequency modulation noise.

AUDIOTAPE has unequalled uniformity—within the reel, and from reel to reel. No magnetic weak spots that can cause fluctuations in output.

Every foot of AUDIOTAPE is monitored for output, distortion and uniformity.

# audiodiscs



*For truly fine recording and reproduction*

For more than a decade, Audiodiscs have consistently maintained their position of eminent leadership in every field of instantaneous disc recording.

A superior lacquer coating, applied to the mirror-smooth aluminum base by a patented process, gives these outstanding advantages: maximum uniformity of coating, permanent resistance to humidity, longer stylus life, freedom from audible background scratch, long playback life, brilliant frequency response, and freedom from deterioration with age.

Type	Diameter	List Price per Disc	Box Contains		
<b>RED LABEL Audiodiscs</b> for professional use. Exceed the most exacting demands for highest quality professional recordings. The finest discs obtainable. Aluminum base. Double sided. Embossed labels.	6 1/2"	\$0.55	25		
	8"	.80			
	10"	1.15			
	12"	1.85			
	16"	3.40			
<b>SINGLE FACE RED LABEL Audiodiscs.</b> Same quality as double sided Red Label Audi-discs, listed above.	10"	\$0.85	25		
	12"	1.40			
	16"	2.35			
<b>YELLOW LABEL Audiodiscs</b> for general use. High uniform quality. The popular choice for all general purpose recording. Aluminum base. Double sided. Yellow paper labels.	6 1/2"	\$0.45	25		
	8"	.70			
	10"	.90			
	16"	2.70			
<b>REFERENCE LABEL Audiodiscs.</b> Provide maximum economy for test cuts, filing, reference recordings, auditions and equipment adjustments. Aluminum base. Double sided. White paper labels.	10"	\$0.70	25		
	12"	1.05			
	16"	1.90			
<b>BLUE LABEL Audiodiscs</b> for amateur use. Same high quality lacquer as professional discs, but on thinner aluminum base. Ideal for schools, homes, and general amateur use. Double sided. Blue paper labels.	6 1/2"	\$0.35	50		
	8"	.50			
	10"	.75			
<b>MASTER Audiodiscs.</b> The outstanding choice of professional recordists for use where pressings are to be made. Give fine results with either silvering or gold sputtering. Aluminum base. Double sided or single face.	Double Sided	12"	\$2.35	25	
		18 1/4"	3.05		
		17 1/4"	5.10		
	Single Face	12"	\$1.85		25
		18 1/4"	2.05		
		17 1/4"	3.05		

Prices slightly higher in Pacific Coast and Southwestern Areas.

# audiopoints

*microscopically matched recording and playback styli*

The complete line of Audiopoints covers the full range of recording and playback needs—for professional as well as general use. Audiopoints are made by skilled craftsmen, and conveniently packaged in cards, boxes or envelopes.

## RECORDING AUDIPOINTS



**SAPPHIRE No. 14**—long recognized as the finest recording stylus made. Short or long dural shank, and 87° or 70° included angle.

List Price—\$7.25  
(Resharpening cost—\$3.25)

**SAPPHIRE No. 202**—a high-quality professional stylus. Short or long brass shank.

List Price—\$5.25  
(Resharpening cost—\$2.60)

**SAPPHIRE No. 20**—especially designed for professional microgroove recording. Short or long dural shank.

List Price—\$7.25  
(Resharpening cost—\$3.25)

**STELLITE No. 34**—a favorite with many professional and non-professional users. Short or long shank. 87° included angle.

List Price—\$1.75  
(Resharpening cost—\$0.85)

**DIAMOND LAPPED STEEL No. 50**—most practical and economical stylus for non-professional use.

List Price—\$ for \$1.00

## PLAYBACK AUDIPOINTS



**SAPPHIRE No. 113**—meets the requirements of the most critical professional recordists. Straight dural shank.

List Price—\$6.50  
(Resharpening cost—\$2.25)

**SAPPHIRE No. 123**—for professional use with microgroove recordings.

List Price—\$2.00  
(Resharpening cost—\$1.00)

**"RED CIRCLE" SAPPHIRE No. 103**—for professional use with instantaneous recordings or vinyl transcriptions. Straight dural shank.

List Price—\$2.00  
(Resharpening cost—\$1.00)

**"RED CIRCLE" SAPPHIRE No. 303**—same as No. 103, except with bent dural shank. Ideal for phonograph records.

List Price—\$2.00  
(Resharpening cost—\$1.00)

**STEEL TRANSCRIPTION NEEDLE No. 151**—finest steel needles made. 100% shadowgraphed to assure perfection of every needle.

List Price—100 for \$1.25  
20 for \$0.25

## RESHARPENING SERVICE

Established years ago, our Resharpening Service materially reduces the over-all cost of using sapphire and stellite Audiopoints. Each resharpened point is disc-tested. Special cards and envelopes are available for returning Audiopoints for resharpening.

# WALCO



# Play Back NEEDLES

Trade Mark

**QUANTITY DISCOUNTS QUOTED ON REQUEST**

**WALCO "400"  
FLOATING JEWEL SAPPHIRE**



**MODEL WS-400**

**LIST PRICE \$2.50**

**WALCO "400"  
RUBY JEWEL NEEDLE**



**MODEL WR-400**

**LIST PRICE \$2.00**

**WALCO "400"  
PRECIOUS METAL NEEDLE**



**MODEL WA-400**

**LIST PRICE \$1.50**

These three needles are beautifully packaged and are available 12 to a counter-display card or in compact cartons of 12 needles. All WALCO needles are also available with microgroove (one mil radius) points for LONG PLAYING records.



**WALCO  
DIAMOND NEEDLE  
MODEL WD-90**

The Walco Diamond is the first professional broadcast-type needle to be offered for low cost, mass sale. Once installed in today's pickup, the needle problem is ended.

**LIST PRICE \$12.50**



**PROFESSIONAL DIAMOND  
PLAY BACK STYLUS**

**MODEL WD-95** — For users who prefer a straight shank needle or where a bent needle cannot be used, Walco provides the WD-95 Straight Shank. TIP: South African diamond; SHANK: 17ST duraluminum; POINT RADIUS: .0025"; INCLUDED ANGLE: 45 degrees; OVERALL LENGTH: Straight shank — 1 1/2".

**LIST PRICE \$12.50**



**WALCO SAPPHIRE  
"Muted Stylus"  
NEEDLE**



**MODEL WP-30S  
LIST PRICE \$1.50**

**WALCO PRECIOUS METAL  
"Muted Stylus"  
NEEDLE**



**MODEL WP-30  
LIST PRICE \$1.00**

**THE ENCORE  
MODEL WA-100**

An exceptionally fine needle priced for volume sales. Precious metal tipped.

**LIST PRICE \$1.00**



**STRAIGHT SHANK  
SAPPHIRE  
MODEL WN-55**

Especially recommended for low-pressure pickup and professional use. Notched dural shank.

**LIST PRICE \$1.00**



**BENT SHANK  
SAPPHIRE  
MODEL WN-50**

For use on older type phonos with heavier pickups. Hand polished sapphire with dural shank.

**LIST PRICE  
\$1.00**



**GROOVE-MASTER  
MODEL WA-150**

A high fidelity needle tipped with precious metal alloy. Hand polished point with filter type shank.

**LIST PRICE  
\$.50**



**COIN MACHINE  
SAPPHIRE  
MODEL WS-900**

For the light weight tone arms in new coin phonographs. Rated at 3,000 record plays.

**PRICES ON  
REQUEST**



**COIN MACHINE  
PRECIOUS METAL  
MODEL SA-2**

An all-purpose, long-life coin machine needle of superior quality.

**PRICES ON  
REQUEST**

# Carillon Dynamic®



Now packaged in new, individual metal containers and mounted in attractive, and colorful counter display easels.

## PHONOGRAPH NEEDLES



### COMBINATION DISPLAY CARD No. 14C

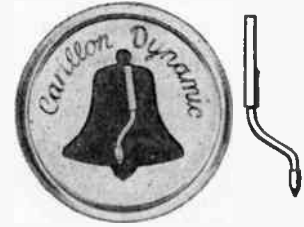
An attractive Combination of popular CARILLON DYNAMIC needles selected for their versatility in construction and list price—consisting of 14 needles at a price of 12 needles—2 - 1500N, 3 - 581S, 3 - 560 & 6 - 550.  
List \$17.00

All the CARILLON DYNAMIC Displays are designed to be Puffer-Proof, made to stimulate sales, and boost profits.



### GREEN NYLON SCRATCH ELIMINATOR No. 1500-N (Nylon)

Highest grade osmium alloy tip mounted on spring wire to produce spring action and eliminate distortion. Nylon damper removes practically all surface scratch. Rated up to 10,000 plays. Packed 12 to carton, or mounted 12 to attractive counter easel.  
List \$2.50



### OSMIUM ALLOY NEEDLE No. 580

Similar in all respect to #570 needle (below), but has 3/16" offset shank which gives softer tone. Rated up to 6,000 plays, with high fidelity, minimum scratch and noise. Packed 12 to carton, or mounted 12 to attractive card.  
List \$1.50

### ADDITIONAL HOME PLAYBACK NEEDLES



**#550—Precious Metal Alloy:**  
A new needle, with 1/8" offset with lower flat to insure lateral compliance and quiet play. Rated up to 1,000 plays. Packed 24 to carton or mounted 24 on counter card.  
List \$0.50



**#560—Precious Metal Alloy:**  
Quietest needle in low-price range. Two-piece unit, with fine flattened wire, tipped with precious metal alloy. Rated to 5,000 plays. Mounted 12 to easel, or packed 12 to carton.  
List \$1.00



**#570—Osmium Alloy:**  
Scientific construction gives highest possible fidelity with the lowest distortion and scratch. 1/8" offset Precision-shaped osmium alloy tip assures long playing life.  
List \$1.50



**#571-S (Sapphire Pt.):**  
Finest permanent-type full-tone needle with 1/8" offset shank. Precision point set with long-wearing jewel. Mounted 12 to easel, or packed 12 to carton.  
List: #571-S \$2.00  
#571-R \$2.50



**#581-S (Sapphire Pt.):**  
Similar to #571 (left), but has 3/16" offset shank for softer tone. No finer jeweled needle anywhere. Mounted 12 to easel, or packed 12 to carton.  
List: #581-S \$2.00  
#581-R \$2.50

### COIN MACHINE NEEDLES



**#1003—Sapphire Point:**  
The best of quality in coin phonograph needles, especially designed for the new lightweight pickups. Tipped with sapphire, this needle cannot be excelled for true economical operation. Up to 7,500 plays per needle.  
List \$1.50



**#333—Flexible:**  
A flexible type needle intended for either heavy or lightweight pickups. It gives a rich tone and is designed for all juke installation. Each needle is mounted on a handy individual card. Plays up to 5,000 records.



**#544—Loud:**  
Rigid-type, especially adapted for HEAVY pickups. Rated to 4,000 plays.  
List \$1.00



**#543—Finest Alloy Tool Steel:**  
Microscopically ground and polished with diamond dust. Recommended for amateur home use. Will cut approximately twenty-five 6-inch records. Mounted 3 to a card.  
List \$1.05



**#542—Stellite:**  
This "quality" recording stylus, when used by the advanced amateur or professional, gives results closely approximating the finest Sapphire. Hand-finished tip cuts quiet groove. Cuts about 500 six-inch records. Mounted 1 to a card.  
List \$1.50

### MICROGROOVE, LP, FINE-GROOVE NEEDLES

All CARILLON DYNAMIC play back needles are available with small radii (made to RMA Standards) to play all Micro-groove, LP or fine groove records, except Nos. 333, 544 and 550. Also these needles are available with compromise radius to play all 3-speeds.

Write for Quotations on Special Replacement Needles.

Manufacturers of the World's Largest Line of Long-Life Recording and Playback Needles

**M. A. MILLER MFG. CO.** 1169 E. 43rd ST., CHICAGO 15, ILL., U.S.A.

# Jensen

## PHONOGRAPH NEEDLES FOR ALL RECORD CHANGERS

JENSEN CAT. NO.	ILLUSTRATION	LIST	CARTRIDGE NUMBERS	POINT MATERIAL	POINT SIZE	REPLACEMENT FOR
A-80	(Actual Size)	\$1.50	QT, LQ	Osmium	Standard	Autolic
A-80-1P		1.50	QT, LQ, CQ	Osmium	Micro-Groove	Autolic
A-81		2.50	CO	Osmium	All-Purpose	Autolic
A-81-1P		2.50	QT, LQ	Sapphire	Standard	Autolic
A-84		1.50	QT, LQ, CQ	Sapphire	Micro-Groove	Autolic
A-84-1P		1.50	GC	Osmium	Micro-Groove	Autolic
A-86		1.50	LT, LTD, MD	Osmium	Standard	Autolic
A-86-1P		1.50	ITD	Osmium	Micro-Groove	Autolic
P-30		1.50	P30, P37, P70	Osmium	Standard	Shure
P30-1P		2.50	P74AD (Admiral), P74, P77, P79, P81, P89, P93, P94, P950, W52, W53, W40, W41, W42, W57, W58, W60, W61, W65	Osmium	Standard	Shure
P-30-1P		1.50	P74, P77, P79, W31, W32	Osmium	Micro-Groove	Shure
P-31		1.50	P71, P81, P37	Sapphire	All-Purpose	Shure
W-02		1.50	M1	Osmium	Standard	Webster-Electric
W-03		2.50	F14, F14-1, F14-2, F14-3, F14-4	Osmium	Twin-Point	Webster-Electric
W-14		2.50	A1, A8	Sapphire	Standard	Webster-Electric
W-15		2.50	A1, A2, A3, A4, A5, A6, A8	Sapphire	Micro-Groove	Webster-Electric
W-16		1.50	A1A, A1A-1, A2A, A2A	Osmium	Standard	Webster-Electric
W-17		1.50	A1A, A1A-1, A2A, A2A, A2A	Osmium	Micro-Groove	Webster-Electric
W-30		1.50	Q1	Osmium	Standard	Webster-Electric
W-41		1.50	Q3, A9, F13	Osmium	All-Purpose	Webster-Electric
W-42		1.50	Q1	Osmium	Standard	Webster-Electric
W-49		1.50	Q2	Osmium	Standard	Webster-Electric
W-72		1.50	F16, F16-1, F16-2	Osmium	Standard	Webster-Electric
W-73		1.50	F16, F16-1, F16-2	Osmium	Micro-Groove	Webster-Electric
W-81		1.50	F11, F11-1	Osmium	Standard	Webster-Electric
W-82		1.50	F11, F11-1	Osmium	Micro-Groove	Webster-Electric
W-12		1.50	F7, F7-1, F7-2, G-2, P13	Osmium	Micro-Groove	Webster-Electric
W-30		1.50	F10, F11, F11-1	Osmium	Standard	Webster-Electric
W-30-1P		1.50	F11, F11-1	Osmium	Micro-Groove	Webster-Electric
E-80		2.50	M12-S, M12-L, M12-S	Sapphire	Standard	Electro-Voice
E-80-1P		2.50	14-S, 22-S, 34	Sapphire	Micro-Groove	Electro-Voice
E-91		1.50	14T, 22T	Sapphire	Twin-Point	Electro-Voice
E-93		2.50	14T, 22T	Osmium	Twin-Point	Electro-Voice
E-95		1.50	M12, M12, 112	Osmium	Standard	Electro-Voice
E-95-1P		1.50	14, 22, 114, 34	Osmium	Micro-Groove	Electro-Voice
E-95-2		1.50	130	Osmium	All-Purpose	Electro-Voice
NE-311		4.00	21P245, 21P402, 21P603	Osmium	Twin-Point	Webster-Chicago
NE-368		4.00	21P404	Osmium	Twin-Point	Webster-Chicago
M-62		1.50	560101	Osmium	Standard	Magnavox
M-64		2.50	560133	Osmium	Twin-Point	Magnavox
M-70		2.95	70336, 70339, 72551	Sapphire	Standard	SCA
M-71		2.00	9090 (Mighty Tone Call), 39919, 39530, 38598, 70332, 39831	Sapphire	Standard	SCA
		2.25	74667	Sapphire	Standard	SCA
		2.00	74667	Sapphire	Standard	SCA
M-80-1P		1.50	45-1609	Sapphire	Micro-Groove	Columbia
M-80-2P		1.50	45-1609	Sapphire	Micro-Groove	Philco
PH-10		2.25	Dynamic Reproducer	Sapphire	Standard	Philco
PH-11		1.50	45-1609	Osmium	Micro-Groove	Philco
PH-12		2.50	74-6449	Osmium	Twin-Point	Philco
AM-20		1.50	S-1, S-1A, S-2, S-2A	Osmium	Standard	Amer. Microphone
AM-21		1.50		Osmium	Standard	Amer. Microphone
AM-21-1		1.50		Osmium	All-Purpose	Amer. Microphone

**THE JENSEN REPLACEMENT NEEDLE CHART**  
Available Free . . . Write Jensen Industries



### JENSEN CLASSIC

The needle with the long life osmium tip and incorporating the exclusive Jensen spring construction. Catalog No. 15M — one display and 13 individually packed needles. Catalog No. 15 — single needle — list price \$1.50



### JENSEN SWEET

High in quality, low in cost; reproduces music with life-like clarity. Well balanced design minimizes scratch. Catalog No. 75M — one display and 12 individually packaged needles. Catalog No. 75 — single needle — list price 75c

### JENSEN REPLACEMENT NEEDLE CHART

This Chart makes it extremely simple for the serviceman to locate the needle he needs and its reference number. Requesting the correct needle by number enables the jobber instantly to fill the order from stock. These needles are available with either sapphire or osmium tip.

### ROYAL JEWEL

Packaged in a clear plastic letter opener with a built-in magnifying glass, Jensen's Royal Jewel Needle has a genuine sapphire tip.

Catalog No. 25D — point-of-sale display with 13 needles.

Catalog No. 25 — single needle — list price \$2.50



### JENSEN CONCERT

The Jensen flexible shank absorbs needle shock and protects records. Each package has a straboscope on back to check turntable speeds. Catalog No. 10D — display with 13 individually packaged needles. Catalog No. 10 — single needle — list price \$1.00



### JENSEN FIFTY

The lowest price quality phono needle on the market with curved shank and osmium tip. Catalog No. 5D — one display and 12 individually packaged needles. Catalog No. 5 — single needle — list price 50c



**Jensen INDUSTRIES, INC.**  
329 South Wood Street, Chicago 12, Illinois

# DUOTONE

## REPLACEMENT NEEDLES

Duotone Catalog Number	Actual Size	Replacement For	Point Material	Point Size	Price
A01		Astatic Q needle QT & LQ series	metal	standard .003	\$1.50
A01LP		Astatic Q33 needle QT33 series	metal	micro/groove .001	1.50
A02		Astatic D LT and LTD series	metal	standard .003	1.50
A02LP		Astatic D33 for LT3D series	metal	micro/groove .001	1.50
A53		Astatic Q needle for QT series	jewel	standard .003	2.50
A54		Astatic Q33 needle for QT33 series	jewel	micro/groove .001	2.50
A55		Astatic GC-78	metal	standard .003	1.50
A56LP		Astatic GC	metal	micro/groove .001	1.50
ANM9		Astatic IM nylon	metal	standard .003	2.50
ANS10		Astatic IJ nylon	jewel	standard .003	3.00
MSO		P30, P57, P70, P74AD (Admiral), P76, P77, P79, P88, P89, PN30, W22, W23, W40, W41, W42, W40, W41, W45, W40A, W40B	osmium	standard .003	1.50
MSS			sapphire	standard .003	2.50
MSOLP		P73, P74AD (Admiral), P76, P77, P79, W22, W21	osmium	micro/groove .001	1.50
MSSLP		(also used in Shure Turnover Cartridge)	sapphire	micro/groove .001	2.50
MSOA		P71, P37, P81	osmium	All purpose Truncated tip	1.50
RS7		70338, 70339, 72551, 39919, 212X1, 9890 (magic tone cell) 39550, 38598, 70332, 39851	jewel	standard .003	3.50
RS8LP		74067, 45 RPM player (improved type)	jewel	micro/groove .001	3.50
RO9LP		RCA 74067 45 RPM player	metal	micro/groove .001	2.00
W011		Webster-Chicago Tandem V42-2, 21P404	metal	standard .003 & micro/groove .001	4.00

Duotone Catalog Number	Actual Size	Replacement For	Point Material	Point Size	Price
W012		Webster-Chicago Tandem Nylon 21P404	metal	standard .003 micro/groove .001	\$5.50
W013		Webster-Chicago Tandem 21P247, 21P402, 21P403	metal	standard .003 micro/groove .001	4.00
PHS14		Philco-Dynamic Reproducer	jewel	standard .003	2.25
CSLP		Philco-Columbia 101LP Player 45-1609	metal	micro/groove .001	1.50
CS4LP		Philco-Columbia 101LP Player 45-1612-Philco 45-1530-Columbia	jewel	micro/groove .001	2.50
PH015		Philco-tandem 2276-4649	metal	micro/groove .001	2.50
MA016		Magnovox 560101	metal	standard .003	1.50
MA517		Magnovox 540133	metal	standard .003 micro/groove .001	2.50
WE018		Webster-Electric F14, F14-1, F14-2, F14-3, F14-4	metal	standard .003 micro/groove .001	2.50
EO-19		Electro-Voice M12, M12, L12	metal	standard .003	1.50
EOLP19		Electro-Voice L4, 22, L14, 34	metal	micro/groove .001	1.50
E021		Electro-Voice 16TT, 22TT	metal	twin point .003 .001	2.50
ES22		Electro-Voice 16TT, 22TT	jewel	twin point .003 .001	3.50
ES23		Electro-Voice M12, M12, L12	jewel	standard .003	2.50
ES24		Electro-Voice L4, 22, L14, L1L	jewel	micro/groove .001	2.50
ES026		Electro-Voice 33-E 1122	metal		1.50



### ALUMINUM DISCS

IN CARTON	RED LABEL	PURPLE LABEL
6 1/2 inch 100	\$ .30 ea.	\$ .20 ea.
8 inch 50	.40 ea.	.30 ea.
10 inch 50	.60 ea.	.45 ea.
12 inch 25	.80 ea.	

(All Purple Labels are packed 100 in carton)

# DUOTONE RECORDING BLANKS

ALL DUOTONE DISCS HAVE A "PROFESSIONAL NITRATE" COATING

	Red Label (Aluminum Base)		Purple Label (Aluminum Base)		Orange Label (Compo Base)	
	In Carton	Each	In Carton	Each	In Carton	Each
6 1/2 inch	100	\$ .30	100	\$ .20	100	\$ .15
8 inch	50	.40	100	.30	100	.25
10 inch	50	.60	100	.45	100	.35
12 inch	25	.80	—	—	—	—



# DUOTONE NEEDLES

## FILTER POINT No. 6



The Filter Point needle is a newly developed needle which actually filters surface noise, yet retains the brilliance of your recordings. The highly polished and rounded point assures smooth movement in the record groove, reducing record wear to a minimum. The needles are hand picked and will play from 12 to 15 records without frequency loss or distortion. The specially designed point is guaranteed not to break when used with any type of record changer.

List

Package of 10 needles ..... \$ 0.10  
 Cat. No. 610-B—Carton of 100 pkgs..... 10.00  
 Cat. No. 610-C—Display card of 50 pkgs... 5.00

Package of 25 needles ..... \$ 0.25  
 Cat. No. 625-B—Carton of 50 pkgs..... 12.50  
 Cat. No. 625-C—Display card of 50 pkgs... 12.50

## MIRO-POINT No. 21



The Miro Point Needle is the "low surface" specialist of the Duotone Line. Despite this fact it still brings out the highs in a manner never before attained by a needle of this type. Designed to play at least 2000 records the Miro Point is the outstanding needle in the field today.

List Price

Needle list price, each..... \$0.50  
 C't. 21-B—Carton of 18 needles..... 9.00  
 Cat. No. 21-C—Display card of 18 needles... 9.00



Transcription needles are individually shadowgraphed to insure each needle being perfect. They are especially designed to reduce record wear on home recordings and will give life-like reproductions when used on commercial or home records. This needle, because of its perfect point and fine frequency response, is extensively used by broadcasting stations, and recording studios. Economically packed for use in home and studios.

List Price

Package of 10 needles..... \$ 0.10  
 Cat. No. 710-B—Carton of 100 packages..... 10.00  
 Cat. No. 710-C—Display card of 50 packages..... 5.00  
 Package of 25 needles..... \$ 0.25  
 Cat. No. 725-B—Carton of 50 packages..... 12.50  
 Cat. No. 725-C—Display card of 50 packages... 12.50  
 Package of 75 needles..... \$ 0.50  
 Cat. No. 750-B—Carton of 20 packages..... 10.00

## DURPOINT No. 15



Permanent needle for home use. Will play over 4000 records without changing. Takes additional polish from the groove of the record thus minimizing record wear, and reducing surface noise. Because of this feature the Durpoint should not be removed from pick up until replacement is necessary. Packed on individual cards.

List Price

Each Needle ..... \$ 1.00  
 Cat. No. 15-C—Display card of 12 needles..... 12.00  
 Cat. No. 15-B—Carton of 12 needles..... 12.00

## CACTUS NEEDLES No. 18



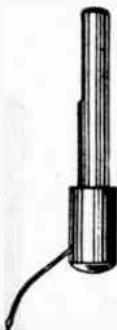
Made from specially selected cactus thorns chemically treated to prolong life of point and assure quiet reproduction. Each needle may be re-sharpened many times. Can be used on record changers as well as ordinary phonographs. Especially recommended for use on records with high surface noise.

List Price

Package of 12 needles ..... \$ 0.35  
 Cat. No. 18-B—Carton of 50 packages..... 17.50  
 Cat. No. 18-C—Display card of 25 pkgs..... 8.75

## SHOCKPROOF NYLON NEEDLE No. 25

Unique in design, this needle has an osmium tip on spring steel set into a Nylon bumper. This eliminates damage to either needle or record should the pickup arm be accidentally dropped. This needle also eliminates surface noise. Individually packed in attractive lucite container. This needle will play up to 5,000 recordings.



shockproof  
 nylon needle\*



List Price

Each needle ..... \$ 2.50  
 Cat. No. 25-C—Display card of 12 needles... 30.00

## CHROMIUM No. 17



The Duotone Chromium needle is Duo Chrome plated to insure long life and minimum record wear. Ideally suited for use on record changers. Each needle has a highly polished surface, and is shadowgraphed. Being of a semi-permanent type,

the Chromium needle avoids the necessity of constantly changing needles. Each needle is guaranteed to play at least 50 records, assuring a full evening of music without requiring a change of needle.

List Price

Package of 5 needles..... \$ 0.25  
 Cat. No. 17-B—Carton of 50 pkgs..... 12.50  
 Cat. No. 17-C—Display card of 25 pkgs.... 6.25

## TRANSCRIPTION No. 7

## NEW REGENT SAPPHIRE (Double Bend) No. 13

A permanent needle with a flat on the shank allowing removal from, and insertion into pickup as required. Will play approximately 6000 home recordings, or 5000 commercial recordings. Finest quality jewel assures natural tone reproduction and very low record wear. Especially recommended for use in lightweight pickups! Packed on individual card.

List Price

Each Needle ..... \$ 2.00  
 Cat. No. 13-B—Carton of 12 needles..... 24.00  
 Cat. No. 13-C—Display card of 12 needles... 24.00

## DUOTONE No. 20 "LIFETIME" OSMIUM TIPPED 5000 PERFECT PLAYINGS



The Duotone Lifetime Needle was especially designed for use with record changers. Its brilliant performance coupled with low surface noise makes it ideal for this purpose. When properly used, it will give at least 5000 perfect playings, maintaining throughout its life the same bright reproductive qualities. Packed in beautiful plastic container.

List Price

Each needle ..... \$ 1.50  
 Cat. No. 20-B—Carton of 12 needles..... 18.00  
 Cat. No. 20-C—Display card of 12 needles... 18.00

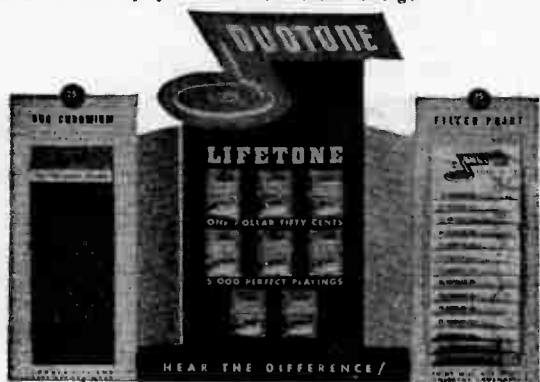




# DUOTONE NEEDLES

## LUCKY SEVEN DEAL No. 777

This popular deal includes three of our most popular numbers, all on one attractive display. It consists of the following:



	List Price
14 packages Filter Point needles..... @ 25c..	\$ 3.50
7 packages Duo Chrome needles..... 25c..	1.75
7 packages New Lifetone needles..... 1.60 ..	10.50
	\$15.75
1 new Lifetone needle FREE .....	1.50
<b>Total Value.....</b>	<b>\$17.25</b>



No. 19 "STAR"

Reproduces any type of record without surface noise yet maintains brilliant high frequencies. Finest quality gem, brightly polished for smooth riding in groove. Special design filters out all noise and needle talk. Has flat on shank for easy insertion in pickup. May be removed if desired. Individually packed in beautiful lucite box. Ideal for dubbing.

	List Price
Each Needle .....	\$ 2.50
Cat. No. 19-B—Carton of 12 needles.....	30.00

### STEEL CUTTING STYLUS No. 8



The ideal needle for use in homes by amateur record makers. With ordinary care will make a quiet record of good quality, which can be played back many times. Will make approximately 15 to 25 10" records. Packed 4 to handy point-protecting felt-lined package.

Price \$1.00  
List \$2.00

Cat. No. 8-B—Carton of 25 pkgs..... 25.00  
Cat. No. 8-C—Display card of 25 pkgs... 25.00

### STELLITE CUTTING STYLUS No. 9

Available in Long and Short Shank



The Stellite cutting stylus with proper care, will make a record that compares favorably with a professional cutting. Its hand-lapped edge cuts a groove which assures a noiseless recording. Stellite styl are recommended after some cutting experience has been acquired. The reduction in surface noise and the improved quality of the recording will be instantly noticeable, and will be well worth the difference in cost. Will cut approximately 500 8" records. Individually packed on cards. Price \$2.00.

List \$24.00  
Cat. No. 9-B—Carton of 12 needles..... \$24.00  
Cat. No. 9-C—Display card of 12 needles.. 24.00

### LAPPED STEEL CUTTING STYLUS No. 10



This new hand-made lap on the cutting edge of the needle makes a much smoother cut, thereby reducing surface noise and adding to the life of the needle. Especially recommended for making vocal recordings. List Price, 5 Needles on card....\$1.50  
Cat. No. 10-B—Carton of 10 cards.....\$15.00  
Cat. No. 10-C—Display card of 10 cards.... 15.00

### SAPPHIRE STYLUS No. 12



Available in Long and Short Shank  
The sapphire Professional cutting stylus is the finest available. The cutting jewel is very highly polished and has a patented hand-lapped edge, which cuts and polishes the groove, making a record with the lowest surface noise. With proper handling will give 10 15 hours of cutting and can be resharpened many times.

No. 11  
No. 12

DO NOT DROP

Packed in plastic container.  
Cat. No. 12—Needle, list price, each .....\$5.50  
(Resharpening—Each \$1.75)

### DURAL SHANK No. 11

Available in Long and Short Shank  
This needle is similar to No. 12, and in addition is held to more exacting specifications, as established by leading engineers. Mounted in Dural shank. Packed in plastic container. Each \$7.25  
(Resharpening—Each \$1.75)

## "MICRO-GROOVE" NEEDLES

### CUTTING NEEDLES

11-M Special Sapphire Cutting Stylus, for use with Micro-Groove Equipment,  
\$7.25 each, List

The Star Needle as well as the Shockproof Nylon Needle are available with the one mill radius for use on micro-groove records.

19-M Star Needle with One Mill Radius,  
\$5.00 each, List

25-M Shockproof Nylon Needle with One Mill Radius,  
\$2.50 each, List

13-M Regent Sapphire Needle with One Mill Radius,  
\$2.00 each, List



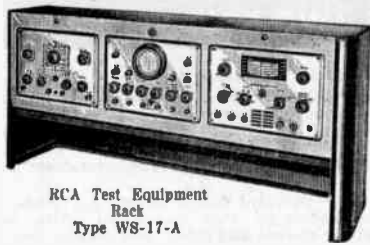
## DUOTAPE MAGNETIC RECORDING TAPE

High Constant Output With Minimum Background Noise—High Frequency Response—Long Life (No rub off oxide coating)—Interchangeable with other good quality tape—All Tape Comes On Six Spoke Polystyrene Reels.

	List
RPI (in) 1250—Red Oxide Plastic Base, 1250 ft., 7" reel.....	\$5.50
RPI (in) 625—Red Oxide Plastic Base, 625 ft., 5" reel.....	3.50
RPO (out) 1250—Red Oxide Plastic Base, 1250 ft., 7" reel.....	5.50
RPO (out) 625—Red Oxide Plastic Base, 625 ft., 5" reel.....	3.50
RKI (in) 1250—Red Oxide Kraft Paper Base, 1250 ft., 7" reel..	3.50
RKI (in) 625—Red Oxide Kraft Paper Base, 625 ft., 5" reel..	2.25
RKO (out) 1250—Red Oxide Kraft Paper Base, 1250 ft., 7" reel..	3.50
RKO (out) 625—Red Oxide Kraft Paper Base, 625 ft., 5" reel..	2.25
Individually packed in boxes—10 Boxes to carton.	

# RCA TEST AND MEASURING EQUIPMENT

for SERVICE • LABORATORIES • INDUSTRY • SCHOOLS



RCA Test Equipment  
Rack  
Type WS-17-A

## TEST-EQUIPMENT RACK WS-17A

Cash in on the lucrative television service market! Modernize your work bench for efficient TV service with this new RCA 3-Place Test Rack. . . Instruments are at your fingertips for quick, accurate service. Accommodates any three matched RCA Test Instruments to meet your individual TV, FM, or AM service needs. Dimensions: 48 x 21½ x 12. Sugg'd User Price: \$59.50

## REGULATED POWER SUPPLY WP-23A

A high-quality unit designed for dependable, continuous service in shop, laboratory, and factory. Output voltage is virtually independent of line-voltage variations as well as load-current variations. Maximum load-current capability increases with the output voltage level. Insulated output terminals permit grounding of either the positive or negative terminal. Primarily intended as an extremely stable "B" supply, the WP-23A also can be used as a low-impedance "C" bias supply. Shipping weight, 25 lbs. Price: \$79.50

### Regulated DC Output:

Voltage Range (continuously adjustable)  
0-300 volts  
Current Range for 120-300 volts.....0-120 ma  
60-120 vo.lts.....0- 80 ma  
0- 60 volts.....0- 60 ma  
Regulation for line-voltage variation of 105 to 125 volts.....Less than 1½%  
Regulation above 30 volts from zero load to full load.....Less than 1%  
Ripple Voltage (RMS).....Less than 8 millivolts

### Auxiliary Unregulated DC Output:

Voltage (approx.).....600 volts  
Current Capability.....120 ma  
Ripple Voltage (RMS).....0.1 volts

### Auxiliary Unregulated AC Output:

Voltage (RMS).....6.3 volts  
Current Capability (RMS).....5 amperes



## AUDIO OSCILLATOR (WA-54A)

The WA-54A Audio Oscillator is a portable, completely self-contained ac operated instrument for generating sinusoidal voltages within the frequency range of 20 to 17,000 cycles per second . . . easily adaptable for measuring the fidelity of radio receivers, frequency response of audio amplifiers, and modulation characteristics of small transmitters, also used for determining frequencies and mechanical speeds. Tapped output transformer makes it possible to match the oscillator output to load impedances most frequently encountered. Shipping weight, 10 lbs. Sugg'd User Price: \$152.50

Frequency Range (continuous)..20 cps to 17 kc

### Output Impedance:

High-Level Balanced.....250, 500, 5000 ohms  
High-Level Unbalanced...62.5, 125, 1250 volts  
Low-Level Unbalanced.....10000 min. ohms

### Output Voltage (approx.):

No Load (high level).....40 RMS volts  
With 5000-Ohm Load.....25 RMS volts  
With 500-Ohm Load.....7.9 RMS volts  
With 250-Ohm Load.....5.5 RMS volts  
No Load (low level).....2.5 RMS volts

Output Variation (loaded).....less than ± 2 db

Distortion.....less than 5% RMS

Dimensions.....10" x 13¼" x 7¼"



## RCA RIDER CHANALYST 162-C

RCA Chanalyst 162-C speeds up those tough service jobs. Monitors intermittent receivers continuously, while service man is working on other jobs. Turns loss items into profits. 52-page instruction book shows test set-ups, circuit diagrams, discusses multitudes of obscure troubles, and explains applications of Chanalyst Analyzer. Height, 9"; width, 16"; depth, 10¾". Shipping weight, 32 lbs. Price \$162.50

### RF-IF Channel:

Frequency Range.....96-1700 kc  
Sensitivity: Better than 80 μv to close indicator eye without probe lead  
Scale Accuracy.....± 2%

### Oscillator Channel:

Frequency Range.....600-15000 kc  
Scale Accuracy.....± 2%

### Audio Channel:

Frequency Range.....15-50000 cps  
Sensitivity (approx.): 0.1 RMS volt to close indicator eye

### Electronic Voltmeter Channel:

Ranges.....0 to 5-25-125-500 dc volts  
(Center-scale zero reference)  
With Crystal Probe: 0 to 5, 0 to 20 RMS volts, (for sine waves)

Frequency Response.± 10% from 1 kc to 100 Mc

### Wattmeter Channel:

Range.....50-250 watts  
Dimensions.....9" x 16" x 10¾"





# RCA TEST AND MEASURING EQUIPMENT

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## 3" OSCILLOSCOPE (WO-57A)

### High Gain—Wide Band—DC and AC Inputs

The WO-57A is an outstanding innovation in portable oscilloscope design. Especially suited for television, this new scope is excellent for laboratory, factory or shop use . . . for viewing and measuring square waves, pulses, TV sync signals and sine waves.

Incorporating the features of far more expensive instruments . . . and with a sensitivity and response equal to that of many laboratory units . . . the WO-57A is the first inexpensive oscilloscope wholly equipped to handle every TV and Radio Service Job. Direct-coupled amplifiers are used to provide low frequency response flat down to dc. Excellent low-frequency square-wave reproduction, essential for correct sweep alignment, is thus assured. High-frequency square-wave response up to 100 kc enables the WO-57A to reproduce blanking and sync pulse wave shapes with fidelity heretofore unobtainable in moderately priced service-type oscilloscopes. Sugg'd User Price: \$137.50



### Check these important features!

- ✓ Sensitivity—25 millivolts per inch deflection
- ✓ Frequency Response of vertical amplifier—flat with in 3 db from zero to 500 kc; down only 50% at 1 Mc; useful beyond 2 Mc
- ✓ Transient Response—tilt and overshoot less than 2%
- ✓ Utility—provided with frequency-compensated and calibrated step attenuator. Also has vernier control and calibrating voltage source
- ✓ 60-Cycle Sweep—with phasing control
- ✓ Input Capacitance—less than 15  $\mu$ mf with WG-214 accessory probe

### PLUS these outstanding extras . . .

- + Trace Expansion—two times screen diameter for sweep-alignment applications
- + Direct Coupled Vertical Amplifier—separate jacks for DC and AC signal measurements
- + Linear Sweep—range 15 to 30,000 cps, with preset fixed positions for viewing vertical and horizontal TV sync pulses and oscillator waveforms
- + Exclusive—sweep direction reversing switch—positive or negative syncing
- + Push-Pull Amplifiers—produces sharper trace and reduces astigmatism

## TELEVISION CALIBRATOR (WR-39B)

Now—in one compact, portable unit—the new RCA WR-39B provides crystal-controlled markers for all TV frequencies—included in this one instrument is a crystal-calibrated variable frequency oscillator, two crystal-controlled oscillator stages with three crystals supplied, a wide-band modulator stage for internally modulating the output at audio and rf frequencies, and an audio amplifier with speaker.

In addition to its function as a marker generator, the WR-39B can be used as a heterodyne frequency meter to identify unknown frequencies. The vfo, when tuned to any TV channel and modulated with the 0.25-Mc crystal oscillator, will put vertical bars on the raster; or when modulated with an external audio oscillator will put horizontal bars on the raster. Thus the instrument can be used for making linearity adjustments in the absence of a test pattern.

The WR-39B may also be modulated by the video signal from a television set, which makes it in effect a 12-channel miniature TV transmitter. Sugg'd User Price: \$224.50



### Check these important features!

- ✓ Crystal-controlled markers, 4.5 Mc removed from main marker for television if alignment
- ✓ Crystal-controlled markers, 250 kc removed from main marker for sound-discriminator alignment
- ✓ Provision for injection of external marker
- ✓ Internal audio and rf modulation of variable frequency oscillator
- ✓ Crystal-calibrated heterodyne frequency meter
- ✓ Crystal-controlled 4.5-megacycle output for alignment of TV receivers employing inter-carrier sound
- ✓ Marker oscillator operates on fundamental on all bands
- ✓ Sound and picture carriers marked on dial

## TV SWEEP GENERATOR (WR-59B)

The WR-59B is a high-quality sweep generator which is used extensively for the design, manufacture and servicing of TV sets. It generates fundamental oscillator sweep-frequencies, preset on switch positions for TV channels 2 to 13. IF and video frequency coverage is produced by a separate calibrated control with continuous tuning from 300 kc to 50 Mc.

Sweep width is continuously variable, and output level is exceptionally flat in all positions. The rf output cable termination can be adjusted to match balanced or unbalanced loads; the rf output level is variable over wide limits by means of a coaxial-type piston attenuator. The unit develops a sweep signal for a scope; a phasing control is provided. An additional feature is return-trace blanking which produces a zero-reference line on the cathode-ray tube for measurement of instantaneous voltages. The unit is complete with rf and lf output cables. Shipping weight, 35 lbs. Sugg'd User Price: \$274.50



### CHARACTERISTICS

#### Frequency Ranges:

RF (TV Channels 2-13):  
54-60, 60-65, 66-72, 76-82, 82-88, 174-180, 180-186, 186-192, 192-198, 198-204, 204-210, 210-216 Mc. Sweep width: 10 Mc max.

IF: 0.3 to 50 mc, continuous tuning. Covers video band, FM if, prewar if's, all present sound and picture if's. Sweep width continuously variable 0-10 mc.

#### Output Impedance (at cable terminals):

RF Ranges: 300 ohms balanced  
IF Range: 100 ohms

#### Maximum Attenuator Ratio:

RF Ranges: 20000/1  
IF Range: 4000/1

#### Maximum Amplitude Variation of Sweep Envelope: All ranges, less than $\pm 1.5$ db

Horizontal Sweep: Phase Range, 0-160°; Power-line Frequency; Amplitude, 5.6 peak-to-peak (2 RMS) volts

# RCA TEST AND MEASURING EQUIPMENT

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## VOLTOHMYST (195-A)

Electronic DC Voltmeter Range...0.3; 10; 50; 100; 500; 1000 volts  
 Input Impedance...10 megohms constant  
 Electronic Ohmmeter Range...0-1,000; 10,000; 100,000 ohms; 0-1; 10; 1000 megohms  
 Internal Source...3 volts  
 Electronic AC Voltmeter Range...0.5; 10; 50; 100; 500; 1000 volts  
 Power Supply...105/125 volts; 50-60 cycles  
 Dimensions...6¼" w; 9¼" h; 6¼" deep  
 Weight...14 lbs.  
 Finish...Grey wrinkle, brush chrome panel

The ideal instrument for radio servicing. In one instrument, at one price, you get 6 testing devices: DC Voltmeter; Ohmmeter; AC Voltmeter; A-F Voltmeter; Outputmeter; FM Indicator. New features include diode for AC measurements, linear AC scale for all ranges; RCA Crystal probe WG-263 (available on request). Sugg'd User Price: \$79.50.



## ADVANCED VOLTOHMYST (WV-75A)

DC (6 ranges)...0 to 1000 volts  
 AC (6 ranges)  
 Using probe directly...0 to 100 volts  
 Using probe and multipliers...0 to 1000 volts  
 Frequency Response:  
 Using probe directly...30 cycles to 250 Mc  
 Using probe and multipliers...30 cycles to 15 kc  
 Input Impedance (using probe directly):  
 At 1 Mc...625 Kilohms; 15.6 μμf  
 Resistance (6 ranges)...0 ohms to 1000 megohms  
 Power Supply (AC)...105/125 volts, 50/60 cycles  
 Dimensions...6¼" w; 9¼" h; 6¼" deep

For High-Frequency, FM, TV, UHF and pulse work. Newly-developed diode probe permits peak-to-peak AC voltage readings to 250 Mc. WV-75A is really 6 instruments: VHF Voltmeter, Audio Voltmeter, AC Voltmeter, DC Voltmeter, Ohmmeter, FM Indicator. Meter is burn-out proof. The WV-75A employs a push-pull DC Vacuum Tube Voltmeter circuit characterized by excellent linearity and stability. Sugg'd User Price: \$125.00.



## ULTRA-SENSITIVE DC MICROAMMETER (WV-84A)

Readings...0.001 μa to 1 ma full scale  
 Six Ranges...0.01; 0.1; 1.0; 10; 100; 1000 μa  
 Voltage Drop at Full Scale (all ranges) 0.5 volts  
 Power Supply (Batteries)...2-1½ volts A (RCA VS106)  
 2-2¼ volts B (RCA VS102)  
 Dimensions...6¼" w; 9¼" h; 5¼" deep  
 Weight (including batteries)...9¼ lbs.

Reads from 0.001 to 1000 microamperes in six separate ranges. Useful for measuring high values of resistance; may be used as high resistance voltmeter. Approaches galvanometer sensitivity. Electronic protected non-burn-out meter. Accuracy, 0.01 range, ± 5% of full scale reading; other ranges ± 4%. Ideal for weak-current measurements in phototubes, multiplier phototubes, etc. Sugg'd User Price (less batteries): \$100.00.



## PORTABLE OSCILLOSCOPE (WO-79B)

Frequency Range:  
 Vertical Amplifier...10 cycles to 5 Mc  
 Horizontal Amplifier...10 cycles to 500 kc  
 Deflection Sensitivity:  
 Vert. Amplifier...0.18 RMS volt/in  
 Horizontal Amplifier...0.46 RMS volt/in  
 Sawtooth Time Base...20 cycles to 250 kc/sec  
 Triggered Time Base...Repetition to 50 kc/sec  
 Blanking...Return trace blanked on triggered definition  
 Power Supply...105/125 volts, 50/60 cycles  
 Dimensions...8¼" w; 14½" h; 16¼" deep

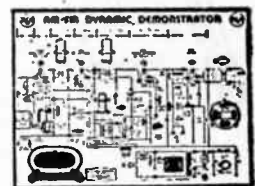
For detailed observation and accurate measurement of voltages produced by TV synch. and deflection circuits, ignition systems, pulse generators, etc. Wide horiz. deflection—up to twice screen diam. Calibrated meter for voltage measurements. Built-in delay line. Triggered sweep. Sugg'd User Price: \$550.00.



## AM-FM DYNAMIC DEMONSTRATOR WE-82A

Frequency Range...550-1600 kc  
 AM Intermediate Frequency...455 kc  
 RF (AM) Sensitivity...200 μv  
 FM Intermediate Frequency...10.7 Mc  
 Discriminator...Foster-Seeley  
 \*Reg. Trade Mark, U. S. Pat. Off.

A working schematic diagram of a typical 5-tube superheterodyne broadcast receiver. Has discriminator circuit for FM-if demonstration. Five color panels and numerous pin jacks facilitate demonstrations described in instruction booklet. Height, 33"; width, 45"; depth, 6". Shipping weight, 42 lbs. Price \$99.50.





# RCA TEST AND MEASURING EQUIPMENT

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## HIGH VOLTAGE PROBES WG-289, WG-290



The WG-289 and WG-290 Probes are identical except for their connectors. The WG-289 is provided with a microphone-type connector; the WG-290 is equipped with phone-tip connectors. Each Probe comes complete with cable, alligator-clip ground lead, and a complete instruction booklet. Five multiplier resistors are available (WG-206-207-208-209-210) and the proper type should be specified, using the type number recommended for your instrument in the instruction book.

Sugg'd User Price: \$9.95 complete

Add Important Extra Servicing Value to Your Volt-ohm-meter. Measure DC Voltages Up to 50 Kilovolts in High-Resistance Circuits.

- Measure DC Voltages in Television Sets, X-Ray Machines, and other High-Voltage Electronic Devices.
- Increase Input Resistance of VoltOhmyst Meter to at least 1,000 Megohms.
- Multiply VTVM Scale by a factor of 100 times.
- Multiplier Resistors available for all popular Volt-ohm-meters.

## RCA TV ISOTAP (WP-25A)



Here's a really useful tool for better, faster, and safer TV servicing. The RCA TV ISOTAP is an essential piece of test equipment for every television technician.

Consisting of a 500 volt-ampere auto-transformer winding and a 275 volt-ampere isolated secondary winding, the TV ISOTAP has all the advantages of an isolation transformer—plus the extra value of a heavy-duty transformer. Sugg'd User Price: \$16.50

Electrical (all voltages within  $\pm 5\%$ )

Primary Winding:  
 Line-Voltage Range .....105-130 volts  
 Switch Positions.....Off, 130, 125, 120, 115,  
 110, 105 volts  
 Frequency .....50-60 cycles

Secondary Winding:  
 With selector set to power line voltage  
 and no load on secondary.109, 120, 135 volts  
 With selector set to 130 volts, and with  
 a secondary load of 275 volt-amperes..105,  
 115, 130 volts

Continuous Operation  
 (at ambient temperature of 40° C)  
 Primary (autotransformer)...500 Max. Va.  
 Secondary (isolation).....275 Max. Va.

## ISOTAP ISOLATION TRANSFORMER (WP-24A)

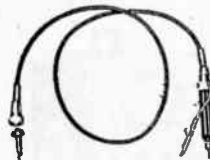


Eliminates shock hazard between ac-dc chassis and ground, speeds detection of receiver faults with high-low line tests, and facilitates testing of receivers at the design-center value of 117 volts. A six-position switch and three secondary receptacles afford maximum flexibility and operating convenience. Sugg'd User Price: \$8.95

Primary:  
 Line Voltage Range.....105-130 volts  
 Switch Positions.....105, 110, 115, 120,  
 125, 130 volts  
 Frequency.....50-60 cycles

Secondary:  
 Output Voltages (approx.).....105-117-130  
 Power Output at unity power factor (Max.):  
 Cont. Oper. (30°C Amb.).....100 watts  
 Intermitt. Oper. (30°C Amb.).....150 watts  
 Regulation (at 100 volt-amperes).....10%

## CRYSTAL PROBE (WG-263)



Makes any VoltOhmyst a VHF Volt-meter. Reads flat to 100 Mc. Adapts VoltOhmyst for HF, FM or TV test needs, within sensitivity range of the instrument. Withstands DC loads of 250 volts. Sugg'd User Price: \$8.95.

Input Voltage.....22 rms volts (max)  
 Frequency Range.....1000 cycles to 175 Mc  
 Frequency Response..... $\pm 10\%$  from 1 kc  
 to 100 mc  
 Overall Accuracy..... $\pm 7.5\%$  at full scale  
 Input Capacity.....3.5  $\mu\text{f}$

## DIODE PROBE (WG-275)



The RCA Diode Probe WG-275 is designed to operate in combination with RCA VoltOhmyst Electronic Meters WV-75A or WV-95A; it enables these instruments to read RMS peak-to-peak voltages at frequencies from 30 cycles to 250 Mc. The probe fits coaxial "T" connectors, and permits direct measurement of voltages in coaxial lines.

The full-wave circuit of the WG-275 eliminates errors inherent in half-wave probes for measurements of unsymmetrical waves.

Sugg'd User Price: \$30.00

## RACK-ADAPTER PANEL (WS-18A)

WS-18A Rack Adapter Panel for mounting any of the matched RCA Test Instruments in standard 19-inch relay racks . . . adds convenience and standardization to industrial test setups.

Dimensions, 10½" high, 19" wide, ½" thick

Finish, Umber Gray

Price: \$9.50



**MEASUREMENTS CORPORATION**

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## STANDARD SIGNAL GENERATOR - Model 82

20 CYCLES - 50 Mc.



**FREQUENCY RANGE:** 20 cycles to 200 kilocycles in four ranges. 80 kilocycles to 50 megacycles in seven ranges, plus one blank range.

**FREQUENCY ACCURACY:** Each range is individually calibrated. 20 cycles to 200 kilocycles, accurate to  $\pm 5\%$ . 80 kilocycles to 50 megacycles, accurate to  $\pm 1\%$ .

**OUTPUT VOLTAGE AND IMPEDANCE:** 0-50 volts across 7500 ohms from 20 cycles to 200 kilocycles. (The output voltage and impedance in this range can be reduced by an external attenuator). 0.1 microvolt to 1 volt across 50 ohms over most of the range from 80 kilocycles to 50 megacycles.

**MODULATION:** Continuously variable 0-50% from 20 cycles to 20 kilocycles from internal variable oscillator or external source.

**HARMONIC OUTPUT:** Less than 1% from 20 cycles to 20 kilocycles; 3% or less from 20 kilocycles to 50 megacycles.

**LEAKAGE AND STRAY FIELD:** Less than 1 microvolt from 80 kilocycles to 50 megacycles.

**POWER SUPPLY:** 117 volts, 50-60 cycles. 75 watts.

**DIMENSIONS:** 15" high x 19" wide x 12" deep overall.

**WEIGHT:** 50 pounds.

## STANDARD SIGNAL GENERATOR - Model 80

2 Mc. - 400 Mc.

**FREQUENCY RANGE:** 2 to 400 megacycles in 6 bands, individually calibrated direct reading dial.

**FREQUENCY ACCURACY:**  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 to 100,000 microvolts.

**OUTPUT IMPEDANCE:** 50 ohms.

**MODULATION:** Amplitude modulation is continuously variable from 0 to 30%. Modulation depth is indicated by a meter on the panel. An internal 400 or 1000 cycle audio oscillator is provided. Modulation may also be applied from an external source. Pulse modulation may be applied to the oscillator from an external source through a special connector.

**LEAKAGE AND STRAY FIELD:** Attenuator leakage less than 0.1 microvolt. Power line leakage less than 0.5 microvolt. Stray fields less than two microvolts.

**POWER SUPPLY:** 117 volts, 50 to 60 cycles. 70 watts.



## PULSE GENERATOR MODEL 79-B

This instrument is specially adapted for plate pulsing of the Model 80 Standard Signal Generator.

**FREQUENCY RANGE:** 60 to 100,000 pulses per second.

**PULSE WIDTH:** Continuously variable from 0.5 to 40 microseconds.

**OUTPUT VOLTAGE:** Approximately 150 volts positive with respect to ground.

**"SYNC" OUTPUT:** 75 volts positive with respect to ground. Displaced by  $\frac{1}{2}$  period from pulse output.

**"SYNC" INPUT:** May be synchronized with as little as 2 volts peak from an external source.

**POWER SUPPLY:** 117 volts, 50-60 cycles. 115 watts.

**DIMENSIONS:** 10" high x 13 $\frac{3}{8}$ " wide x 10 $\frac{1}{2}$ " deep, overall.

**WEIGHT:** Approximately 31 pounds.

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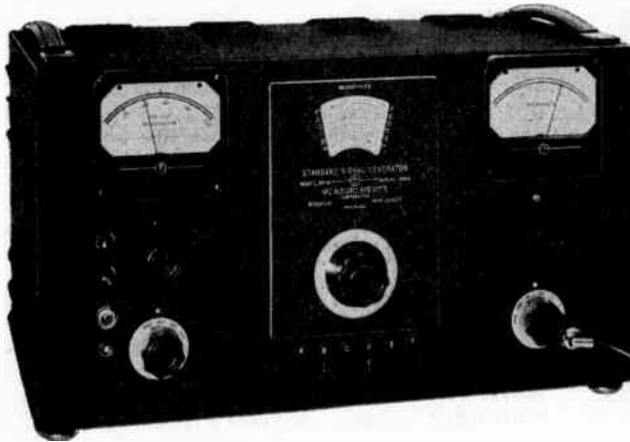


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*Laboratory Standards*

## STANDARD SIGNAL GENERATOR - Model 65-B

**75 Kc. - 30 Mc.**



**FREQUENCY RANGE:** 75 kilocycles to 30 megacycles in 6 push button ranges.

**FREQUENCY CALIBRATION:** The frequency dial is direct reading and individually hand calibrated for each range. It is accurate to  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 microvolt to 2.2 volts.

**OUTPUT IMPEDANCE:** 5 ohms to 0.2 volt, rising to 15 ohms at 2.2 volts.

**MODULATION:** Continuously variable from 0 to 100%. Modulation depth is indicated directly by a meter on the panel. Modulation may be obtained either from an internal source of 400 or 1000 cycles or from an external source.

**ENVELOPE DISTORTION:** Less than 4% at 100% modulation at 1 megacycle.

**LEAKAGE:** Less than 0.1 microvolt leakage with attenuator set for 0 output.

**POWER SUPPLY:** 117 volts, 50-60 cycles. 115 watts.

**DIMENSIONS:** 11" high x 20" long x 10 1/4" deep, overall.

**WEIGHT:** Approximately 55 pounds.

## FM STANDARD SIGNAL GENERATOR - Model 78-FM

**86 Mc. - 108 Mc.**

**FREQUENCY RANGE:** 86 to 108 megacycles, individually calibrated dials. Accurate to  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** 1 to 100,000 microvolts.

**LEAKAGE:** Less than 1 microvolt.

**MODULATION:** Deviation continuously variable from 0 to 300 kc. Indicated on directly calibrated dial. 400 cycle internal audio oscillator. Can be modulated from an external source providing 6 volts across 5000 ohms.

**FIDELITY:** Flat within two db from DC to 15,000 cycles. Distortion is less than 1% at 75 kilocycles deviation. Transient response is excellent.

**POWER SUPPLY:** 117 volts, 50 to 60 cycles. 36 watts.

**DIMENSIONS:** 10" high x 13" wide x 7" deep, overall.

**WEIGHT:** Approximately 25 pounds.

Special one-band Model 78-FM Signal Generators, with a tuning ratio of approximately 1.2 to 1, are available for use within the limits of 30 to 165 megacycles.



## I. F. CONVERTER - Model M-275

This instrument was designed for use with the Model 78-FM Standard Signal Generator to provide carrier output at the IF frequencies used in FM and Television receivers.

(Special Frequencies up to 23 Mc. available on order)

**CARRIER FREQUENCIES:** 4.5, 10.7, 21.7 Mc.

**OUTPUT VOLTAGE:** 10 microvolts to 1.0 v. when used with Model 78-FM.

**BAND WIDTHS:** 5% down,  $\pm 250$  Kc. from center frequency.

**AMPLITUDE MODULATION:** Provision for external AM up to approximately 80%, combined with, or exclusive of, FM. There is negligible spurious FM due to AM. The envelope distortion is less than 10% at 80% modulation.



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# MEGACYCLE METER

THE ONLY GRID-DIP METER COVERING  
THE WIDE FREQUENCY RANGE OF  
**2.2 Mc. to 400 Mc.**

- For determining the resonant frequency of tuned circuits, antennas, transmission lines, by-pass condensers, chokes or any resonant circuit.
- For measuring capacitance, inductance, Q, mutual inductance.
- For preliminary tracking and alignment of receivers.
- As an auxiliary signal generator; modulated or unmodulated.
- For antenna tuning and transmitter neutralizing, power off.
- For locating parasitic circuits and spurious resonances.
- As a low sensitivity receiver for signal tracing.
- As a beat-frequency oscillator in conjunction with a fixed frequency oscillator for measuring video or wide-band amplifier bandwidths.
- As an oscillating or absorption marker for use with a sweep-frequency oscillator.
- For transmitter or oscillator frequency checking by beat note method and absorption wave meter method.

*And Many Other Applications.*

## TELEVISION

The Model 59 is most useful in the construction and servicing of television receivers. It can be used for aligning video amplifiers, for peaking coils, sound traps, filters, stagger-tuned i.f.s, stagger-tuned amplifiers, sound i.f.s, local oscillators, carrier circuits, grid mixing circuits, etc. It is very effective for locating interference and for making traps and filters.



MODEL  
59



**FREQUENCY RANGE:** 2.2 megacycles to 400 megacycles with seven plug-in coils.

**FREQUENCY ACCURACY:** Individually calibrated dial, direct reading to an accuracy of  $\pm 2\%$ .

**OUTPUT:** CW or MCW. Modulation fixed at approximately 30%, 120 cycles.

**TUBES:** 1—Type 955  
1—Type OD3/VR150  
1—Type 5Y3GT

**DIMENSIONS:** Power unit:  $5\frac{1}{8}$ " wide,  $6\frac{1}{8}$ " high,  $7\frac{1}{2}$ " deep.  
Weight: approximately  $6\frac{1}{2}$  lbs.  
Oscillator unit:  $3\frac{3}{4}$ " diameter, 2" deep.  
Weight: approximately 1 lb.

**POWER SUPPLY:** 117 volts, 50-60 cycles, 20 watts.

Step-down transformer available for 220 volts, 50 cycle operation.

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## TELEVISION SIGNAL GENERATOR

### MODEL 90

*The first commercial wide-band, wide-range Signal Generator to be developed to meet the exacting standards of high definition television use.*

#### CARRIER FREQUENCY:

**RANGE:** Continuously variable from 20 to 250 megacycles, in eight ranges.

**ACCURACY:** Built-in crystal frequency standard permits setting to .01%. Dial scale may be set to 0.1%.

**STABILITY:** Warm-up drift less than .05%. Less than .01% after warm-up.

**LEAKAGE:** Less than 10 microvolts.

#### MODULATION:

Continuously variable from zero to 100%.

**ENVELOPE:** Sinusoidal, or composite television. Bandwidth to 3 db is 4 Mc. Rise time from 10% to 90% modulation 0.15 microsecond. Overshoot less than 5%. Slope less than 5% on 60 cycle square wave.

**INPUT IMPEDANCE:** 75 ohms  $\pm$  10% (RMA Standard)

**INPUT LEVEL:** 1.5 volts peak to peak minimum level for 100% modulation. Black negative polarity.

**MODULATION PERCENTAGE:** Zero to 110%; plate modulation.

#### OUTPUT:

**LEVEL:** Continuously variable from 0.3 microvolt to 0.1 volt balanced to ground (measured at 100% modulation level).

**IMPEDANCE:** (a) 107 ohms line to line (balanced).

(b) 53.5 ohms line to ground (unbalanced).

(c) Suitable pads may be employed to alter these impedances.

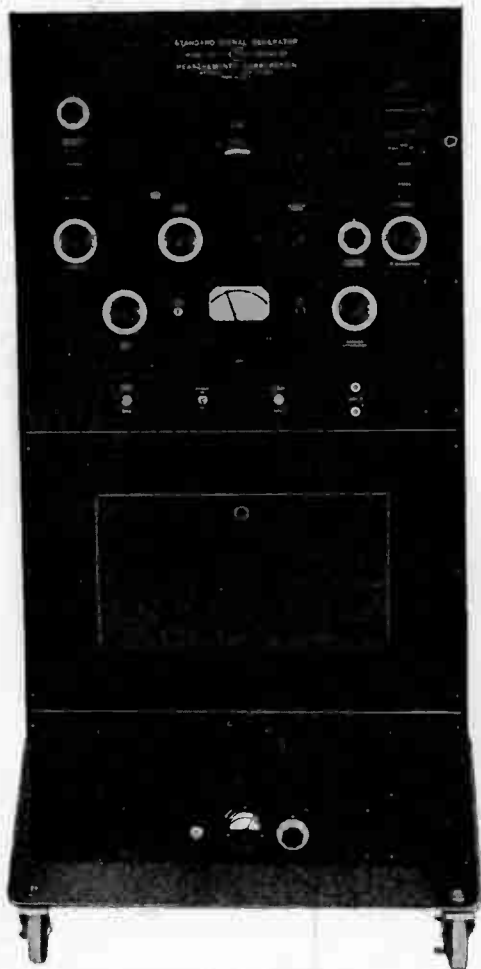
#### DIMENSIONS:

**OVERALL:** Height—58 $\frac{3}{4}$ " ; Width—28 $\frac{1}{4}$ " ; Depth—25 $\frac{1}{2}$ ".

**WEIGHT:** Model 90—302 pounds.

External Voltage Regulator: 92 pounds.

**POWER SUPPLY:** 117 volts, 60 cycles. 700 watts.



## CRYSTAL CALIBRATOR - Model 111

An extremely accurate instrument for the frequency calibration of equipment in the range of 250 Kc. to 1000 Mc.

**FREQUENCY ACCURACY:** 0.001 %

#### FEATURES:

- Provides test signals of crystal-controlled frequency.
- Has self-contained receiver with a sensitivity of 2 microwatts.

**USES:** Calibration and frequency checking of signal generators, transmitters, receivers, grid-dip meters and similar equipment where a high degree of frequency accuracy is required.



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## STANDARD SIGNAL GENERATOR - Model 84

**300 Mc. - 1000 Mc.**

**FREQUENCY RANGE:** 300 to 1000 megacycles, individually calibrated direct reading dial.

**FREQUENCY ACCURACY:**  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Continuously variable from 0.1 to 100,000 microvolts.

**OUTPUT IMPEDANCE:** 50 ohms.

**AMPLITUDE MODULATION:** Continuously variable from 0 to 30% indicated directly on panel meter. Internal sine-wave oscillator; choice of 400, 1000, or 2500 cycles is provided. External modulation up to 30 kilacycles may be applied.

**PULSE MODULATION:** Repetition rate continuously variable from 60 to 100,000 cycles. Pulse width continuously variable from 1 to 50 microsecs indicated on directly calibrated dial. Pulse delay (with respect to synchronizing output) continuously variable from 0 to 50 microsecs indicated on directly calibrated dial. May be synchronized with an external sine-wave or pulse source.



**POWER SUPPLY:** 117 volts, 60 cycles. 230 watts (with regulator).

**DIMENSIONS:** 12" high x 26" wide x 10" deep, overall.

**WEIGHT:** Approximately 135 pounds, including external line voltage regulator.

**ACCESSORIES:** Included with each instrument are four connecting cables and external voltage regulator.

## U. H. F. OSCILLATOR - Model 112

**300 Mc. - 1000 Mc.**



The Model 112 provides a signal source for the measurement of: standing waves on transmission lines; antenna patterns; filters; attenuators. Also for alignment and tracking of UHF receivers.

**FREQUENCY RANGE:** 300 to 1000 megacycles.

**FREQUENCY CALIBRATION ACCURACY:**  $\pm 0.5\%$ .

**OUTPUT VOLTAGE:** Maximum varies between 0.3 volt and 2 volts. Adjustable over 40 db range.

**OUTPUT SYSTEM:** 50 ohms.

**POWER SUPPLY:** 117 volts; 50-60 cycles; 60 watts.

**DIMENSIONS:** 12½" x 13½" x 8". Weight 22 lbs.

## VACUUM TUBE VOLTMETER - Model 62

**RANGE:** Push button selection of 5 ranges—1, 3, 10, 30 and 100 volts full scale AC or DC.

**ACCURACY:**  $\pm 2\%$  of full scale on each range, both DC and sine-wave AC.

**INDICATION:** Linear for DC and calibrated to indicate RMS values of a sine-wave or 71% of the peak value of a complex wave an AC.

**FREQUENCY ERROR:** Less than 10% from 30 cycles to over 150 megacycles. Resonant frequency of the probe with input terminals shorted is 350 megacycles.

**INPUT IMPEDANCE:** The input capacitance is approximately 7 mmf. The input resistance is a function of frequency.

**POWER SUPPLY:** 117 volts AC, 50 to 60 cycles.

**DIMENSIONS:** 4¾" wide x 6" high x 8½" deep overall.

**WEIGHT:** Approximately 8 pounds.



**MEASUREMENTS CORPORATION**

BOONTON · NEW JERSEY



MEASUREMENTS CORPORATION

Laboratory Standards

## U. H. F. RADIO NOISE and FIELD STRENGTH METER

### MODEL 58

This versatile, portable instrument is useful in measuring signal-to-noise ratios, noise levels and for field strength surveys on TV, FM and AM transmitters.

**FREQUENCY RANGE:** 15 to 150 megacycles in five bands—dial directly calibrated in megacycles.

**INPUT VOLTAGE RANGE:** 1 to 100,000 microvolts induced in antenna. 1 to 100 microvolts on semi-logarithmic output meter, balanced resistance attenuator with ratios of 10, 100 and 1000 ahead of all tubes.

**GAIN STANDARDIZATION:** Internal "shot noise" diode provides calibration standard. Special dial eliminates need for charts.

**CIRCUIT:** Superheterodyne circuit with tuned RF amplifier eliminates image response.

**BAND WIDTH:** 150 kilocycles @ 2X down.

**POWER SUPPLY:** Built-in regulated dual power supply for operation from either 117 volts AC or 6 volts DC. 70 watts (on AC).



**STANDARD EQUIPMENT:** Power cables, 15 foot antenna cable, 9 inch loop antenna, carrying strap, and complete instruction book.

**DIMENSIONS:** 16" wide x 9" high x 11" deep, overall.

**WEIGHT:** 35 pounds.

## SQUARE WAVE GENERATOR - Model 71



**POWER SUPPLY:** 117 volts, 50-60 cycles. 100 watts.

**DIMENSIONS:** 7" high x 15" wide x 7½" deep, overall.

**WEIGHT:** Approximately 20 pounds.

Recommended for television testing and many different applications in developing AM, FM and TV equipment where square-wave analysis is of great importance.

**FREQUENCY RANGE:** 6 to 100,000 cycles.

**WAVE SHAPE:** Rise time less than 0.2 microseconds with negligible overshoot at 75 peak volts output. At 5 volts or less rise time is less than 0.1 microsecond.

**OUTPUT VOLTAGE:** Step attenuator giving 75, 50, 25, 15, 10, 5 peak volts fixed and 0 to 2.5 volts continuously variable.

**SYNCHRONIZING OUTPUT:** 25 volts peak.

**R. F. MODULATOR:** 5 volts maximum carrier input. Transmittion gain is approximately unity—Output impedance is 600 ohms.

## PEAK-TO-PEAK VOLTMETER - Model 67

Designed for audio and video level measurements and the measurement of audio electrical interference. The Model 67 is ideally suited for uses where the indication of true peak values is required.

**VOLTAGE RANGE:** 5 ranges; .0005 to 300 volts peak-to-peak. (Approximately .0002 to 100 r.m.s. volts.)

**SEMI-LOGARITHMIC SCALES:** Hand calibrated; 0 to 30 peak-to-peak and 0 to 10 r.m.s. equivalent.

**FREQUENCY RANGE:** 5 to 100,000 sine-wave cycles per second.

**INPUT IMPEDANCE:** 1 megohm shunted by 30 mfd.

**STABILITY:** Less than 2% error with line variations from 110 volts to 120 volts.

**RECORDER TERMINALS:** For external one milliamperere graphic recorder or milliammeter.

**POWER SUPPLY:** 117 volts; 50-60 cycles, 35 watts.

**DIMENSIONS:** 7½" high x 7" wide x 8½" deep.

**WEIGHT:** 10 lbs.



MEASUREMENTS CORPORATION

BOONTON · NEW JERSEY

# Radio TRIPLET Testers

## MODEL 630 VOLT-OHM-MIL-AMMETER

### RANGES

- D. C. VOLTS: 0-3-12-60-300-1200-6000, at 20,000 Ohms/Volt  
(For greater accuracy on TV and other High Resistance Circuits.)  
A. C. VOLTS: 0-3-12-60-300-1200-6000, at 5,000 Ohms/Volt  
(For greater accuracy in Audio and other High Impedance AC Circuits.)  
DB.: -30, +4, +16, +30, +44, +56, +70  
(For Direct Reading of Output Levels.)  
D. C. MICROAMPERES: 0-60, at 250 M. V.  
D. C. MILLIAMPERES: 0-1.2-12-120, at 250 M. V.  
D. C. AMPERES: 0-12, at 250 M. V.  
\*OHMS: 0-1000-10,000 (4.4-44 at center scale)  
\*MEG OHMS: 0-1-100 (4400-440,000 Ohms center scale)

OUTPUT: Condenser in series with AC Volt ranges.

\*Resistance ranges are compensated for greatest accuracy over wide battery voltage variations. Series Ohmmeter circuits for all ranges to eliminate possibility of battery drain when leaving switch in OHMS position.

Streamlined Tester with large 5½" meter, flush with the panel. Unit construction—Resistors, shunts, rectifier, batteries—all housed in a molded base integral with the switch. Provides direct connections without cabling. Simple to operate—only one switch flush with panel surface, selects both circuit and range. Special 1% resistors are sealed in molded compartment. Batteries easily replaced—Balanced double-spring tension grip makes this operation simple. Assures permanent contact. Precalibrated rectifier for easy replacement.



Model 630

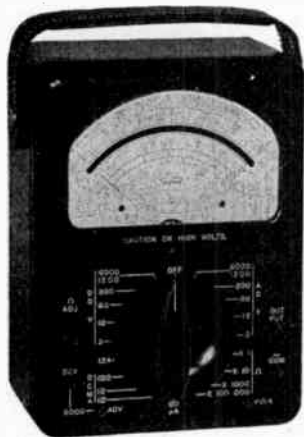
Enclosed selector switch of molded construction keeps dirt out. Retains contact alignment permanently. A Triplet design representing the culmination of a quarter-century of switch making experience.

This Volt-Ohm-Mil-Ammeter incorporating a 5½" instrument with 4% scale, has RED • DOT Lifetime Guarantee. Dial has

black markings on white except AC and OHM are red. A completely insulated, molded, black case, 3-7/32" x 5½" x 7½", and panel with engraved white markings. Leather strap handle.

Weight: 4 lbs.

MODEL 630. U.S.A. DEALER NET \$37.50



Model 630-A

## MODEL 630-A WITH MIRROR SCALE

A laboratory-type Volt-Ohm-Mil-Ammeter with mirrored, hand-drawn scales and greater accuracy made possible through the use of special ½% resistors. The long scales are hand-drawn for greater meter accuracy, and mirror-scaled for greater reading accuracy.

Model 630-A has the same ranges and other advanced design features as Model 630 described above.

Weight: 4 lbs.

MODEL 630-A. U.S.A. DEALER NET \$47.50

### CARRYING CASES For Models 630 and 630-A

CARRYING CASE MODEL 639-P, black leather, has adequate space for Model 630 or 630-A, instructions and accessories. Padded lining of ½" sponge rubber. Strong leather strap handle.

CARRYING CASE MODEL 639, black leather, strap handle. Adequate space for Model 630 or 630-A, instructions and accessories.

MODEL 639-P U.S.A. DEALER NET \$9.75

MODEL 639 U.S.A. DEALER NET \$5.75

## MIRROR SCALE VOLT-OHM-MIL-AMMETER

Widest range tester of its type with additional brand new features: Long 5" mirror scale for better reading accuracy; Resistance ranges to 40 Megohm; Low Ohm Range 0-2000 (12 ohms center scale); D. C. Volt ranges with dual sensitivity (10,000/20,000 Ohm/Volt) provide double the number of full scale readings of average testers. A. C. Volt ranges at 10,000 Ohm/Volt permit checking many audio and high impedance A. C. circuits where a vacuum tube voltmeter usually is required. Low voltage ranges permit direct measurement of many bias and output voltages. Special film type resistors provide greater stability on all ranges.

6" RED • DOT Lifetime guaranteed meter. Long mirror scale guarantees greater reading accuracy. Insulated, black molded case with removable strap handle, 2½" x 5½" x 6". Molded black panel with white markings. Leads and instructions furnished.

Weight: Approx. 3 lbs.

### 39 RANGES

- D. C. VOLTS: 0-1.25-5-25-125-500-2500, 20,000 Ohm/Volt  
0-2.5-10-50-250-1000-5000, 10,000 Ohm/Volt  
A. C. VOLTS: 0-2.5-10-50-250-1000-50.0, 10,000 Ohm/Volt  
D. C. MICROAMPS: 0-50, at 250 Millivolts  
D. C. MILLIAMPS: 0-1-10-100-1000, at 250 Millivolts  
D. C. AMPERES: 0-10, at 250 Millivolts  
OHMS: 0-2,000-200,000 (12-1200 center scale)  
MEG OHMS: 0-40 (240,000 ohms center scale)  
DECIBELS: -30, +3, +15, +29, +43, +55, +69.  
(Reference level "0" DB at 1.73 V. on 500 Ohm line.)

OUTPUT: Condenser in series with A. C. Volt ranges

Accessories available to special order for extending ranges: External pin jack shunts for D.C. Current ranges, resistors for A.C.-D.C. volt ranges.

MODEL 625-NA. U. S. A. DEALER NET \$45.00

### CARRYING CASE

Attractive black leather carrying case with strap handle. Leather flap folds over the top and snaps in place.

MODEL 629 CASE. U. S. A. DEALER NET \$5.50

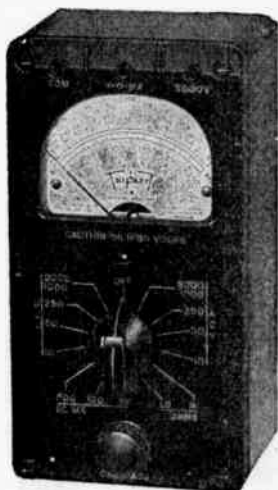


Model 625-NA

ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION

# Radio **TRIPOLET** Testers

## POCKET-SIZE VOLT-OHM-MILLIAMMETER



Model 666-HH

A precision-manufactured marvel of compactness that provides a complete miniature laboratory for D. C. and A. C. voltage, Direct Current and Resistance analyses. Its many ranges, attractive appearance and other unique features provide an answer to the Volt-Ohm-Milliammeter requirements of radio service-men and amateurs, industrial engineers, laboratory technicians, etc. Refinements in design feature:

Greater scale readability on the 3" RED • DOT Lifetime guaranteed instrument with black and red scale markings.

Simplified switching provides greater ease in changing ranges.

Lower jack contact resistance and trouble-free plug-in connections by use of banana-type jacks. Banana jacks at top of panel reduce possibility of connecting leads over panel controls or meter scales.

Greater stability on voltage ranges by use of special resistors throughout and on current ranges by use of 250 M. V. instrument.

### RANGES

D. C. VOLTS: 0-10-50-250-1000-5000, 1000 Ohm/Volt

A. C. VOLTS: 0-10-50-250-1000-5000, 1000 Ohm/Volt

D. C. MA: 0-10-100-500, at 250 Millivolts

OHMS: 0-2000-400,000 (12-2400 center scale)

Attractive new streamlined black molded case, completely insulated.  $3\frac{1}{8}'' \times 5\frac{1}{8}'' \times 2\frac{1}{8}''$ . Black molded panel with white markings. Battery self-contained, plug-in type, 1.5 V. Eveready No. 935 or equivalent. 50" test leads with clips and plugs furnished.

Weight:  $1\frac{1}{2}$  lbs.

Accessories available to special order for extending ranges: External pin jack shunts for Direct Current ranges, resistors for A.C.-D.C. volt ranges, battery and resistors for Ohms ranges.

MODEL 666-HH. U. S. A. DEALER NET \$22.00

### CARRYING CASE

Attractive black leather carrying case with strap handle. Leather flap folds over the top and snaps in place.

MODEL 669 CASE. U. S. A. DEALER NET \$4.75

## POCKET-SIZE VOLT-OHM-MIL-AMMETER

### RANGES

D.C. VOLTS: 0-10-50-250-1000-5000, at 1000 Ohms per volt

A.C. VOLTS: 0-10-50-250-1000-5000, at 1000 Ohms per volt

D.C. MA.: 0-10-100, at 250 M.V.

D.C. AMP.: 0-1, at 250 M.V.

OHMS: 0-3000-300,000 (20-2000 center scale)

MEGOHM: 0-3 (20,000 Ohm center scale) (Compensated Ohmmeter circuit.)

A New Pocket-Size Volt-Ohm-Mil-Ammeter with these latest specialized features meet your needs for A.C. and D.C. Voltage, Direct Current and Resistance analyses.

Enclosed selector switch of molded construction keeps dirt out. Retains contact alignment permanently. A Triplett design representing the culmination of a quarter-century of switch making experience. UNIT CONSTRUCTION—All resistors, shunts, rectifier and batteries housed in a molded base integral with the switch. Eliminates chance

for shorts. Direct connections. No Cabling. All precision film or wire-wound resistors are mounted in their own compartment—assures greater accuracy.

3" 0-200 Microammeter, 250 M.V., RED • DOT Lifetime guaranteed against defects in materials or workmanship. Red and black markings on a white background. Easy-to-read scale.

Pre-calibrated rectifier unit and batteries easily replaced. One 1.5 Volt Eveready #935 and two 1.5 Volt Eveready #915, or equivalent, self-contained.

Handy pocket-size, black molded case is completely insulated. Size:  $3\frac{1}{8}'' \times 5\frac{1}{8}'' \times 2\frac{1}{8}''$ . Leather strap handle. Black molded panel with engraved white markings.

Furnished complete with batteries, 50" test leads and instruction book at an amazingly low price.

Weight:  $1\frac{1}{2}$  lbs.

MODEL 666-R... U.S.A. DEALER NET... \$24.50

### CARRYING CASE

MODEL 669, black leather, strap handle, snap cover. . . . U.S.A. DEALER NET . . . \$4.75



Model 666-R

## SENSITIVE VOLT-OHM-MIL-AMMETER

### 20,000 OHMS PER VOLT

D. C. VOLTS: 0-10-50-250-500-1000, 20,000 Ohm/Volt

D. C. AMPS: 0-10, at 250 Millivolt

D. C. MILLIAMPS: 0-1-10-50-250, at 250 Millivolt

D. C. MICROAMPS: 0-50, at 250 Millivolt

A. C. VOLTS: 0-10-50-250-500-1000, 1000 Ohm/Volt

A. C. AMPS: 0-0.5-1-5-10, at 1 Volt-Amp

OHM-MEGOHM: 0-4000-40,000 Ohms — 0-4-40 Mex. (Self-contained batteries.)

OUTPUT: Condenser in series with A. C. Volt ranges

DECIBELS: —10 to +15, +20, +43, +49, +55. (Reference Level "0" DB at 1.73 V. on 5.0 Ohm line.)

CONDENSER TEST: Capacity check of Paper condensers

A perfect combination—ultra sensitive, extra large meter, impressively cased for either shop or portable use. Incorporates the ultimate sensitivity, 20,000 ohms per volt in a conventional meter of extreme accuracy.

6" Meter, RED • DOT Lifetime guarantee.  $5\frac{3}{4}''$  long scale enables easy reading. Plug-in, pre-calibrated rectifier simplifies replacement. Ruggedly constructed selector switch. "OHMS ADJUST" provides adjustment for all resistance ranges with maximum accuracy. Connections made through low contact resistance banana jacks. "SQUARE LINE" case.  $10'' \times 10'' \times 5\frac{3}{4}''$ , black enamel finish, has detachable, hinged cover. Leads and instructions furnished.

Weight: Approx. 11 lbs.

MODEL 2405-A..... \$59.75  
U. S. A. DEALER NET.....



Model 2405-A

ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION

# Radio **TRIPOLET** Testers



Model 3413

## TUBE TESTER

**CONCLUSIVE** tube tests for value, inter-element shorts and leakage. Fully-balanced, multi-purpose Emission type Circuit; with accurately calibrated values for all makes of tubes—more than an Emission test in the special switching flexibility.

**AN APPLIANCE CHECK** lead permits "short" and "continuity" test of motors, leads, resistance elements, etc. **NEON SHORT TEST** shows slightest inter-element short or leakage while cathodes are hot.

**TRIPLET** lever switching makes possible an exclusive combination of tube testing advantages including maximum circuit flexibility, simplicity of operation and anti-obsolence design; Thorough test of all tube elements; Individual control of each tube element; Faster and More Accurate; No plugging into wrong socket; Minimum number control settings.

**TUBES TESTED**—All receiving types, gaseous rectifiers, resistor and ballast tube continuity, and pilot lamps. **SOCKETS:** 4, 5 and 6 prong; 7 prong large and small with combination for pilot lights and flashlight bulbs; 8 prong octal; 8 prong octal; 5 prong bantam; 7 prong miniature; 7 prong subminiature; and 9 prong. Only one socket used for each tube base type. No possibility of plugging into the wrong socket.

**LINE VOLTAGE INDICATOR** permits observation and adjustment for line fluctuations. **FILAMENT VOLTAGES** (Full Range)—0.75 to 110 Volts. 6" meter with **RED • DOT** Lifetime guarantee, has 3-color **GOOD—?**—**BAD** scale. **SPEED ROLL TUBE CHART** (brightly illuminated) located with markings below switches for convenience in testing. New tubes can be calibrated without manufacturers' data.

Counter-Portable type case same size and description as Model 3480.  
Weight: 20 lbs.

MODEL 3413 ..... U.S.A. DEALER NET ..... \$66.75

## COMBINATION TUBE TESTER VOLT-OHM-MIL-AMMETER

**TUBE TESTER-VOLT-OHM-MIL-AMMETER**—A Combination Tester for conclusive tube testing and complete voltage, current and resistance analyses. Tube Tester has a fully-balanced, multi-purpose test circuit for emission, short and open element tests. See Model 3413 for complete details. **GOOD—?**—**BAD** tube testing and Volt-Ohm-Mil-Ampere ranges are easily readable on the 6" **RED • DOT** Lifetime Guaranteed meter with multi-color scale. Volt-Ohm-Mil-Amp. markings are black on white except A. C. are red and 0-1000 Ohms are green.

### VOLT-OHM-MIL-AMMETER RANGES:

**D. C. VOLTS:** 0-3-12-60-300-1200, at 10,000 Ohms/Volt  
**A. C. VOLTS:** 0-3-12-60-300-1200, at 2000 Ohms/Volt  
**D. C. AMPS:** 0-12, at 250 M. V.  
**D. C. MILLIAMPS:** 0-1.2-12-120, at 250 M. V.  
**OHMS:** 0-1000-10,000 (10-100 at center scale)  
**MEGOHMS:** 0-1-50 (10,000-500,000 Ohms at center scale)

**OUTPUT:** Output Jacks, condenser in series with A. C. ranges.

**COUNTER-PORTABLE** Case, metal. 15 11/32" x 11 1/32" x 6 1/8", finished in attractive baked-on "hammered" black enamel. Panel with white markings. Power supply—115 volt, 50-60 cycle A. C.

Weight: 25 lbs.

MODEL 3480 COMBINATION TESTER..U.S.A. DEALER NET..\$98.75



Model 3480

## F.M.-A.M. SIGNAL GENERATOR

**MODEL 3433** FM-AM Signal Generator with frequency coverage from 100 KC to 120 MC in 10 bands; plus additional 50 MC from fixed oscillator giving fundamental coverage continuously variable to 170 MC.

**OUTPUT** — 1 volt on low ranges from 100 KC to 20 MC and approximately 250,000 Microvolts on the high ranges.

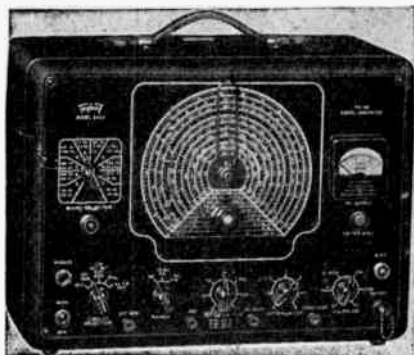
### SWEEP WIDTH VARIABLE IN THREE RANGES

60KC (+30KC)    300KC (+150KC)    600KC (+300KC)

Other outstanding engineering features include: (1)—Deviation control of a fixed frequency reactance modulated oscillator. (2)—Output Meter for measuring relative R. F. output of generator. (3)—Double copper plated steel shielding throughout greatly minimizes R. F. leakage. (4)—Co-axial cable output lead with shielded impedance coupler for direct capacitance or balanced doublet connection. (5)—110 Volt A. C. line filter prevents leakage through power supply. (6)—Ladder attenuator with coarse and fine R. F. output adjustment. (7)—High R. F. Voltage output jack. (8)—High A. F. output available. (9)—Built-in provision for crystal oscillator calibration reference. Crystal not supplied. (10)—Air trimmer capacitor and permeability adjusted oscillator coils. (11)—Voltage regulated power supply for oscillator stability. (12)—Heterodyne Detector for frequency measurement. (13)—External A. M. modulation may be used. (14)—Attractive and easily read dial. (15)—Horizontal synchronized sweep voltage available. (16)—Best available components used throughout.

Metal case, 15 1/2" x 11 1/2" x 8 3/4", finished in lustrous black suede enamel with red and white panel markings. Power: 115 Volt, 50-60 cycle A. C. Weight: 25 lbs.

MODEL 3433 ..... U. S. A. DEALER NET ..... \$178.25

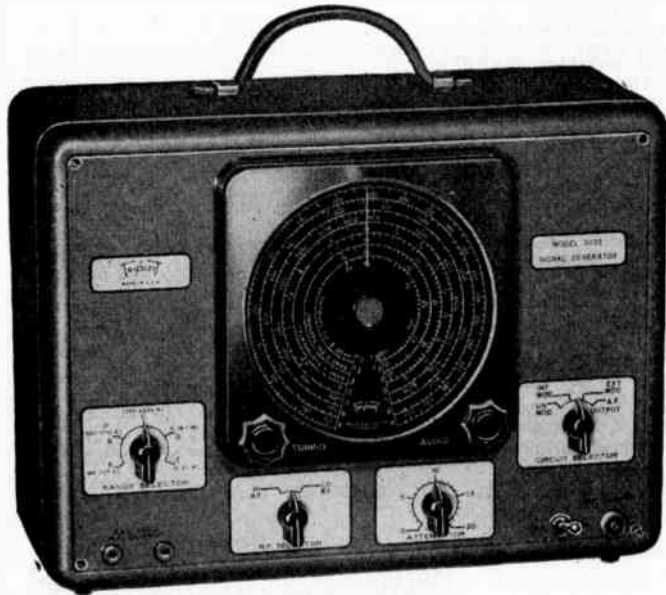


### 10 VARIABLE FREQUENCY BANDS

A—100-200 KC	F—3.5-7 MC
B—200-400 KC	G—7-14.5 MC
C—400-820 KC	H—14.5-27.5 MC
D—820-1700 KC	I—27.5-55 MC
E—1.7-3.5 MC	J—55-120 MC

(170 MC output available by adding the 50 MC fixed oscillator signal to 120 MC signal.)

**ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION**



Model 3432

A—165-525 KC  
B—500-1750 KC  
C—1700-6200 KC  
D—6-18.5 MC

**RANGES**

E—18-40 MC  
Harmonics to 120 MC  
E2—36-80 MC  
E3—54-120 MC

## TEST OSCILLATOR

A wide-range oscillator with uniformly illuminated dial. Seven long scales with widely separated divisions easily read, have five fundamental ranges—165 KC to 40 MC, and two harmonic ranges directly calibrated 36 to 120 MC.

Unique new feature is the brightly illuminated dial providing distinct illumination of scale markings without the least possibility of glare. Lighting also provides an "ON-OFF" indicator.

The dial is big (330°) with seven scales quickly readable at a glance. It has 10 to 1 ratio vernier tuning for ease of adjustment.

**RANGE SELECTOR** — 5 position follow-up coil switching with complete shielding.

**R. F. SELECTOR** — Provides High and Low R. F. Output.

**OUTPUT ATTENUATOR** — Provides fine control of R. F. Output to Coaxial output cable connector.

**CIRCUIT SELECTOR** — Provides for internally modulated signal (Variable 0 to 100% at 400 cycles). Variable amplitude of external modulation 40 to 15,000 cycles, unmodulated signal or variable audio 0-10 Volts at 400 cycle.

**DOUBLE SHIELDING**—All R. F. and audio circuits are double shielded with copper plated steel shields.

Metal case, 15½"×11½"×6¼", with black enamel finish. Has leather strap handle for ease in carrying. Power: 115 volt, 50-60 cycle A. C. (electrostatic shielded transformer).

Weight: 14½ lbs.

MODEL 3432.....U. S. A. DEALER NET \$69.50

## APPLIANCE TESTERS



Model 2470

**RANGES**

A. C. WATTS: Single-phase: 130 V. 0-10-20-250-500-1000-2000; 260 V. 0-20-40-500-1000-2000-4000; Three-phase: 260 V. 0-80-2000-4000-8000;

A. C. CURRENT: 0-0.13-0.26-3.25-6.5-13-26 Amps.

A. C.-D. C. VOLTS: 0-130-260

Large 6" Electro-dynamometer type Meter, RED ● DOT Lifetime Guarantee, with 5.6" scale. Metal case, 10" x 10" x 5½", finished in black "hammered" enamel with white markings on the panel. Hinged, detachable cover has compartment for accessories and leads. One set 5 ft. (Two-Wire) leads with male plug at one end and terminals at other end for connection to tester binding posts; one set 2½ ft. leads with dual socket at one end and terminals at other end for connection to tester binding posts.

Weight: Approx. 11 lbs.

MODEL 2470.....U.S.A. DEALER NET.....\$76.75

Electrical Circuit Analyzer for measuring power wattage, current consumption and line voltage of all household appliances and small motors under actual operating conditions, including ranges operating on 220-Volt single phase three-wire and three phase three-wire systems. Power used by the smallest appliance is readily checked on the extremely low scale range of 0-20 Watts (fused to prevent damage from accidental overload). All switches and leads can continuously carry full load.

Models 2002 and 2000-A show power consumption of industrial equipment, radios, electric ranges, refrigerators, washers and other household appliances under actual running conditions, on either D.C. or A. C. between 25 and 133 cycles. Checks Watts and Volts simultaneously! Shows if voltage remains within limits under operating loads. Simple operation, clearly marked switches, easy reading dial. Leather carrying case 6½" x 4½" x 3¼", with strap handle, has flap cover to protect meter which is fixed in the case. Space for leads. Leather case eliminates possibility of scratching enamel appliance finishes.

Weight: 2 lbs.

MODEL 2002.....U.S.A. DEALER NET.....\$85.75

Ranges: 0-1500-3000 Watts A.C.-D.C. at 10 Amp. normal, 20 Amp. max., 40 Amp. momentary; 0-130-260 A.C.-D.C. Volts.

MODEL 2000-A.....U.S.A. DEALER NET.....\$34.75

Ranges: 0-750-1500 Watts A.C.-D.C. at 5 Amp. normal, 10 Amp. max., 20 Amp. momentary; 0-130-260 A.C.-D.C. Volts.

Models 2005-2006 — designed for those preferring Voltmeter-Ammeter method of testing household appliances and industrial applications. Simultaneous line voltage and current drain readings.

MODEL 2005.....U.S.A. DEALER NET.....\$83.00

Ranges: 0-10 A.C.-D.C. Amp.; 0-130-260 A.C.-D.C. Volts.

MODEL 2006.....U.S.A. DEALER NET.....\$83.00

Ranges: 0-25 A.C.-D.C. Amp.; 0-130-260 A.C.-D.C. Volts.



Model 2002

ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION

# Radio

# TRIPLET

# Testers



**Model 3435  
FREQUENCY COVERAGE**

Sweep Center Frequency:  
 Range 1— 0- 60 MC (Fundamental)  
 Range 2— 60-120 MC     "  
 Range 3—120-240 MC (Harmonic)  
 Sweep Width: .1-12 MC (Continuously Variable)

## QUALITY-ENGINEERED, LOW COST TV-FM SWEEP SIGNAL GENERATOR

MODEL 3435 answers your needs for a quality engineered TV-FM Sweep Signal Generator at an unusually low price. Designed particularly for the service engineer who has his own provision for an external Marker (any good AM Generator).

Buying this sensational new Model will enable you to materially reduce your investment in a Sweep Signal Generator, if you have a good AM Signal Generator to use as the Marker. Connection of external Marker is made simply and quickly through a panel connector. If you do want an external Marker see Triplet Models 1235 Variable Marker or 1236 Crystal Marker.

Model 3435 provides continuous range coverage to 240 MC for all TV Carrier and IF frequencies. No gaps in frequency. Continuous tuning is provided over all TV-FM bands. Continuously variable sweep width control. Sweep at any width between .1 to 12 MC. Phase controlled sweep voltage for scope horizontal input. Main frequency dial marked with channels as well as frequencies. Uniformly lighted dial—large and easy to read. Standby switch for temporary silencing of Generator during other work on equipment under test. Shielding and wiring designed for good control over output. Copper plated steel construction throughout. Miniature tubes used for high frequency circuits. Stability increased by use of ceramic trimmers, zero temperature coefficient capacitors, silver plated coils, and rugged construction.

Metal case with black suede enamel finish, 15½" x 11½" x 6¼". Leather handle. Copper plated feet for improved grounding when working over metal work bench top. Panel has black, white and red characters etched on aluminum.

Accessories—Co-Axial cables for low-loss RF output. Heavy braid ground strap. Rubber covered lead for Sync output or additional ground. Balanced 300 ohm output cable.

Power—105-115 Volts, 50-60 Cycles, 25 Watts. Wt.: 15 lbs.  
**MODEL 3435—U.S.A. DEALER NET \$99.50**

## ABSORPTION TV-IF MARKER



**Model 1235**

Frequency Coverage:  
 9.5 to 50 MC in two bands.  
 Triplet first to provide:  
 Control over amplitude of  
 Marker dip.

Standby feature. Removed  
 from circuit by merely turning  
 switch.

Other special features:  
 May be used with any type  
 Sweep Generator.

Two tuning ranges providing  
 complete coverage of  
 all present TV-IF frequen-  
 cies and ample provision  
 for the future.

Designed as companion unit  
 for 3435 Sweep Generator.

Although designed as a companion unit for Triplet Model 3435 Sweep Signal Generator, it can be used with any Sweep Generator as an external Marker. There are no complications in use, for connection is made quickly and easily through a panel connector. A standby switch is provided for temporary silencing of Generator during other work on equipment under test. Attenuation—continuously variable from 0 to maximum of Marker dip.

Copper plated steel construction throughout. Large 4" dial has two easy-to-read scales etched on the dial.

Metal case, with black suede enamel finish, 7¾" x 6½" x 4½". Metal handle. Copper plated feet for improved grounding when working over metal work bench top. Panel is black and red etched on aluminum.

Accessories—Co-Axial cable for low-loss connection to Sweep Generator. Coaxial cable for connection to test setup.

Power: None required. Weight: 4 lbs.  
**MODEL 1235 . . . . . U.S.A. DEALER NET . . . . . \$24.50**

## NEW CRYSTAL MARKER

Frequency Coverage:  
 Up through 19 MC on  
 crystal (fundamentals)  
 Up through 216 MC on  
 crystal (harmonics)  
 (Crystals not included.)

Model 1236 provides  
 Marker frequencies of crys-  
 tal controlled accuracy for  
 TV, IF or RF require-  
 ments. By purchasing  
 ONLY those crystals needed  
 for a particular TV service  
 area and the most-used IF  
 frequencies, this new unit  
 provides utmost Marker ac-  
 curacy and offers a speedy  
 selection of the desired  
 crystal-controlled signal.

This Marker saves plenty  
 of time in checking band-  
 pass characteristics of  
 curves—simply throw the  
 switch to the desired crys-  
 tal—eliminating delays resulting from constant tuning and  
 retuning required in the use of variable markers. Signals for the  
 most accurate and fastest means of aligning local oscillators in  
 TV receivers and many other applications. When using a 1 MC  
 crystal, Model 1236 becomes a standard for checking other signal  
 generators or receivers.

Designed as a companion unit to Triplet 3435, it receives its  
 power by plugging into a panel jack in the Sweep Generator.

Attenuation—Low impedance single control T-pad attenuator,  
 continuously variable. Shielding—Copper plated steel construction  
 throughout. Stability—Increased by use of latest high-frequency  
 techniques.

Metal case, black suede enamel finish, 7¾" x 6½" x 4½".  
 Metal handle. Copper plated feet. Black, red and aluminum  
 etched panel.

Accessories—Coaxial cable for low-loss connection to Sweep  
 Generator.

WEIGHT: 8½ lbs.  
**MODEL 1236 . . . . . U.S.A. DEALER NET . . . . . \$19.50**



**Model 1236**

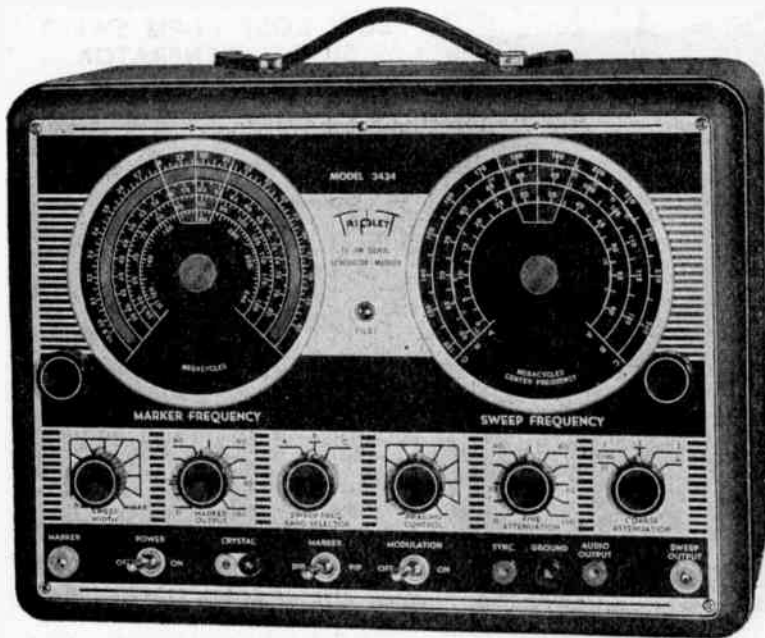
**ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION**



# Radio



# Testers



Model 3434

**A FEW REASONS YOU'LL WANT MODEL 3434**

- ★ Continuously variable sweep width from 100 KC to 12 MC.
- ★ Main frequency dial marked with channels and frequencies.
- ★ Variable Marker provides continuous tuning over all present TV Video and Sound IFs. Mirrored dial.
- ★ Absorption type Marker in addition to pip type.
- ★ Straight-line frequency calibrated dials.

**NEW 5" TV-FM OSCILLOSCOPE TAILORED FOR TELEVISION**

**VERTICAL AMPLIFIER**

Frequency Range—Flat within  $\pm 20\%$ .  
 20 Cycles to 1 MC with deflection sensitivity of .09 RMS Volts/Inch  
 20 Cycles to 100 KC with deflection sensitivity of .009 RMS Volts/Inch

**HORIZONTAL AMPLIFIER**

Frequency Range—Flat within  $\pm 20\%$  from 20 Cycles to 250 KC.  
 Deflection sensitivity—.5 RMS Volts/Inch

**INPUT IMPEDANCE**—Vertical Amplifier—2 Megohms in parallel with 25 MMF.  
 Horizontal Amplifier—2 Megohms in parallel with 25 MMF.

**MAXIMUM INPUT POTENTIAL**

Vertical Amplifier—400 Volts max. DC or Peak.  
 Horizontal Amplifier—400 Volts max. DC or Peak.

**LINEAR TIME BASE**—10 c.p.s. to 60 KC.

**INTENSITY MODULATION**—Return trace eliminator.

**SYNCHRONIZING SIGNAL**—.1 RMS Volt required.

**CALIBRATING METER**—Calibrated in Peak-to-Peak Volts: 0-3, 0-10.

**PHASE HORIZONTAL SWEEP**—Phase controlled Sweep voltage of line frequency.

**VERTICAL PATTERN**—Provides selection of polarity to be observed.

**ATTENUATION**—Coarse and fine control over Vertical Input. Fine control over Horizontal Input.

**SIGNAL TRACING** feature provided by Headphone Output. Enables detection of hum modulation, spurious interference, etc.

**ESCUTCHEON**—Telescoping to provide shaded Cathode Ray Tube. Large 5" Cathode Ray Tube.

**SHIELDING**—Copper plated steel construction throughout.

**CASE**—Metal, with black suede enamel finish, 15 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 16". Leather handle. Copper plated feet for improved grounding.

**PANEL**—Black, red and white characters etched on aluminum.

**ACCESSORIES**—Co-Axial lead for Vertical Input. Rubber covered leads for Sync, Horiz. Input and Ground. Heavy braid grounding strap. High Frequency probe for Signal Tracing.

**POWER**—105-115 Volts, 50-60 Cycles, 80 Watts. **WEIGHT**—20 lbs.  
**MODEL 3440** . . . . . U.S.A. DEALER NET . . . . . \$189.50

**ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION**

**A NEW TV-FM SWEEP SIGNAL GENERATOR WITH BUILT-IN MARKERS**

**FREQUENCY COVERAGE**

Sweep Center Frequency: Range 1— 0- 60 MC  
 Range 2— 60-120 MC  
 Range 3—120-240 MC

Sweep Width: .1-12 MC (Continuously Variable)

Marker Frequency: 19.5- 40 MC (Fundamental)  
 39 -240 MC (Harmonic)

Crystal Frequency: To 20 MC (Fundamental)  
 Can be used to produce Harmonics to 216 MC. (Crystals not furnished.)

Modulation: 400 Cycles on both Crystal and Marker frequencies.

Audio: 400 Cycles.

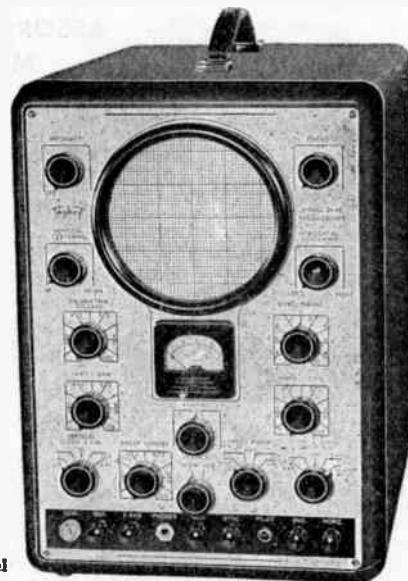
Model 3434 provides a complete service laboratory for TV-FM servicing and other electronic requirements. No gaps in frequency. Continuous tuning over all TV-FM bands. Provisions for simultaneous presentation of two Markers. Audio output for quick check on video and sound amplifiers. Ladder type attenuator for coarse and fine output adjustment. Shielded. Copper plated steel construction throughout. Modulation of Markers to facilitate alignment of traps, etc. Line filter. Phase controlled sweep voltage for scope horizontal input. Stability increased by ceramic trimmers, zero temperature coefficient capacitors, silver plated coils, regulated power supply and rugged construction.

Attractive steel case, black enamel suede finish, 15 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 8 $\frac{1}{4}$ ". Copper plated feet for improved grounding. Black, white and red etched markings on aluminum panel.

Accessories—Co-Axial cables for low-loss RF output. Heavy braid strap. Rubber covered lead for audio and sync output or additional ground.

Power: 105-115 Volt, 50-60 Cycle, 55 Watts.  
 Weight: 23 lbs.

**MODEL 3434—U.S.A. DEALER NET \$149.50**



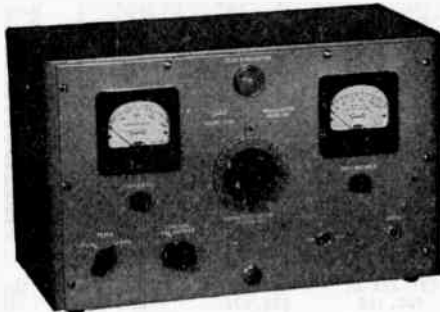
Model 3440

**SPECIALIZED FEATURES:**

- ★ Wide Frequency Range: 20 Cycles to 1 MC.
- ★ Provision for changing polarity to vertical input amplifiers—keeps wave form on Cathode Ray tube showing in conventional manner. (Exclusive Triplet feature!)
- ★ Calibrated meter for comparison voltage measurements.
- ★ Return trace eliminator.

## RADIO AMATEUR EQUIPMENT

### MODULATION MONITOR



Model 3296

With this new MODULATION MONITOR for radio amateur, police and Marine radiophone use, you've solved the problem of getting maximum efficiency from your transmitter. Four separate circuits for measuring amplitude modulation: (1) Percent Modulation (average). (2) Peak Flash Percent Modulation. (3) Carrier Shift. (4) Audio Output for Headphone. Unique advantages of this new model include the following: Peak Indicator may be preset for any percent of modulation from 20-120, and provides instantaneous flash when predetermined modulation level is reached. Percent modulation meter provides rapid up and slow down swing. Plug into your A. C. line—make simple coupling to the transmitter output and the monitor is ready for operation. R. F. and A. F. stages are isolated and separated by ample shielding. Tuned input circuit is coupled to R. F. source by a vario-coupler. R. F. power requirements are small.

**TUNING RANGES:** 1550-2950 KC (Police Band) 14,000-14,400 KC  
3500-4000 KC 28,000-30,000 KC  
7000-7300 KC Audio Frequency  
60-10,000 CPS

CASE: Metal, with dark gray "hammered" enamel finish; overall dimensions: 15½"×9"×8". Weight: 20 lbs. Power: 115 Volt, 50-60 cycle A. C.

MODEL 3296.....U. S. A. DEALER NET \$109.75

### VU METER

Volume Unit and Decibel Meters are used to measure sound or noise levels in amplifiers for Public Address, Theatres, Broadcasting Studios, Broadcasting Static Equipment, etc.

VU Meters are used for volume level measurements—including broadcast monitoring. Ballistic characteristics comply with standardization recommendations of NBC and CBS and Bell Telephone Laboratories. Internal impedance 3900 Ohms. Steady state reference 1 Milliwatt. For 600 Ohm line. Dynamic characteristics provide for 99% full scale deflection in .3 seconds. Specify scale type when ordering:

Type "A": 0-100 (black) —20 to +3 VU on top arc (red).  
Type "B": 0-100 (black) —20 to +3 VU on bottom arc (red).

	Net Price
Model 426 VU .....	\$16.60
Model 426 VU (Illuminated) .....	18.60
Model 327-T VU .....	15.00
Model 327-T VU (Illuminated) .....	16.40

DB Meters permit the operator of public address systems, etc., to make instant adjustments to prevent sound blasting or distortion. General purpose type reads up 6 and down 10 decibels. Zero decibel = 1.73 Volts. Calibrated for use on a 500 Ohm line. Reference level 6 Milliwatts. Resistance: 5000 Ohms. They consist of a sensitive D. C. instrument coupled to a copper-oxide rectifier. Standard damping is provided unless highly damped instruments are specified. Quotation on request.

	Net Price
Models 321-T or 327-T .....	\$11.30
Models 321-T or 327-T (Illuminated) .....	12.70
Models 421 or 426 .....	12.90
Models 421 or 426 (Illuminated) .....	14.90

### HIGH RANGE D.C. VOLTMETERS FOR AMATEURS

Designed particularly for radio amateurs. High range 3" D. C. Voltmeters—1000 ohms per volt. Provided with special external metalized multipliers mounted on bakelite strip. Specify this type when ordering, or standard voltmeters will be furnished. Available 3" case, Models 321-T, 327-T:

Range	Price	Range	Price
0-1000.....	\$11.90	0-4000.....	\$11.90
0-2000.....	11.90	0-5000.....	12.80
0-3000.....	11.90		

### FREQUENCY METER

A new band-switching, tuned Absorption type Frequency Meter covering five amateur bands. Incorporates the new germanium crystal and a D. C. Milliammeter indicator for greater sensitivity. Direct calibration on panel—no coils to change; switching permits instantaneous band change. Audio jack is provided for monitoring of phone signals—another new feature. Fully shielded. Calibration is in megacycles in the following bands: 3.5-4 MC; 7-7.3 MC; 14-14.4 MC; 20-21.5 MC; 28-30 MC. Coil is removable and other coils may be substituted for special bands, if desired.

**USEFUL FOR CHECKING:** (1) Fundamental frequency of oscillating circuits. (2) Presence, order and amplitude of harmonics. (3) For parasitic oscillations. (4) Neutralization of R. F. amplifiers. (5) Standing wave ratio on transmission lines. (6) Presence of undesirable or small quantities of R. F. (7) Monitoring of phone signals.

A fully shielded unit of compact pocket size. Overall height, including coil, 7½"; width 2½"; depth 2¼". Attractive gray "hammered" enamel finish with black trim.

MODEL 3256.....U. S. A. DEALER NET \$16.25



Model 3256

### WATTMETERS — ELECTRODYNAMOMETER

These instruments can be used on single phase A. C. or D. C. as Wattmeters. On special order they can be made up as voltmeters or ammeters. Instruments are self-contained to 300 Volts—10 Amperes. Over that external connection can be made. For use on frequencies up to 133 cycles per second. Available in three-inch model 361. Case dimensions same as 321-T, except for depth, 2" back of the flange (2¼" over studs). Wattmeters can be combined in the Triplitt Twin case with a voltmeter or Ammeter. Accuracy within ±2%. Standard ranges as follows:



#### MODEL 361 — SINGLE PHASE

Range Watts	Normal Voltage	Normal Amps.	Se. Div.	Net Price
0-75	150	½	75	16.00
0-150	150	1	75	16.00
0-300	150	2	60	16.00
0-750	150	5	75	16.00
0-1500	150	10	75	16.00
0-150	300	½	75	17.60
0-300	300	1	60	17.60
0-600	300	2	60	17.60
0-1500	300	5	75	17.60
0-3000	300	10	60	17.60

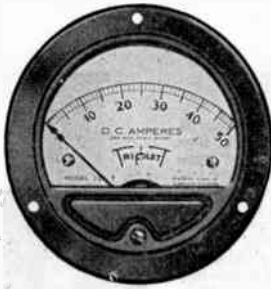
#### DOUBLE RANGE WATTMETERS (Double Voltage Limits Only)

Range	Normal Voltage	Normal Amps.	Se. Div.	Net Price
0-75-150	150-300	½	75	21.60
0-150-300	150-300	1	75	21.60
0-300-600	150-300	2	60	21.60
0-750-1500	150-300	5	75	21.60
0-1500-3000	150-300	10	75	23.40

### SENSITIVE RELAYS

Highly sensitive Triplitt relays of the D'Arsonval moving coil type, are carefully designed to give dependable, satisfactory performance. Since relays cover such a wide field and most of them are made to special order, no standard models are listed. Contacts are normally rated at 25 Milliamperes, 25 Volts; higher ratings if required. Instrument relays are provided in 2", 3" or Twin cases. Years of instrument experience are available to every relay user through Triplitt's extensive service. Send us your applications with information specifying maximum and minimum currents and voltages which will pass through relay coil and contact points, etc.

ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION



Models 221-T, 231-S, 241-T;  
222-T, 232-S, 242-T; 321-T,  
331-S, 341-T; 322, 332, 342

Models		Scale Lengths		Flange	Body Dia.	Body Depth		Case Material
D. C.	A. C.	D. C.	A. C.			D. C.	A. C.	
221-T	231-S	1.76"	1.58"	2 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
222-T	232-S	1.76"	1.58"	2 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
223-T	233-S	1.76"	1.58"	2 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
227-T	237-S	2.49"	2.29"	2 1/8" Sq.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
321-T	331-S	2.49"	2.29"	3 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
322	332	2.49"	2.29"	3 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
324	334	2.49"	2.29"	3 1/8" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
327-T	337-S	2.49"	2.29"	3 1/8" Sq.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
421	431	3.11"	2.78"	4 1/4" x 3 3/8"	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
421-A	431-A	3.11"	2.78"	3 1/8" x 3 3/8"	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
422	432	3.11"	2.78"	4 1/4" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
426	436	3.11"	2.78"	4 1/4" x 4 1/8"	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
420	430	4.28"	3.6"	4 1/4" x 4 1/8"	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
521	531	3.11"	2.78"	5 1/4" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
524	534	3.11"	2.78"	4 1/4" Dia.	2 3/8"	1 3/8"	1 3/8"	Molded Metal*
626	636	5.6"	5.3"	6" x 5 3/8"	3 1/4"	1 3/8"	1 3/8"	Molded Metal*
726	736	6"	5.75"	7 1/2" x 6 3/8"	3 1/4"	1 3/8"	1 3/8"	Molded Metal*

\*Molded base.



Models 227-T, 237-S, 247-T;  
327-T, 337-S, 347-T

### D.C. VOLTMETERS — 125 Ohms per Volt

Range	Models 221-T, 222-T, 223-T, 227-T		Models 321-T, 322, 324, 327-T		Models 420, 421, 421-A, 422, 426		Models 521, 524		Model 626		Model 726	
	0-5	\$ 5.80	\$ 6.80	\$ 6.80	\$ 8.40	\$ 8.40	\$ 9.20	\$ 9.20	\$ 10.30	\$ 10.30	\$ 16.20	\$ 16.20
0-10	5.80	6.80	6.80	8.40	8.40	9.20	9.20	10.30	10.30	16.20	16.20	
0-25	5.80	6.80	6.80	8.40	8.40	9.20	9.20	10.30	10.30	16.20	16.20	
0-50	5.80	6.80	6.80	8.40	8.40	9.20	9.20	10.30	10.30	16.20	16.20	
0-100	5.80	6.80	6.80	8.40	8.40	9.20	9.20	10.30	10.30	16.20	16.20	
0-150	5.80	6.80	6.80	8.40	8.40	9.20	9.20	10.30	10.30	16.20	16.20	
0-300	7.60	8.60	8.60	10.20	10.20	11.00	11.00	12.10	12.10	18.00	18.00	

### D.C. VOLTMETERS — 1000 Ohms per Volt

0-10	\$ 8.40	\$ 9.40	\$ 11.00	\$ 11.80	\$ 12.10	\$ 12.90	\$ 13.20	\$ 19.10	\$ 19.10
0-150	8.70	9.70	11.30	12.10	12.10	13.20	13.20	21.20	21.20
0-300	10.80	11.80	13.40	14.20	14.20	15.30	15.30	22.60	22.60
0-500	12.20†	13.20	14.80	15.60	15.60	16.70	16.70	22.60	22.60
0-1000	25.20*	26.20*	27.80*	28.60*	28.60*	29.70*	29.70*	35.60*	35.60*

125 Ohms/Volt sensitivity supplied unless otherwise specified on order. † Instruments supplied with External wire-wound series resistors at prices shown. \* Supplied with external resistor boxes at prices shown above. All other instruments are self-contained.

### D.C. MICROAMMETERS

0-20	\$12.60	\$13.60	\$15.20	\$16.00	\$17.10*	\$23.00*
0-50	9.90	10.90	12.50	13.30	14.40*	20.30*
0-100	9.40	10.40	12.00	12.80	13.90*	19.80*
0-200	7.90	8.90	10.50	11.30	12.40	18.30
0-500	7.30	8.30	9.90	10.70	11.80	17.70

\* Supplied with knife-edge pointer.

### D.C. MILLIAMMETERS

0-1	\$ 6.90	\$ 7.90	\$ 9.50	\$10.30	\$11.40	\$17.30
0-15	5.80	6.80	8.40	9.20	10.30	16.20
0-25	5.80	6.80	8.40	9.20	10.30	16.20
0-50	5.80	6.80	8.40	9.20	10.30	16.20
0-100	5.80	6.80	8.40	9.20	10.30	16.20
0-150	5.80	6.80	8.40	9.20	10.30	16.20
0-200	5.80	6.80	8.40	9.20	10.30	16.20
0-250	5.80	6.80	8.40	9.20	10.30	16.20
0-300	5.80	6.80	8.40	9.20	10.30	16.20
0-500	5.80	6.80	8.40	9.20	10.30	16.20

### D.C. AMMETERS

0-1	\$ 5.80	\$ 6.80	\$ 8.40	\$ 9.20	\$10.30	\$16.20
0-10	5.80	6.80	8.40	9.20	10.30	16.20
0-25	5.80	6.80	8.40	9.20	10.30	16.20
0-50	5.80	6.80	8.40	9.20	10.30	16.20

### A.C. VOLTMETERS

Range	231-S, 232-S, 233-S, 237-S		331-S, 332-S, 334, 337-S		430, 431, 431-A, 432, 436		531, 534		636		736	
	0-5	\$ 5.80	\$ 6.80	\$ 8.40	\$ 9.20	\$ 10.30	\$ 10.30	\$ 13.00	\$ 13.00	\$ 16.20	\$ 16.20	
0-10	5.80	6.80	8.40	9.20	10.30	10.30	13.00	13.00	16.20	16.20		
0-150	6.90	7.90	9.50	10.30	11.40	11.40	17.30	17.30	18.90	18.90		
0-300	8.50	9.50	11.10	11.90	13.00	13.00	18.00	18.00				

### A.C. AMMETERS

0-3	\$ 5.80	\$ 6.80	\$ 8.40	\$ 9.20	\$10.30	\$16.20
0-5	5.80	6.80	8.40	9.20	10.30	16.20
0-10	5.80	6.80	8.40	9.20	10.30	16.20
0-25	5.80	6.80	8.40	9.20	10.30	16.20

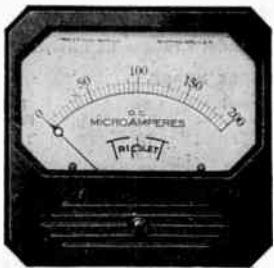
### A.C. MILLIAMMETERS

0-10	\$ 6.90	\$ 7.90	\$ 9.50	\$10.30	\$11.40	\$17.30
0-15	5.80	6.80	8.40	9.20	10.30	16.20
0-50	5.80	6.80	8.40	9.20	10.30	16.20
0-100	5.80	6.80	8.40	9.20	10.30	16.20
0-200	5.80	6.80	8.40	9.20	10.30	16.20
0-500	5.80	6.80	8.40	9.20	10.30	16.20

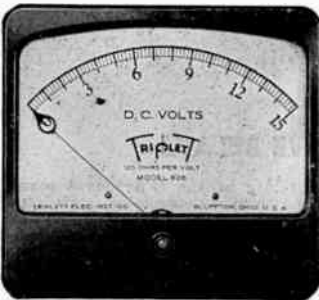
### R.F. AMMETERS (with internal couples)

0-5	\$ 6.90	\$ 7.90	\$ 9.50	\$10.30	\$11.40	\$17.30
0-1	6.90	7.90	9.50	10.30	11.40	17.30
0-1.5	6.90	7.90	9.50	10.30	11.40	17.30
0-2.5	6.90	7.90	9.50	10.30	11.40	17.30
0-5	6.90	7.90	9.50	10.30	11.40	17.30
0-10	6.90	7.90	9.50	10.30	11.40	17.30

Also available with external couples; prices on request. Models 241-T, etc. correspond to D.C. Models 221-T, etc.



Models 426, 436, 446 and 466



Models 626, 636, 646;  
726, 736, 746

ALL PRICES ARE SUBJECT TO CHANGE — ALL MODELS SUBJECT TO REVISION — OTHER RANGES AVAILABLE

# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODEL 260

Set Tester

World's Most Popular  
High Sensitivity Set Tester  
For Radio and TELEVISION

There are more Simpson 260 high sensitivity volt-ohm-milliammeters in use today than all others combined. No other instrument of its kind has approached the world-wide popularity of the Simpson 260. In no other tester of its kind will you find the combination of useful ranges, accuracy, ruggedness, beauty and sensitivity developed to such a high degree of perfection.

Removal of the Model 260 from its heavy, handsome case of molded bakelite, will disclose how it differs from most set testers. You will see a sub-panel with a score of small recesses each holding a separate resistor or other component. You will notice complete absence of cable wiring. All connections are short and direct, thus offering a strength and firmness of assembly and the finest of insulation to reduce chances of shorts. All components are readily accessible. The front panel is a thing of beauty and long life. Pin jacks are recessed so no metal parts are exposed. All figures and symbols are molded into a heavy Bakelite panel and filled with durable white for long wear and legibility.

At 20,000 ohms per volt the 260 is highly dependable, rugged and accurate. Its practically negligible current consumption assures remarkably accurate voltage readings. It provides DC current readings as low as 2 microamperes and up to 10 amperes. Dependable resistance readings can be made up to 20 megohms and as low as 1/5 ohm. With the 260 you can measure automatic frequency control diode balancing circuits, grid currents of oscillator tubes and power tubes, bias of power detectors, automatic volume control diode currents, high-mu triode plate voltage, as well as a wide range of other measurements which cannot be checked with ordinary servicing instruments.



### RANGES

Model 260 Volt-Ohm-Milliammeter  
20,000 Ohms per Volt DC, 1,000 Ohms  
per Volt AC  
Volts, AC and DC: 2.5, 10, 50, 250,  
1000, 5000  
Output: 2.5, 10, 50, 250, 1000  
Milliamperes, DC: 10, 100, 500  
Microamperes, DC: 100  
Amperes, DC: 10  
Decibels (5 ranges): -12 to +55 DB.  
Ohms: 0-2000 (12 ohms center),  
0-200,000 (1200 ohms center),  
0-20 megohms (120,000 ohms center).

### 25,000 VOLT DC PROBE FOR TELEVISION TESTING

Complete, nothing to add, for use with  
Model 260. Weight: 6 oz. Shipping  
weight: 8 oz.

DEALER'S NET PRICE,  
complete with Instructions.....\$12.85



### DEALER'S NET PRICES

Model 260, complete with test leads and Operator's Manual.....\$38.95  
(Size: 5 1/4" x 7" x 3 1/8". Weight: 3 1/2 lbs. Shipping Wt.: 5 lbs.)

Leather Carrying Case..... 6.75

Model 260 in Roll Top Safety Case, complete with test leads and Operator's  
Manual..... 45.95

(Size: 5 3/8" x 9" x 4 3/4". Weight: 6 1/2 lbs. Shipping Wt.: 9 lbs.)

Model 260 available in standard all black or two tone tan and brown, at above prices.  
Specify color desired.

### MODEL 260 SET TESTER IN ROLL TOP SAFETY CASE

The Model 260, when placed inside our patented housing of heavy molded bakelite and permanently fastened in position, offers the highest degree of efficient, economical instrument protection. Now you can buy the famous 260 complete in this roll top safety carrying case with its built-in lead compartment at less than the price of a 260 and a leather carrying case. A flick of the finger rolls the top up and the instrument is ready to use. A downward flick rolls the top down and your instrument is fully protected.

# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODEL 303 VACUUM TUBE VOLT-OHMMETER

The new Simpson 303 really is a versatile instrument. It can be used as an electronic DC voltmeter, an ohmmeter, an AC voltmeter, an AF voltmeter, an RF voltmeter (with accessory probe), an output-meter, and an Electronic Galvanometer.

The 303 truly is a worthy companion of the world-famous Simpson Model 260 Volt-Ohm-Milliammeter. Simpson engineers spent months of painstaking research in the laboratory, working in close cooperation with TV Set Manufacturers to produce the 303. This ruggedly built instrument has a dimension of only 120 cubic inches, and is 60 to 70% more compact than any similar instrument. In achieving this compactness for greater portability Simpson did not sacrifice accuracy or functional value. Its large 4½-inch meter is easy to read. All components are easily accessible. All of the figures and symbols are molded into a heavy bakelite panel and filled with durable white enamel for long wear and legibility. Almost all of the component parts in the Model 303 have been developed and designed by Simpson and will give many years of good service.

The extremely low current consumption and the wide voltage and resistance ranges make the Model 303 an ideal instrument for Television and various other types of servicing requiring accurate readings.

Following are some of the more important features of the Model 303. It has 10 megohms DC input resistance for all ranges. The DC probe has an isolating resistance of one megohm. The circuit used in the Model 303 is a balanced bridge type using a 12AU7 double triode. All the resistors are 1% carbon film type having negligible voltage coefficient. The Model 303 can be used on variable line voltages. The frequency response is flat to 100,000 cycles up to 60 volts. Above 60 volts the voltage is applied through a voltage dividing resistor network and is flat on power line frequencies. The frequency response when used with the accessory RF crystal probe is flat within plus or minus 10% from 20 kilocycles to 100 megacycles. The AC input impedance when used with an AC cable is approximately 210 m.m.f. shunted by an equivalent resistance of approximately 275,000 ohms. The tubes will last almost indefinitely because they are operated at low filament and plate voltages. The input capacity of the RF crystal probe is approximately 2.5 m.m.f. High voltage probes are available for measuring C.R.T. voltage. This probe provides two high voltage ranges, 0-6000 V. DC and 0-30,000 V. DC. The limiting resistor in the control grid circuit of the 12AU7 tube automatically prevents excessive meter current, thus protecting the instrument when excessive voltage is applied. The entire instrument is fused and the fuse is readily accessible underneath the top panel.

The quality of the Model 303 is consistent with the high standards set up by the Simpson organization and sells at an amazingly low price.

### SPECIFICATIONS

DC VOLTAGE: Ranges—1.2, 12, 60, 300, 1200 (30,000 with Accessory High Voltage Probe).

Input Resistance—10 megohms for all ranges.

DC Probe—with one megohm isolating resistor. Polarity reversing switch.

OHMS: Ranges—1000 (10 ohm center); 100,000 (1000 ohms center); 1 megohm (10,000 ohms center); 10 megohms (100,000 ohms center); 1000 megohms (10 megohms center).

AC VOLTAGE: Ranges—1.2, 12, 60, 300, 1200. Impedance (with cable) approx. 200 mmf shunted by 275,000 ohms.

AF VOLTAGE: Ranges—1.2, 12, 60. Frequency Response—Flat 25 to 100,000 cycles.

DECIBELS: Ranges—-20 to +3, -10 to +23, +4 to +37, +18 to +51, +30

to +63. Zero Power Level—1M. W., 600 ohms.

GALVANOMETER: Zero center for FM discriminator alignment and other galvanometer applications.

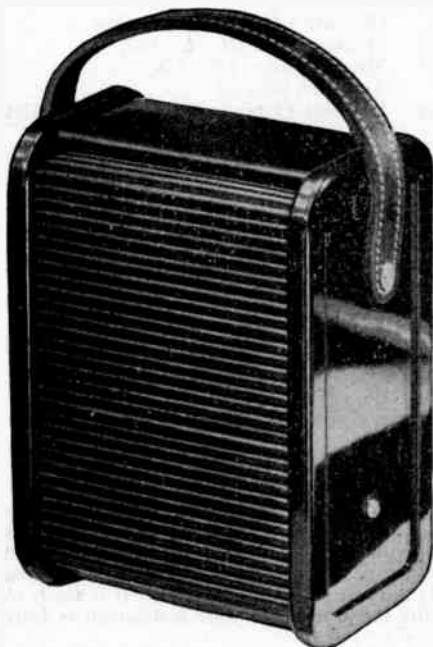
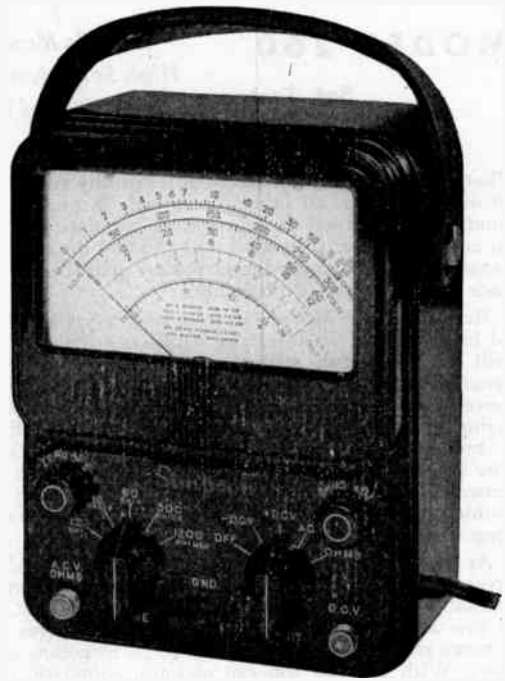
R. F. VOLTAGE: (Signal tracing with Accessory High Frequency Crystal Probe) — Range—20 volts maximum.

Frequency—Flat 20 KC to 100 M.C. LINE VOLTAGE: 105-125 V. 50-60 cycles.

SIZE: 5¼"x7"x3¼" (bakelite case).

Weight: 4 lbs. Shipping Wt.: 6½ lbs.

DEALER'S NET PRICE: Model 303, including DCV Probe, ACV—Ohms Probe and Ground Lead with Operator's Manual—\$58.75. Accessory High Frequency Probe, \$7.50. Accessory High Voltage Probe, \$14.85. Also available with Roll Top Case, Model 303RT—\$64.75.



### MODEL 303 VACUUM TUBE VOLT-OHMMETER IN ROLL TOP SAFETY CASE

Now Model 303 is also available in the Simpson patented Roll Top Safety Case. Over the face of the instrument a roll top (of molded bakelite) slides up to open and down to close. With a flick of the finger you roll it up and out of sight and the instrument is ready to use. Another flick rolls it down and the instrument is ready to carry, and fully protected. With the Roll Type Safety Case you have complete protection for your instrument, whether in use or not.



# Simpson

**SIMPSON ELECTRIC CO.**

**INSTRUMENTS THAT STAY ACCURATE**

## MODEL 480 FM-TV GENESCOPE

The Simpson Model 480 Genescope is the result of many months of painstaking research and it is offered as our interpretation of a modern FM and TV instrument providing all the necessary signal sources for the proper alignment and servicing of FM and TV receivers.

In addition to a signal source, the Genescope includes a high sensitivity oscilloscope of unique advanced design, complete in every detail and equipped with a high frequency crystal probe for signal tracing.

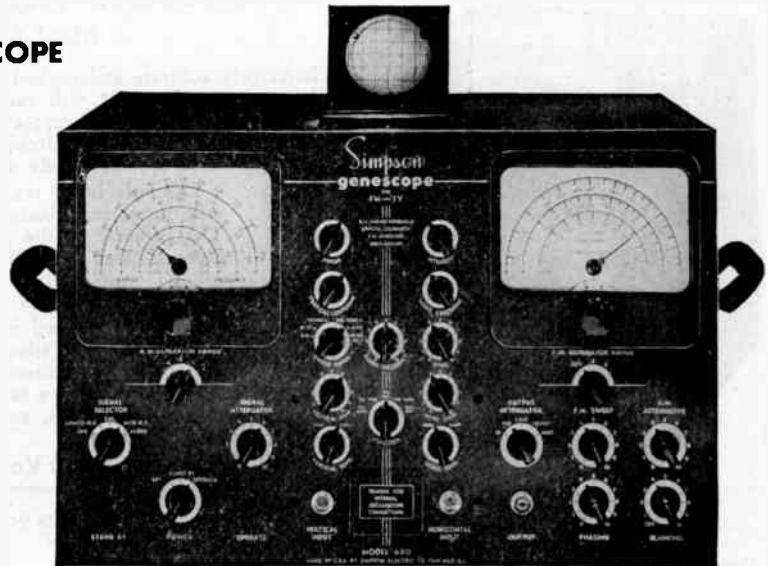
The variable oscillator sections are mounted one on each side of the oscilloscope section and are provided with large precision vernier dials having a 20:1 ratio and 1000 division logging scales. They are easy to read and can be quickly set for an exact frequency.

Modern FM and TV development and servicing requires the use of test equipment made to exacting standards. With this in mind we offer you the Genescope with the assurance that everything possible has been done to make it the most accurate, flexible and convenient instrument available.

There are many vital components parts in the Genescope, almost all of which have been developed and designed by us and substantial sums have been spent on modern tooling. The care we have taken to properly design and produce these parts is worthwhile assurance that the Genescope will render many years of uninterrupted service and always produce accurate results.

The center section of the Genescope contains the oscilloscope and all associated controls. The cathode ray tube of the oscilloscope is mounted vertically in the case in order to conserve bench space. The pattern on the tube is brought into view by use of a highly polished adjustable mirror at the top of the cabinet. The mirror may be quickly adjusted for any position of the operator. The tube face is placed well below the top surface of the cabinet in order to shield it from incident light thus producing a clear, sharp image unhampered by narrow angle light shields. The mirror when closed provides adequate protection for the cathode ray tube when not in use.

Direct connection to vertical and horizontal deflection plates and other internal functions are available through removable cover on the front panel.



## RANGES

### FREQUENCY MODULATED OSCILLATOR

Band A—2-120 megacycles.  
 Band B—140-260 megacycles.  
 Sweep width variable from zero to 15 megacycles.  
 Sweep rate 60 cycles per second.  
 Specially designed frequency sweep motor.  
 Continuously variable attenuator.

### AMPLITUDE MODULATED OSCILLATOR

Band A—3.2-16 megacycles.  
 Band B—15-75 megacycles.  
 Band C—75-250 megacycles.  
 30% modulation at 400 cycles or unmodulated.  
 Continuously variable attenuator.  
 Visual method of beat frequency indication.  
 Crystal calibrator — 5 megacycles  $\pm .05\%$ .  
 Audio Oscillator — 400 cycles.  
 AM and FM oscillator sections provided with large, easy to read dials with 20-1 vernier control and 1000-division logging scale.  
 Output impedance—75 ohms.  
 Step attenuator for control of output.

### OSCILLOSCOPE

Vertical and Horizontal amplifiers are balanced DC type.  
 Frequency response essentially flat to 200 KC. Will respond to over 3 megacycles at lower output. Vertical input sensitivity 30 MV per inch peak to peak. Horizontal input sensitivity 50 MV per inch peak to peak. Input resistance .5 meg for low input, 10 meg for high input. 60 cycle sine sweep or linear sweep from 3 cycles to 60 KC.  
 Adjustable synchronization — internal, external or line frequency.  
 Provisions for internal blanking or Z axis modulation.  
 Direct deflection plate sensitivity:  
 Vertical—10 volts per inch peak to peak.  
 Horizontal—15 volts per inch peak to peak.  
 Size: 22"x14"x7 1/2". Weight: 39 lbs.  
 Shipping Weight: 48 lbs.

DEALER'S NET PRICE complete with Test Leads and Operator's Manual... **\$375.00**

## Model 479 TV-FM Signal Generator



A modern instrument for today's TV-FM problems. Exactly the same circuits, ranges and functions as the Model 480, described above, with the exception of the oscilloscope.

Size 17"x14"x7 1/2". Weight 29 lbs.  
 Shipping Weight 35 lbs.

DEALER'S NET PRICE with Test Leads and Operator's Manual... **\$245.00**



# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODEL 266 VACUUM TUBE VOLTMETER

Ideal for TV - AM - FM



Extremely accurate and packed full of important features. This fine Simpson instrument offers a 1 volt range for the full scale deflection necessary in measuring low RF voltages; a zero center switch embracing all DC voltage ranges for discriminator circuit alignment; a special probe with low input capacitance of approximately 4 micro-microfarads for checking RF voltages.

DC volt input resistance ranges from 50 to 200 megohms; AC volt input impedance at 60 cycles is approximately 10 megohms. The primary of the power transformer is well-regulated—holding close control over filament as well as plate voltage, and the DC input circuit is filtered so that the pressure of superimposed alternating currents does not affect DC measurements.

Housed in a sturdy case of attractive hardwood. The shining silver and black anodized aluminum panel includes a convenient well for holding the AC probe. In addition, there is a large, clearly marked 4 1/2" meter for quick, easy readings, and a compartment in the rear of the case for leads.

### 25,000 Volt DC Probe for Television Testing

Complete, nothing to add, for use with Model 266  
Weight: 6 oz. Shipping Weight: 8 oz.

DEALER'S NET PRICE, complete with Instructions.....\$14.85

### RANGES

- 0-10,000 (100 ohms center)
- 0-100,000 (1000 ohms center)
- 0-1 megohm (10,000 ohms center)
- 0-10 megohms (100,000 ohms center)
- 0-100 megohms (1 megohm center)
- 0-1000 megohms (10 megohms center)

For 105-125 volts, 50-60 cycle.  
Size: 8 1/2" x 9 1/2" x 8". Weight: 10 1/4 lbs.  
Shipping Weight: 14 lbs.  
DEALER'S NET PRICE, complete with Leads, AC Probe and Operator's Manual .....\$114.00

- Volts: (AC and DC) 0-1, 5, 10, 50, 100, 250, 500, 1000, 5000
- Milliamperes, DC: 0-1, 5, 10, 50, 100, 250, 500
- Amperes DC: 0-10
- Ohms: 0-1000 (10 ohms center)

## MODEL 351 TV ANTENNA COMPASS



This valuable instrument is another example of Simpson television pioneering. One man can do a better installation job in less time than it used to take two men.

Model 351 takes the physical form of a ruggedly built pocket-size meter which connects by a simple insulation-piercing alligator clip to the video input of the cathode ray tube in the television receiver.

By an extension cord, it is carried to the antenna site. With a test pattern tuned in on the area's weakest station, the antenna is simply located and rotated for maximum deflection of the TV Antenna Compass. It is as simple as that. Identifies ghosts, too. And much more accurate than trusting to the old fashioned "human eye-and-headphones" method of shouting instructions back and forth from the living room to the roof—which has always resulted in only an approximate best orientation of the antenna. Can also be used to peak the RF mixer and oscillator sections. In that way you actually peak the set right on the station itself. Size: 4 3/4" x 4 1/4" x 1 1/8". Weight: 1 lb. Shipping Weight: 4 lbs.

DEALER'S NET PRICE—Complete with Terminal Box and Printed Instructions.....\$16.35

## HIGH VOLTAGE TV PROBE

Here are Simpson's three High Voltage Test Probes for Television servicing, each designed for use with the models listed here. They are molded of high temperature polystyrene to provide high dielectric strength and maximum insulation. Their small diameter permits reaching in small spaces and narrow openings.

Size: Diameter, 1/8"; Length, 11 1/2". Weight: 6 oz. Shipping Weight: 2 lbs.



### DEALER'S NET PRICES

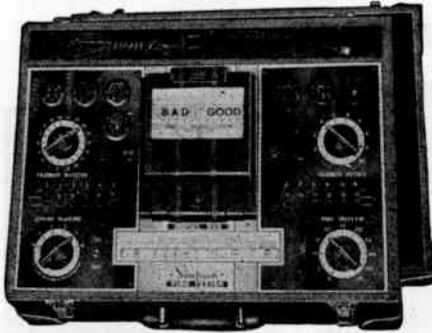
- High Voltage Probe for 260 (25,000 V.)—Complete, nothing to add..... \$12.85
- High Voltage Probe for 221 (30,000 V.)—Complete, nothing to add..... 12.85
- High Voltage Probe for 266 (25,000 V.)—Complete, nothing to add..... 14.85

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SIMPSON ELECTRIC CO.

# Simpson

INSTRUMENTS THAT STAY ACCURATE



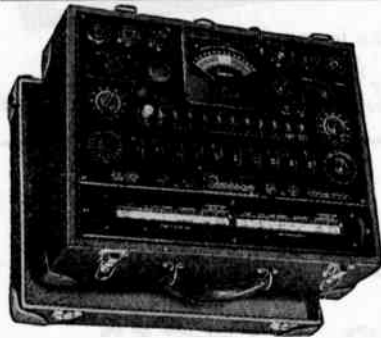
## MODEL 555 Tube Tester

Here is a tube tester Simpson engineered to test all tubes for today's radio receivers and any that may be developed within the foreseeable future. It is outstanding in its simplicity of operation and its attractive appearance.

### Check These Many Features

- Basic RMA recommended circuit. Tests any tube regardless of base connections or internal connections of elements.
- Simpson designed 3-position lever operated toggle switches with molded rotor carrying silver plated contacts, self-cleaning through wiping action.
- Sockets for all receiving tubes on the market.
- Provision for future tube developments.
- No adapters or special sockets required.
- Properly fused, provides for line adjustment from 100 to 130 volts; smooth vernier control.
- Beautiful modern panel of shining, silver and black anodized enduring aluminum.
- Large illuminated meter for easy readings.
- Unique jewel-like molded lucite housing encloses Neon bulb indicating shorts and inter-element leakages.
- Line adjustment control below dial opening. Easy to operate.
- Case of sturdy plywood with heavy fabricoid covering, slip hinges.
- Simpson Patented "No Backlash" Roll Chart.

For 100-130 volts, 50-60 cycles.  
Size: 16 3/4" x 12 1/2" x 6". Weight: 14 lbs.  
Shipping Weight: 19 lbs.  
DEALER'S NET PRICE, complete with  
Operator's Manual .....\$79.50



## MODEL 335 Plate Conductance Tube Tester

### With Simpson Patented "No Backlash" Roll Chart

Model 335 tests tubes under conditions simulating actual use in a radio set. The dial indicates percentage of rated plate conductance. With a minimum of settings a reading is quickly obtained which is a percentage of the tube's rated value.

Regardless of tube load, filament voltages are automatically maintained with minimum variation.

Each tube element is individually connected to the proper potential. Reliable short test is provided and Diodes are tested on low voltage. When you have finished a tube test, the Simpson one button automatic reset returns all switches to the normal position.

Tests all receiving tubes, including 9 pin miniatures, and sub-miniatures as used in hearing-aids, etc. Space is provided for new sockets.

For 105-125 volts, 50-60 cycle.  
Size: 16" x 12 1/2" x 6 3/4". Weight: 17 1/2 lbs.  
Shipping Weight: 27 lbs.  
DEALER'S NET PRICE, complete with  
Operator's Manual .....\$108.50

Tan and brown panel with brown leatherette case.

## SIMPSON MODEL 445

### Tube and Set Tester with the famous Simpson "No Backlash" Roll Chart

Model 445 combines a 20,000 ohms per volt Set Tester and a Plate Conductance Tube Tester. The tube tester dial indicates percentage of rated plate conductance which can also be considered as a percentage of mutual conductance since, in most cases, the amplification factor remains constant. Tests the new 9-pin miniature tubes and sub-miniature tubes.

The volt-ohm-milliammeter set tester provides the ranges that have made the Simpson Model 260 the most famous set tester in the world.

**HIGH VOLTAGE PROBE FOR TELEVISION SERVICING AVAILABLE**  
25,000 volts DC — 20,000 ohms per volt.  
Weight: 6 oz. Shipping Weight: 8 oz.  
DEALER'S NET PRICE, complete with Instructions.....\$12.85

### RANGES

Volts (20,000 ohms per volt D.C.,  
1000 ohms per volt A.C.): 0-2.5,  
10, 50, 250, 1000, 5000.  
Milliamperes (D.C.): 0-10, 100, 500.  
Microamperes (D.C.): 0-100.  
Output (A.C.) volts: 2.5, 10, 50,  
250, 1000.  
Ohms: 0-2000 (12 ohms center)  
0-200,000 (1200 ohms center)  
0-20 megohms (120,000 ohms  
center).



Size: 16" x 12 1/2" x 6 3/4". Weight: 20 lbs. Shipping Weight: 26 lbs.  
DEALER'S NET PRICE, complete with Test Leads and  
Operator's Manual .....\$137.50  
Tan and brown panel with brown leatherette case.

## THE SIMPSON PATENTED "NO BACKLASH" ROLL CHART

The exclusive "No-Backlash" feature automatically takes up the slack in the paper chart and, by keeping the chart in constant tension, makes it impossible to turn the selector wheel without moving the chart. This results in precision selection at all times. The "No-Backlash" feature also prevents the paper chart from tearing, insures proper alignment, and presents at all times a neat, flat surface.

The selector wheel gear ratio makes it possible for tube selections to be obtained with a minimum of effort.

The entire Roll Chart mechanism is securely fastened to the instrument panel. Quick access to the roll chart can be obtained by removing four panel screws, so that the addition of tube data or the mounting of a new chart is a matter of a few minutes.

In addition to the neat, flat reading surface made possible by the "No-Backlash" feature, the lucite window was designed so that only two settings appear, which is especially convenient for the settings of multi-purpose tubes.





# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODEL 340 SIGNAL GENERATOR

75 Kilocycles to 120 Megacycles—fundamentals to 30 Megacycles. From its lustrous black anodized panel to the big nine-inch dial and knife edge pointer that mean easy readability, the Model 340 is an instrument packed with Simpson engineering refinements for greatest utility and long-lasting accuracy.

An electron coupled circuit, using three tubes—full wave rectifier, modulator, and oscillator — and standard 30% modulation at 400 cycles, assures extreme stability and output uniformity. Close settings are permitted by a smooth vernier control.

RF coils provide range of 75-220; 200-600; 550-1700 KC; and 1.5-4.5, 4.2-14; 9-30; 36-120 megacycles. Fundamentals range to 30 MC, and the dial is direct reading to 120 MC.

Shielding in the Model 340 is complete; coils, attenuator, and signal selector being individually shielded. The oscillator and modulator are sealed in a rigidly welded, entirely closed chassis. In addition, the line cord is shielded, thus reducing leakage to a negligible point.

The signal output is controlled through a step attenuator and non-inductive potentiometer, providing smooth and complete control of the signal output. A special jack is provided in the Model 340 to obtain high output on the 120 MC band.



For 105-130 volts, 50-60 cycles.  
Size: 16"x10"x6". Weight: 15¼ lbs.  
Shipping Weight: 20 lbs.  
DEALER'S NET PRICE, complete with  
Operator's Manual .....\$76.85



## SIMPSON MODEL 221 ROTO RANGER

(High Sensitivity AC-DC  
Volt-Ohm-Milliammeter)  
RANGES

20,000 ohms per volt DC, 1000 ohms per volt AC.  
Volts, AC: 2.5, 10, 50, 250, 1000, 5000.  
Volts, DC: 2.5, 10, 50, 300, 1000, 5000.  
Milliamperes, DC: 10, 100, 500.  
Microamperes, DC: 100.  
Amperes, DC: 10.  
Output: 2.5, 10, 50, 250, 1000.  
Ohms: 0-2000 (12 ohms center), 0-200,000 (1200 ohms center), 0-20 megohms (120,000 ohms center).  
Size: 12¾"x10½"x5⅜".  
Weight: 9 lbs. Shipping Weight: 13 lbs.  
DEALER'S NET PRICE, complete with Test Leads and Operator's Manual.....\$69.85

Twenty-five separate meters at the turn of a switch. That is what you get in the new Simpson Model 221 Roto Ranger. The necessity of reading numerous scales, so common in ordinary volt-ohm-milliammeters, is forever eliminated when you own a Roto Ranger. The chances for errors in making readings are reduced to a minimum. The Model 221 provides a separate direct reading scale for each range and does it automatically. Calibrations are not cramped. Each scale is full size, the same as it would be for a separate instrument. As the selector switch on the panel is moved to the range desired, an ingenious mechanism rotates the proper range into position behind the meter window.

### HIGH VOLTAGE PROBE AVAILABLE FOR TELEVISION SERVICING

30,000 V. DC — 20,000 ohms per volt.  
Weight: 6 oz. Shipping Weight: 8 oz.  
DEALER'S NET PRICE, complete with  
Instructions .....\$12.85



# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODELS 240 and 230 VOLT-OHM-MILLIAMMETERS



These two "Micro-Tester" portables are famous throughout the world for their ruggedness and built-in accuracy. They exemplify the construction features and utility that distinguish the entire Simpson line shown in this section.

Both are shock-proof and incorporate the celebrated Simpson movement with its FULL BRIDGE-TYPE CONSTRUCTION AND SOFT IRON POLE PIECES. Resistors are in matched pairs to provide the greatest possible accuracy for all ranges.

Model 240 — the "Hammeter" — was designed for the additional voltage and sensitivity demanded in radio testing. With its maximum voltage range of 3000 AC or DC, it was the first self-contained pocket portable instrument built expressly to check high voltage and all the component parts of transmitters and receivers.

Model 230, with a maximum voltage of 1000 volts AC or DC, is ideal for most industrial testing. Its ranges are adequate for most line voltages, for telephone, teletype, and general purpose testing.

Both models are housed in heavily molded bakelite cases, with all numbers and symbols recessed in the panel and filled with white enamel for greatest legibility and ease of reading. Both have full size 3" meters.



### MODEL 240

AC Volts: 0-15, 150, 750, 3000 (1000 ohms per volt).  
DC Volts: 0-15, 75, 300, 750, 3000 (1000 ohms per volt).  
DC Milliampers: 0-15, 150, 750.  
Ohms: 0-3000 (center scale 30); 0-300,000 (center scale 3000).  
Accuracy: DC 3% — AC 5%.  
Size: 3"x5 7/8"x2 1/2". Weight: 1 1/4 lbs. Shipping Weight: 2 1/2 lbs.  
DEALER'S NET PRICE, complete with Leads and Printed Instructions \$24.60  
Leatherette Case 5.00  
Colors available as per your request. Now Model 240 can be supplied in either black or two tone tan and brown case. Color optional at above price.

### MODEL 230

AC Volts: 0-10, 250, 1000 (400 ohms per volt).  
DC Volts: 0-10, 50, 250, 1000 (1000 ohms per volt).  
DC Milliampers: 0-10, 50, 250.  
Ohms: 0-1000, 0-100,000.  
Accuracy: DC 3% — AC 5%.  
Size: 3"x5 7/8"x2 1/2". Weight: 1 1/4 lbs. Shipping Weight: 3 lbs.  
DEALER'S NET PRICE, complete with Leads and Printed Instructions \$23.40  
Leatherette Case 5.00  
Colors available as per your request. Now Model 230 can be supplied in either black or two tone tan and brown case. Color optional at above price.

## MODEL 380 WAVEMETER MODULATION INDICATOR

The ideal instrument for the Ham.

1. An accurate band-spread wavemeter, and a sensitive 0-100 microammeter as a resonance indicator.
2. Separate plug-in coils for 10, 20, 40 and 80 meter bands supplied—coils for other bands available at slight extra cost.
3. Additional between-band coverage available at the flip of a switch.
4. Extremely sensitive field strength indicator.
5. Push-button switch for dual meter sensitivity.
6. Provision for headphones for use in station monitoring and quality control.
7. A direct-reading Percentage Modulation Indicator with the instrument calibrated at 0-110% Modulation.
8. Designed to function on the 144, 235, and 420 megacycle bands without coils, but with a quarter wave antenna section.
9. Extremely rugged construction.
10. Used as a field strength indicator to determine radiation pattern.

Size: 3"x5 7/8"x2 1/2". Weight: 2 lbs. Shipping Weight: 4 lbs.

DEALER'S NET PRICE, complete with 4 coils, 2-ft. antenna, and Operator's Manual. \$37.85  
Leatherette covered carrying case, with separate compartments for the instrument and 4 coils. 8.00



# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## MODEL 370 AC AMMETER

(With self-contained current transformer)  
(For use on 60 cycles)

In the Model 370, a current transformer and indicating instrument have been combined in one small case to meet the consistent demand for a small multiple range AC ammeter, at a price that you can afford. Its many uses include the measurement of current drawn by all types of electric appliances and motors, heating elements, lamps, radio sets, etc.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE ..... \$18.50  
Test Leads with Prods ..... \$1.25 extra  
Test Leads with Alligator Clips and Insulated Sleeves ..... 1.25 extra  
Case colors available as per your request. Now Model 370 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-1, 0-2.5, 0-5, 0-10, 0-25  
Amperes



## MODEL 371 AC VOLTMETER

This instrument is a "must" for the industrial service kit or the lineman. Designed primarily for testing line voltages applied to motors, heating equipment or other industrial installations, the ranges are such that many additional applications will suggest themselves.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>4</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE ..... \$16.75  
Test Leads with Prods ..... \$1.25 extra  
Test Leads with Alligator Clips and Insulated Sleeves ..... 1.25 extra  
Case colors available as per your request. Now Model 371 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-150, 0-300, 0-600  
Volts



## MODEL 372 OHMMETER

A complete instrument with self-contained batteries. Has a wide range from .2 ohms to 50 megohms. "Ohms" adjuster compensates for variations in battery voltages. Wire wound and matched metallized resistors are used throughout. The basic movement has a sensitivity of 85 microamperes.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE, complete with Test Leads ..... \$23.20  
Case colors available as per your request. Now Model 372 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-500 ohms (5 ohms center)  
0-5000 ohms (50 ohms center)  
0-50,000 (500 ohms center)  
0-500,000 (5000 ohms center)  
0-5 Meg. (50,000 ohms center)  
0-50 Meg. (500,000 ohms center)



## MODEL 373 DC MILLIAMMETER

The Model 373 provides for DC current measurements from .02 to 1000 MA. This tester is ideal for radio servicing and experimental work; checking burglar alarm circuits, railroad signal systems, telephone work, etc.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>4</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE ..... \$18.25  
Test Leads with Prods ..... \$1.25 extra  
Test Leads with Alligator Clips and Insulated Sleeves ..... 1.25 extra  
Case colors available as per your request. Now Model 373 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-1, 5, 10, 25, 50, 100, 250,  
0-1000 MA.



## MODEL 374 DC MICROAMMETER

Incorporates a basic movement of 50 microamperes sensitivity with self-contained shunts for all other ranges. This tester can be used with external resistors or multipliers as a high sensitivity voltmeter at 20,000 ohms per volt. It is of particular value in photoelectric cell and other experimental work. The meter may be shorted out of the circuit by setting the selector knob to "short" position.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE ..... \$20.90  
Test Leads with Prods ..... \$1.25 extra  
Test Leads with Alligator Clips and Insulated Sleeves ..... 1.25 extra  
Case colors available as per your request. Now Model 374 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-50, 100, 250, 500, 1000  
Microamperes



# Simpson

INSTRUMENTS THAT STAY ACCURATE

SIMPSON ELECTRIC CO.

## MODEL 375 DC AMMETER

(Self-Contained)

A new multi-range instrument which is extremely useful in testing the current in DC circuits. Provides a complete range from a fraction of an ampere to 25 amperes without the necessity of using auxiliary external shunts. Excellent for checking auto radios and experimental work in DC circuits.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE.....\$18.70  
 Test Leads with Prods.....\$1.25 extra  
 Test Leads with Alligator Clips and Insulated Sleeves.....1.25 extra  
 Case colors available as per your request. Now Model 375 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-1, 2.5, 5, 10, 25  
 Amperes



## MODEL 376 AC VOLTMETER

(Rectifier Type 1000 ohms per volt)

An AC Voltmeter, especially useful in circuits where a limited amount of current is present. Makes an excellent output meter when used with proper condenser. The wide variety of ranges covers both primary and secondary voltage ranges of transformers used in radio sets, toys and appliances.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>4</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE.....\$18.25  
 Test Leads with Prods.....\$1.25 extra  
 Test Leads with Alligator Clips and Insulated Sleeves.....1.25 extra  
 Case colors available as per your request. Now Model 376 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-5, 10, 25, 50, 100, 250,  
 500, 1000 AC volts



## MODEL 377 DC VOLTMETER

(Resistance 1000 ohms per volt)

Measures all dry battery voltage, both A and B, for radio sets, also grid and plate voltage and filament voltage in battery-operated sets. High ranges may be used for checking DC line voltage.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE.....\$18.25  
 Test Leads with Prods.....\$1.25 extra  
 Test Leads with Alligator Clips and Insulated Sleeves.....1.25 extra  
 Case colors available as per your request. Now Model 377 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-1, 2.5, 5, 10, 25, 50,  
 100, 250, 500, 1000  
 DC Volts



## MODEL 378 AC MILLIAMMETER

(With self-contained current transformer)

Here is the instrument that answers your need for a low cost, handy size milliammeter that combines a current transformer and an indicating instrument in one case. It offers five separate ranges, making it suitable for a wide variety of testing jobs.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE.....\$20.50  
 Test Leads with Prods.....\$1.25 extra  
 Test Leads with Alligator Clips and Insulated Sleeves.....1.25 extra  
 Case colors available as per your request. Now Model 378 can be supplied in either black or two tone tan and brown. Color optional at above price.

### RANGES

0-5, 25, 100, 250,  
 1000 MA.



## MODEL 379 BATTERY TESTER

Designed in accordance with the engineering specifications of leading battery manufacturers, this compact instrument is so ruggedly built that it will stand a lifetime of hard usage. The loading resistors have an accuracy of 1% and properly load all radio and hearing aid A and B batteries.

A single rotary switch selects the voltage of the battery under test and brings into line the correct loading resistor. The full 3" dial has three separate arcs, one for all radio A batteries, one for hearing aid A batteries, and one for all B batteries.

A percentage scale shows the exact condition of the battery in percentage of full voltage. The voltage reading can be quickly obtained by multiplying the percentage reading by the selector-switch voltage setting.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>4</sub> lbs. Shipping Weight: 3 lbs.

DEALER'S NET PRICE, including Test Leads and Operator's Manual.....\$21.50  
 Leatherette covered Carrying Case, with compartment for leads.....5.00  
 Case colors available as per your request. Now Model 379 can be supplied in either black or two tone tan and brown. Color optional at above price.





# Simpson

## SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

### SIMPSON MODEL 390 VOLT-AMP-WATTMETER

Ruggedly constructed for full load, continuous operation, the Simpson Model 390 is the first tester of its size ever made to give you volt, ampere and wattage readings in one compact instrument. It embraces two ranges each of voltage and current, providing four wattage ranges which cover practically all types and makes of appliances. The panel has volt-ampere combinations clearly indexed to the proper wattage range on the scale, which makes the instrument easy to use. All readings are shown on one meter. In normal position, the meter indicates volts. Ampere and watt readings are obtained by depressing button on the panel. The widely separated binding posts make it possible for the Model 390 to be used as an individual voltmeter or as an ammeter. The Model 390 has a molded bakelite case with all figures recessed in the panel, which are filled with white enamel for better legibility.

Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs. Shipping Weight: 4 lbs.

DEALER'S NET PRICE, complete with Break-in plug, leads and Operator's Manual.....\$39.50  
Leatherette Covered Carrying Case, with compartment for Break-in plug and leads..... 5.00  
Leather case..... 8.00  
Case colors available as per your request. Now Model 390 can be supplied in either black or two tone tan and brown. Color optional at above price.



#### RANGES

AC Current, 60 cycles  
Volts: 0-150, 0-300  
Amperes: 0-3, 0-15  
Watts: 0-300, 0-600, 0-1500,  
0-3000

### SIMPSON AC-DC VOLT-WATTMETERS MODELS 391 and 392

Designed for simultaneous reading of volts and watts, each of these handy little testers has two separate 3" square meters, one for volts and one for watts. Each has a built-in cord and plug for connection to the line outlet, and a receptacle for connecting the appliance under test. The ranges for each meter are selected by separate toggle switches recessed in the molded bakelite case. The low power consumption combined with the high efficiency of these instruments results in negligible loss and error in reading

#### Model 391 (3000 watts max.)

Ranges: AC or DC  
Volts: 0-130, 0-260  
Watts: 0-1500, 0-3000  
Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs.  
Shipping Weight: 4 lbs.

DEALER'S NET PRICE, with Operating Instructions.....\$30.00  
Leatherette carrying case..... 5.00  
Case colors available as per your request. Now Model 391 can be supplied in either black or two tone tan and brown. Color optional at above price.

#### Model 392 (5000 watts max.)

Ranges: AC or DC  
Volts: 0-130, 0-260  
Watts: 0-1000, 0-5000  
Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs.  
Shipping Weight: 4 lbs.

DEALER'S NET PRICE, with Operating Instructions.....\$35.00  
Leatherette carrying case..... 5.00  
Case colors available as per your request. Now Model 392 can be supplied in either black or two tone tan and brown. Color optional at above price.



### MODEL 385 TEMPERATURE INDICATOR

This is the newest addition to the Simpson Appliance Tester line. You will find this a compact instrument which is ideal for measuring temperatures from +70° F to as low as -50° F, where fast accurate temperature readings are important. The scale is designed so that the center portion is expanded, making the most widely used temperatures easy to read. The Model 385 is ideal for use in the refrigeration service field and wherever temperature readings are important, such as deep freeze units, home refrigerators, walk-in coolers and air conditioning units. The temperature readings can be taken at the end of the 15' lead which is supplied with the unit. The lead cord is small in diameter, making it possible to close the door of the equipment, thus obtaining temperature indications under actual conditions.

The probe can also be immersed in liquids where critical temperatures must be maintained.

Range: -50° to +70° F.  
Battery, self-contained  
Size: 3"x5<sup>7</sup>/<sub>8</sub>"x2<sup>1</sup>/<sub>2</sub>". Weight: 1<sup>1</sup>/<sub>2</sub> lbs.  
Shipping Weight: 4 lbs.

DEALER'S NET PRICE, complete with Test Lead and Operating Instructions.....\$30.00  
Leatherette Carrying Case..... 5.00  
Case colors available as per your request. Now Model 385 can be supplied in either black or two tone tan and brown. Color optional at above price.



# Simpson

SIMPSON ELECTRIC CO.

INSTRUMENTS THAT STAY ACCURATE

## TWO-INCH ROUND OR RECTANGULAR INSTRUMENTS

**DIRECT CURRENT MILLIAMMETERS**

Model 125 (Rd.—Open Face), 126 (Shroud) and 127 (Rectangular)

Range	
0-1	\$6.90
0-5	6.90
0-10	6.90
0-15	6.90
0-25	6.90
0-50	6.90
0-100	6.90
0-150	6.90
0-200	6.90
0-250	6.90
0-300	6.90
0-500	6.90
0-1000	6.90

**ALTERNATING CURRENT AMMETERS**

Model 155 (Rd.—Open Face), 156 (Shroud) and 157 (Rectangular)

Range	
0-1	\$6.75
0-3	6.75
0-5	6.75
0-10	6.75

0-50	\$6.90
0-100	6.90
0-150	7.35
0-300	8.55

**DIRECT CURRENT VOLTMETERS**

Model 125 (Rd.—Open Face), 126 (Shroud) and 127 (Rectangular)

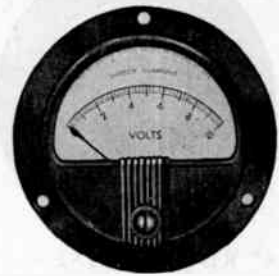
Range	
0-5	\$6.90
0-10	6.90
0-15	6.90
0-25	6.90

*(Continued in next column)*

**ALTERNATING CURRENT VOLTMETERS**

Model 155 (Rd.—Open Face), 156 (Shroud) and 157 (Rectangular)

Range	
0-5	\$6.75
0-10	6.75
0-15	6.75
0-25	6.75
0-50	6.75
0-100	6.75
0-150	8.40
0-300	9.60
0-500	12.00



2" ROUND CASE—SHROUD STYLE. Flange diameter, 2 3/4"; depth overall, 2 5/8"; body diameter, 2 1/4"; scale length, 1 1/8". Bakelite case.

## WATTMETERS — Electro-dynamometer Type

RANGES	2 INCH Model 175 (Rd.—Open Face), 176 (Shroud), and 177 (Rectangular)	3 INCH Model 75 (Rd.—Open Face), 76 (Shroud), and 77 (Rectangular)	4 1/2 INCH Model 79 (Rectangular)
0-75 Watts	150 V— .75 A \$16.95	\$18.00	\$23.40
0-150 Watts	150 V— 1.5 A 16.95	18.00	23.40
0-300 Watts	150 V— 3.0 A 16.95	18.00	23.40
0-750 Watts	150 V— 7.5 A 16.95	18.00	23.40
0-600 Watts	300 V— 3.0 A 18.75	19.80	25.20
0-1500 Watts	300 V— 7.5 A 18.75	19.80	25.20
0-3000 Watts	300 V—15.0 A 18.75	19.80	25.20



2" RECTANGULAR CASE. 2 3/8" square. Mounts in round hole. Body diameter, 2 3/8". Bakelite case.

## RADIO FREQUENCY AMMETERS

**(Internal Thermocouple Type)**

Model 35—3 inch round case.  
 Model 36—3 inch shroud case.  
 Model 37—3 inch rectangular case.

Ranges: 0-1, 0-1.5, 0-2, 0-2.5, 0-3, 0-5, 0-10 Amperes—\$9.60  
 0-15, 0-20 Amperes—\$12.00.

Model 135—2 inch round case.  
 Model 136—2 inch shroud case.  
 Model 137—2 inch rectangular case.

Ranges: 0-1, 0-1.5, 0-2, 0-3, 0-5, 0-10 Amperes—\$8.40.

## VOLUME LEVEL INDICATORS

**(Copper Oxide Rectifier Type)**

Model 45—3 inch round open face; Model 46—3 inch round shroud case; Model 47—3 inch rectangular case.

**DB METERS**

Calibrated for use on 500 ohm line. Power 6MW.

General Purpose

45, 46 or 47 - 10 to +6DB Meter—Resistance 2500 ohms.....	\$13.20
45, 46 or 47 - 10 to +6DB Meter—Resistance 5000 ohms.....	\$16.50
45, 46 or 47 - 10 to +6DB Meter—Resistance 5000 ohms.....	\$24.00
45, 46 or 47 - 10 to +6DB Meter—Resistance 5000 ohms.....	\$24.00

High Speed

Low Speed

General Purpose

Model 145—2 inch round case. Model 146—2 inch shroud case. Model 147—2 inch rectangular case.

145, 146 or 147 - 10 to +6DB Meter—Resistance 2500 ohms.....	\$11.50
145, 146 or 147 - 10 to +6DB Meter—Resistance 5000 ohms.....	\$14.40



2" ROUND CASE—OPEN FACE STYLE. Flange diameter, 2 3/4"; depth overall, 2 5/8"; body diameter, 2 1/4"; scale length, 1 1/8". Bakelite case.

**VU METERS**

Two types of scales are available with all VU Meters. Both meet the standards set up by Bell Laboratories. The "A" scale stresses the level in VU and is primarily used in monitoring wire lines. The "B" scale stresses percent use of the transmitter output and is the standard for broadcast service.

Model 45, 46 or 47 (Not Illuminated) "A" Scale or "B" Scale.....\$21.00  
 Model 49 (Not Illum'd) "A" Scale or "B" Scale (4 1/2 in. rectangular) 24.00  
 Model 49 (Illuminated) "A" Scale or "B" Scale (4 1/2 in. rectangular).... 28.50

## 4 1/2" RECTANGULAR INSTRUMENTS

MODEL 29 D.C.		MICS		MODEL 59 A.C.	
MA					
0-1	\$8.85	0-15	8.85	0-25	\$8.85
0-10	8.85	0-25	8.85	0-100	17.10
0-50	8.85	0-50	8.85	0-200	14.10
0-100	8.85	0-150	9.30	0-500	10.50
0-200	8.85	0-300	10.80		
0-500	8.85			AMPS	
		AMPS		0-1	\$9.00
		0-1	\$8.85	0-3	9.00
		0-5	8.85	0-5	9.00
		0-10	8.85	0-10	9.00
				VOLTS	
				0-15	\$9.00
				0-150	10.50
				0-300	12.60

*All Prices Dealer's Net*



# Simpson

**SIMPSON ELECTRIC CO.**  
CHICAGO, ILLINOIS

INSTRUMENTS THAT STAY ACCURATE



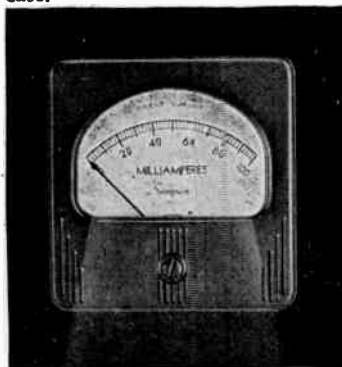
**3" ROUND CASE — SHROUD STYLE.** Flange diameter, 3 1/2"; depth overall, 2 1/4"; body diameter, 2 3/4"; scale length, 2-9/16". Bakelite case.



**3" RECTANGULAR CASE.** Width, 3"; height, 3 1/8". Mounts in round hole. Body diameter, 2 3/4". Bakelite case.



**3" ROUND CASE — OPEN FACE STYLE.** Flange diameter, 3 1/2"; depth overall, 2 1/4"; body diameter, 2 3/4"; scale length, 2-9/16". Bakelite case.



## THREE-INCH ROUND OR RECTANGULAR INSTRUMENTS

**DIRECT CURRENT VOLTMETERS**

Model 25 (Rd.—Open Face), 26 (Shroud) and 27 (Rectangular)

Range	
0-3	\$7.95
0-5	7.95
0-10	7.95
0-15	7.95
0-25	7.95
0-50	7.95
0-100	7.95
0-150	8.40
0-200	9.00
0-300	9.90

(1000 ohms per volt)

Model 25 (Rd.—Open Face), 26 (Shroud) and 27 (Rectangular)

Range	
0-50	\$9.30
0-100	9.60
0-200	9.90
0-300	10.20
0-500	10.50
0-1000	11.85

**DIRECT CURRENT MILLIAMMETERS**

Model 25 (Rd.—Open Face), 26 (Shroud) and 27 (Rectangular)

Range	
0-1	\$7.95
0-3	7.95
0-5	7.95
0-10	7.95
0-15	7.95
0-25	7.95
0-50	7.95
0-100	7.95
0-150	7.95
0-200	7.95
0-250	7.95
0-300	7.95
0-500	7.95
0-1000	7.95

**DIRECT CURRENT MICROAMMETERS**

Model 25 (Rd.—Open Face), 26 (Shroud) and 27 (Rectangular)

Range	
0-50	\$17.25
0-100	15.00
0-200	12.60
0-500	8.90

**DIRECT CURRENT AMMETERS**

Model 25 (Rd.—Open Face), 26 (Shroud) and 27 (Rectangular)

Range	
0-1	\$7.95
0-3	7.95
0-5	7.95
0-10	7.95
0-25	7.95
0-50	7.95
30-0-30	7.95

**ALTERNATING CURRENT VOLTMETERS**

Model 55 (Rd.—Open Face), 56 (Shroud) and 57 (Rectangular)

Range	
0-3	\$7.35
0-5	7.35
0-10	7.35

## HIGH RANGE D.C. PLATE VOLTMETERS

(Complete with External Resistor)

Model 25—3 inch round case.	Model 26—3 inch shroud case.
Model 27—3 inch rectangular case.	
Ranges: 0-1500, 0-2000, 0-3000, 0-4000 volts.	\$11.85
Range: 0-5000	12.75

(Price includes resistor)

External resistors supplied with high range voltmeters are contained in bakelite cases with binding posts for connections.

## RECTANGULAR LUCITE ILLUMINATED METERS

**3 INCH**

3" wide, 3 1/8" high. Mounts in round hole. Body diameter, 2 3/4"

**DIRECT CURRENT VOLTMETERS MODEL 27**

0-10	\$9.45
0-50	9.45
0-150	9.90
0-300	11.40
0-500	12.00
0-1000	13.35
0-2000	13.35
0-3000	13.35
0-4000	13.35
0-5000	14.25

**RADIO FREQUENCY AMMETERS MODEL 37**

0-1	\$11.10
0-2	11.10
0-3	11.10
0-5	11.10

**DIRECT CURRENT MILLIAMMETERS MODEL 27**

0-1	\$9.45
0-10	9.45
0-25	9.45
0-50	9.45
0-100	9.45
0-200	9.45
0-300	9.45
0-500	9.45

**ALTERNATING CURRENT VOLTMETERS MODEL 57**

0-10	\$8.85
0-15	8.85
0-150	10.35
0-300	11.70

**2 INCH**

2 1/8" square case. Mounts in round hole. Body diameter, 2-3/16"

**DIRECT CURRENT VOLTMETERS MODEL 127**

0-10	\$8.40
0-50	8.40
0-150	8.85
0-300	10.05

**RADIO FREQUENCY AMMETERS MODEL 137**

0-1	\$14.85
0-2	14.85
0-3	14.85
0-5	14.85

Above prices include external thermocouple\*

**DIRECT CURRENT MILLIAMMETERS MODEL 127**

0-1	\$8.40
0-10	8.40
0-25	8.40
0-50	8.40
0-100	8.40
0-200	8.40
0-300	8.40
0-500	8.40

**ALTERNATING CURRENT VOLTMETERS MODEL 157**

0-10	\$8.25
0-15	8.25
0-150	9.90
0-300	11.10

\*Because of the Lucite construction there is no room to place a thermocouple within the 2" meter. Prices therefore include an external thermocouple.

All Prices Dealer's Net

# Look to SYLVANIA for the latest in ELECTRONIC TEST EQUIPMENT



**Television Oscilloscope.** An Exceptionally High-Gain, Wide-Band Oscilloscope Designed for Television. Accurately displays any TV pulse or wave-shape on a large, eye-saving 7" screen. Sensitivity: 0.01 v./in. Vert. response useful to 4.0 mc. Hard-tube sweeps to 50 kc.; phasing control; pos. or neg. sync. control; many other outstanding features. Recommended for servicemen; laboratories; advanced schools and industry. Price: \$229.50.



Type 400



Type 132

**General Purpose Oscilloscope.** A Versatile 7" Scope with Many Features Found in Type 400 above, priced as low as oscilloscopes with smaller screens. Sensitivity: 0.21 v./in.; freq. response: exceeds 10 cps. to 70 kc. Widely used by servicemen, schools and industry for AM-FM-TV testing. Price: \$144.50.

**TV Signal Generator.**

An ALL ELECTRONIC Sweep Generator for TV and FM. Fundamental center frequencies: 2-25, 20-64, 60-120, and 140-230 mc. Two adjustable sweep widths: 0-600 kc./15 mc.; excellent sweep linearity; output 0.1 v. Edge-lighted dial; simplified controls; small size: 11½" x 8½" x 7". May be used with any scope and marker including those shown at left and below. Price: \$139.50.



Type 500

**Polymer-TV Vacuum-Tube Voltmeter.**

A Sensitive DC, AC and RF Vacuum-Tube Voltmeter, Ohmmeter and DC Current Meter. The basic instrument for every TV, FM and AM shop. Ranges: rf to 300 volts (only 3 μmf shunt capacity); ac and dc to 1000 volts (10 or 30 kv dc using h.v. probes described at left); dc current from 50 microamperes to 10 amperes; and resistance from 0.5 to one billion ohms. Frequency range to 300 megacycles. High input impedance on all voltage ranges. Size identical to TV generator above. Price: \$99.50.



Type 221

**TV High-Voltage Probes.** New, Quality Probes that Permit Measuring High TV Anode Voltages by increasing the dc range of Polymeters to 30,000 or 10,000 volts. Special conversion cartridge permits using 30 kv probes with ANY 1,000 volt scale 20,000 ohm/volt meter. Select correct probe from list below:



Type	Range	Use with	Price
225	30 kv	Polymer, Type 221	\$12.50
224	30 kv	Earlier Polymeters, Types 134 and 134Z	12.50
226	30 kv	Conversion cartridge for use with above Type 225 or 224 to convert ANY 20,000 ohm/volt meter with a 1000-volt scale to a kilovoltmeter	2.00
223	10 kv	Polymer, Type 221 (shown at right)	9.95
222	10 kv	Earlier Polymeters, Types 134 and 134Z	9.95

**Tube Tester Type 220.** Made By A Tube Manufacturer For Tube Users, these instruments test for ALL usual faults—not just one particular characteristic. New and exclusive ohmmeter-type shorts/leakage test indicates "GOOD" or "REPLACE" directly on the illuminated meter. Gas and a special heater-cathode leakage tests made in single operations. Single composite dynamic test for emission, transconductance and relative tube-life. Panel-mounted roller-chart; convenient switches; provisions for future tubes. Portable Type 220 has durable metal case and handle; removable cover. Size: 6" x 11¼" x 17". Price \$99.50.



**Tube Tester Type 219.** The counter Type 219 is electrically equivalent to the portable type. Attractively housed in a streamlined wood and metal cabinet. Adaptable to any surroundings. Occupies small counter space. Size: 5¾" x 13" x 18¾". Price: \$99.50.



**FM-AM Signal Generator.**

Useful as a TV Marker. A versatile AM-FM generator, doubly useful for peaking alignment of TV and as a TV marker. Calibrated to 0.05%. Fundamentals 80 kc to 120 mc; harmonics to 240 mc. Modulation: 0-100% AM; 0-30/150/700 kc FM. 1.0 volt max. output. Low leakage. Built-in crystal circuit. Size same as audio oscillator below. Price: \$139.50.



Type 216

**Audio Oscillator.**

An Accurate Sine-Wave Generator for Better Equipped Shops and Sound Specialists. Maximum output: 22.5 volts, 20-20,000 cps, flat within 2 db. Price: \$129.50.



Type 145



**Modulation Meter.** Directly indicates per cent of AM modulation. Compact; requires no direct connection to circuit. Used by amateurs, transmitter builders and others. Indicates carrier shift. Price: \$29.50.

Type X-7018

Only brief data are presented in this highly condensed catalog. More detailed literature is available from your Sylvania Distributor or Sylvania Electric Products Inc., Emporium, Pa.





## TEST EQUIPMENT

Model 184C



\$853.00  
Net

### INSULATION TESTER

For accurate insulation resistance, dielectric absorption, and hi-pot testing over variable range 50 to 10,000 v. DC. Four current ranges: 30, 150, 300 and 1500 microamperes allow sensitive readings for particular requirement, plus sufficient output for quick charging of high capacities. Measures resistances from 0.1 to 50,000 megohms. Constant output voltage regulated to 1/2%.

Neon lamp indicates breakdown and guards meters against overload. Automatic relay removes residual capacitance charges. Limiting resistors protect power supply. Local and remote line switch operation. Polarity reversing switch. Guard circuit connection. Oak case, brass hardware, all cables supplied. Weight 60 lbs. Operates from 115 v., 60 cycles, 65 watts.

### RF PROBE

Indicates presence and relative strength of RF from 200 kc. to 500 mc. For adjusting antennas and transmitters, neutralizing RF amplifiers, eliminating harmonic radiation, servicing chokes and oscillators, detecting parasitics, determining standing wave ratios. No tuning required. Insulated handle for safety in high voltage circuits. Weston 506 meter.

Model 200A



\$19.50  
Net

Model 416



\$64.50  
Net

### SIGNAL TRACER

Smallest unit available. New design contains special Weston output meter, calibrated attenuator measures gain from 1 to 10K, jacks for 'scope or VTVM, pilot light, AF and RF probes, test leads, ground lead, power cord and headphones. Size 5 3/4 x 3 1/2 x 3. Weight 2 lbs. Operates on 115 v., 50-1600 cycles, 7 watts. Frequency range:

47 cps. to 400 mcs.

AF sensitivity:

0.002 v. audible.

0.004 v. at 1/2-scale.

RF sensitivity:

0.005 v. modulated 50%

0.05 v. modulated 50%

1/2-scale.

Distortion:

<1% at 100 cps.

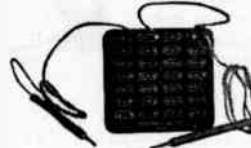
<1/2% at 10 kc.

Output at 'scope-VTVM jack > 2 volts for full scale meter reading.

### OHM-BOX

A new tool combining resistance decade and substitution box. Choice of twelve million resistance values in bakelite box 4 1/2 x 4 7/8 x 3/4. Any single value or combination, in series or parallel, quickly set up with 8 double-ended patch cords and 4 leads supplied. Non-inductive JAN resistors rated at 2 watts, ±5%. One ohm to 12 megohms.

Model 415



\$17.50  
Net

## OTHER RFL PRODUCTS

Model 107



\$490.00  
Net

### MAGNET CHARGER

Condenser discharge type. Charges any shape or kind of magnet saturable with 15,000-ampere peak charging current. Accessory Model 206 Booster increases charging current above 20,000 amps. Special adapters for all standard instruments and many odd shapes. Operation is safe, simple, swift. 115 v., 60 cycles, 25 watts. Size 7 x 12 x 17. Weight 75 lbs.

Type H-1267



Type H-1268



Type H-2475



### SEALNUTS

Sealing and mounting nuts for toggle, rotary shaft and push-button switches. Seal out dirt, moisture, fumes. Protect from adverse weather. Neoprene caps flexible below -40°C. Nuts are nickel plated brass. Approved by Government services. Types H-1267 and H-2475 fit 1 1/2-32 thread, type H-1268 fits 3/8-32 thread. Positive protection at low cost.

Contact nearest office listed below for free literature on any RFL product or service.

#### Albany 7

Schiefer Electric Co., Inc.  
100 State St.

#### Atlanta 3

E. A. Thornwell  
217 Whitehall St. S. W.

#### Boston 16

Cowperthwait and Brodhead  
131 Clarendon St.

#### Buffalo 3

Schiefer Electric Co., Inc.  
527 Ellicott Square

#### Charlotte 12

Ranson, Wallace & Co.  
116 1/2 East Fourth St.

#### Chicago 6

George Pettit Company  
549 W. Washington Blvd.

#### Cincinnati 37

Beedle Equipment Co.  
Roselawn Center Building

#### Cleveland 14

Ambos-Jones Company  
1085 The Arcade

#### Denver 2

Peterson Company  
4949 Colorado Blvd.

#### Detroit 2

T. S. Cawthorne  
570 Maccabees Bldg.

#### Houston

Lynn Elliott Co.  
322 M & M Bldg.

#### Jacksonville 2

Ward Engineering Co.  
302 Hildebrandt Bldg.

#### Knoxville

A. R. Hough Co.  
P.O. Box 1452

#### Little Rock

Curtis H. Stout  
Box 107

#### Los Angeles 27

Edward S. Sievers  
5171 Hollywood Blvd.

#### Meriden

John S. Isdale  
144 Curtis St.

#### Minneapolis 2

Geeseka & Pinkney Co.  
552 Plymouth Bldg.

#### New Orleans 12

W. J. Keller  
304 Natchez Bldg.

#### Orlando

Ward Engineering Co.  
1217 W. Central Ave.

#### Philadelphia 2

Joralemon, Craig & Co.  
112 South 18th St.

#### Phoenix

J. E. Redmond Co.  
400 W. Madison St.

#### Pittsburgh 22

Russell F. Clark Co.  
1404 Clark Bldg.

#### Rochester 4

Schiefer Electric Co., Inc.  
311 Alexander St.

#### San Francisco 5

H. E. Held  
120 Main St.

#### Seattle 4

Eicher & Company  
263 Colman Bldg.

#### St. Louis 1

C. B. Fall Co.  
317 No. 11th St.

#### Syracuse 2

Schiefer Electric Co., Inc.  
204 State Tower Bldg.

#### Tulsa 1

Riddle & Hubbell  
211 Midco Bldg.

Field Engineering Office: Electronic Engineering & Service Co., 1624 Eye St. N. W., Washington 6, D. C.

All prices are f.o.b. Boonton, N. J. subject to change without notice.



**RADIO FREQUENCY LABORATORIES INC.**

Boonton 3, New Jersey

# SUPREME

# Instruments

## SUPREME BY COMPARISON



MODEL 665



MODEL 675



MODEL 660

## SUPREME FM-TELEVISION TEST SYSTEM

Lead the field with profits by using this amazing SUPREME FM-TV test method. Adjust, repair, test TV receivers without waiting for station test pattern—from antenna post to picture tube. Have your own test pattern anytime or all the time. With this group of advanced instruments, perform all necessary adjustments and repairs on all FM and Television receivers at your convenience.

**MODEL 665 COMPOSITE VIDEO GENERATOR** produces the same type of synchronizing signal as the station. The output is in exact accordance with FCC "Standards of Good Engineering Practice Concerning Television Broadcast Stations," which means it is composed of horizontal and vertical blanking and sync pulses as well as the equalizing pulses. Also includes picture signal containing frequencies up to 4.5 mc. Picture (equally spaced dots) can be turned off and maintain sync on receiver.

### SPECIFICATIONS

**Video Output**—Composite video signal (standard RMA signal); independent simultaneous positive and negative outputs, 0-5 volts, with amplitude individually controlled; impedance of each output is 1000 ohms maximum in series with 8 mf capacitor.

**Auxiliary Output**—Line driving pulse (15,750 cps) and field driving pulse (60 cps), each 2 volts negative, for synchronizing monoscope, camera, or other picture signal generator. Impedance of line driving pulse is 500 ohms; of field driving pulse, 1000 ohms.

**Video Modulation**—Internal: Dot pattern which is inherently free of non-linearity. External: Approximately 15 volts positive signal (positive equals white) required for full pedestal. Input impedance of external video terminal is 470,000 ohms shunted by 25 mmf.

**Power Input**—117 volts, 60 cycles, 175 watts.

**Number of Tubes**—30.

**Case**—Steel Blue Hammerloid finish, with new type handle.

**SIZE**—8 1/4" x 16" x 24".

**WEIGHT**—42 lbs.

**MODEL 665**—Complete with Operating Data..... **\$349.50**  
Technical Manual Only..... **\$1.00**

**MODEL 675 FM AND TV GENERATOR**—Designed for a companion unit to the SUPREME MODEL 665. Not just another TV Generator—incorporates video amplifiers for faithful external modulation with picture signal frequencies. Any generator used with the MODEL 665 must have this facility. In addition to acting as a carrier generator, it also has complete alignment functions for both FM and TV Receivers.

### SPECIFICATIONS

**RF Generator**—Range: 54 MC to 216 MC in twelve steps. One range for each TV channel. This section can be video modulated with Model 665 Video Generator. Output also available as unmodulated or externally modulated signal. Signal level output continuously variable through trombone attenuator.

**Sweep Generator**—Range: 4.5 MC to 216 MC in 18 steps. One step for each TV channel, one step for FM IF's, one step for inter-carrier sound IF's, three steps for TV picture and sound IF's, one step for alignment of FM oscillator. Output continuously variable through ladder attenuator in five steps and a vernier.

**Marker Generator**—Range: 19 MC to 50 MC in 2 continuously variable bands. Dial directly calibrated. Output variable through trombone attenuator.

A separate crystal marker generator is provided in addition to the directly calibrated Marker Generator. Jack on panel provides means for extra use of external crystal.

**Mechanical Construction**—Blue Hammerloid steel case, double shielded construction, heavy aluminum panel.

**SIZE**—15 1/2" x 11 1/2" x 8 3/4".

**WEIGHT**—30 lbs.

**MODEL 675**—Complete with Connectors and Operating Data..... **\$179.50**

**MODEL 685 VIDEO AMPLIFIER AND CARRIER OSCILLATOR** Choice of two channel frequencies with panel control. User can adjust to any two channels out of 35 possible combinations.

**MODEL 685**..... **\$49.50**

**MODEL 660 WIDE RANGE OSCILLOSCOPE** — Years ahead in operation and design. Frequency responses virtually flat from 5 cycles to 5 megacycles. Useful to over 7 megacycles. Covers audio, broadcast and video frequencies with faithful reproduction of input signal. Time base sweep up to 100,000 cycles. Positive synchronization. Five-inch tube for detailed image. Vertical undistorted virtual image height, 12 inches! . . . horizontal, 17 inches! Vertical sensitivity 0.1 volt RMS. Z axis input and amplifier. Direct connection to de-flecting plates. Complete with filter screen, professional type probe and operating data.

**Housing**—Attractive Hammerloid metallic case.

**SIZE**—12" x 18" x 19".

**SHIPPING WEIGHT**—70 lbs.

**MODEL 660** priced at ..... **\$276.80**

PRICES AND SPECIFICATIONS SUBJECT TO REVISION WITHOUT NOTICE.

# SUPREME

# Instruments

## SUPREME BY COMPARISON

### TUBE TESTERS and MULTI-METERS

#### MODEL 717 TV DIAGNOMETER • TUBE TESTER • VTVM



The most versatile Tube and VTVM Set Tester ever offered to the Radio and Television Service Industry. Complete tube testing facilities by the time proven emission principle. Checks all types of AM, FM and TV receiving tubes. Roll chart listing. VACUUM TUBE VOLTMETER.

DC Volt Ranges Positive—5/10/50/100/500/1000  
DC Volt Ranges Negative—5/10/50/100/500/1000  
Ohms—1000/10 K/100 K/1 meg/10 meg/1000 meg  
AC Volts—5/10/50/100/500/1000

Will read to 30,000 volts DC with extension unit zero center function for discriminator adjustment. Can be used for signal tracing with crystal probe available separately. Available in portable metal carrying case with compartment for leads or golden oak wood case.

Panel Dimensions—11 3/4" x 10" (approximately).

WRITE FOR PRICE



### QUALITY AT LOW COST

#### TUBE AND SET DIAGNOMETERS

#### MODEL 707 TUBE DIAGNOMETER

places a quality tube tester in reach of all in the Radio Industry. Tests all AM-FM and TV receiving tubes. Includes spare socket and SUPREME'S famous floating filament system — universal — minimized obsolescence — shorts test — noise test — extra switching channel for future tubes. Ultra smooth illuminated roll chart also serves as OFF-ON indicator. Tube reads "GOOD-BAD" on four-inch meter. Available in metallic case or golden oak case. WRITE FOR PRICE.

**MODEL 711**—Same as above with Set Tester functions as follows:  
DC Volts—10/50/250/500 at 20,000 ohms per volt.  
AC Volts—10/50/250/500.  
Ohms—2 K/200 K/2 meg/200 meg (Multiplier available for extending DC voltage range to 30,000 volts).

WRITE FOR PRICE



#### DYNAMIC TUBE TESTER Model 721

A completely new method of checking the relative Mutual Conductance for those who prefer this type of test. Reads condition on "GOOD-BAD" Scale. Has all operational and design features found in other SUPREME Tube Testers plus the dynamic test. Beautiful in design—simple to operate.

SIZE—11" x 15" x 6 3/4".  
SHIPPING WEIGHT—20 lbs.  
MODEL 721 ready to operate

**\$89.50**



MODEL 640



MODEL 542

#### PORTABLE • ACCURATE • RUGGED

The popular Model 640 well known to servicemen wherever electronic and electrical equipment is used. 50 microamp meter movement which has sensitivity of 20,000 ohms per volt. All ohmmeter ranges including 20 megohm range operated by batteries contained in a real utility metal case with meter protection shield.

DC Volt Ranges—20,000 ohms per volt), 0/5/25/100/500/1000/5000. (First scale division .1 volt).  
DC Volt Ranges—(1000 ohms per volt), 0/5/25/100/500/1000/5000.

AC Volt Ranges—(1000 ohms per volt), 0/5/25/100/500/1000/5000.

Decibel Ranges— -10/+9, 0/+23, 0/+35, 0/+49.

DC Current Ranges—0/100 microamperes, 0/10/100/500 milliamperes.

Resistance Ranges—3 ranges, 0/2000/200 M/20 megohms.

Output Volt Ranges—6 ranges, 0/5/25/100/500/1000/5000.

Carrying Case—Sturdy steel case with hinged cover to protect meter.

Finished in grey wrinkle.

SIZE—5" x 7 1/2" x 3".

SHIPPING WEIGHT—4 lbs.

MODEL 640—Complete with Test Leads..... **\$36.40**

MODEL 640—With 25,000 DC V Range..... **\$46.35**

MODEL 542—A popular little pocket laboratory available in both metal or bakelite case.

4 DC Mil Ranges—0/0.3/6/30/150.

4 DC Volt Ranges—0/5/150/300/1500.

4 Ohms Ranges—0/2,000/20,000/200,000/2 meg.

4 AC Volt Ranges—0/6/30/150/600.

4 Output Ranges—0/6/30/150/600.

4 Decibel Ranges— -6/+10, +8/+24, +22/+38, +34/+50.

MODEL 542-M—Metal Case with Meter Shield..... **\$29.20**

MODEL 542-B—Bakelite Moulded Case..... **\$25.20**



#### TV HIGH VOLTAGE RANGE EXTENSION

For extending SUPREME 20,000 ohms/volt Multi-Meters, Set Testers and Electronic (VTVM) Multi-meters to read high DC voltage in television power supplies. State model number of tester when ordering.

SERIES 9600—TV DC Volts Extension Unit..... **\$9.95**

PRICES AND SPECIFICATIONS SUBJECT TO REVISION WITHOUT NOTICE.

# SUPREME

# Instruments

SUPREME BY COMPARISON

## LARGE METER • LOW COST TUBE BATTERY AND SET TESTERS

SUPREME'S time proven emission test principal with complete design flexibility. Seven-inch meter with transparent case. Guarded against obsolescence with potential filament return selector system — spare socket — illuminated roll chart — patented leakage test — Battery tester for portable radios — checks batteries under load on "GOOD-BAD" Scale.

SIZE—11" x 15" x 6 3/4".

SHIPPING WEIGHT—15 lbs.

MODEL 616—TUBE AND BATTERY TESTER..... \$66.25

MODEL 600—Same Tube and Battery Tester described above plus Set Tester functions.

DC Volts—0/5/10/50/250/500/1000/2500.

AC Volts—0/10/50/250/500/1000/2500.

DC Milliamperes—1/5/10/50/250/500/1000.

DC Amperes—1/10.

Output Volts—0/5/10/50/250/500/1000.

Ohms—0.1/200/20,000/200,000/2 meg./20 meg.

Battery Tests—1.5 - 4.5 - 6 - 67.5 - 90 - 95.

MODEL 600—TUBE, BATTERY & SET TESTER..... \$97.50



## SUPREME TUBE SETTING SERVICE

Available to all registered owners of SUPREME Tube Testers listed in this catalogue and also to owners of Models 589, 599 and 504-B (including "A" series). This special service keeps SUPREME owners supplied with information on new tubes as they are released. Free tube setting service to owners for first year after purchase if tester is properly registered. Service can be renewed when new chart is purchased. State model and present chart number when requesting service on models not listed in this catalogue.

## SUPREME TEST LEADS • ACCESSORIES

Not just ordinary test leads but the type supplied with SUPREME Deluxe Set Testers and Multi-Meters. Users say that they outlast several pairs of low quality leads.

4437-8—Pin Probe to Elbow Plug, pair..... \$1.40

6986-7—Alligator to Pin Plug, pair..... 1.35

6744-5—Pin Probe to Pin Plug, pair..... 1.25

Other useful accessories: Filter Screen for 5" scopes — Crystal Probe used with Oscilloscopes and VTVM in signal tracing and gain measurements to 380 megacycles — Model 610 Decade Attenuator — High voltage Multi-Meter Extensions. WRITE FOR PRICES.



## FIVE-INCH OSCILLOSCOPE

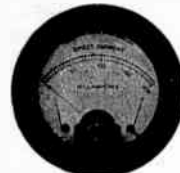
LARGE TUBE LOW COST

The ideal Oscilloscope for FM and TV alignment, audio frequency waveform and output observation. Frequency response useful to over one megacycle. Will pass 60-cycle square wave. Sensitivity: 0.3 volts. Sweep Generator time base range: 20 to 30,000 cycles. All controls on front panel can be externally or internally synchronized. Positive locking of pattern on screen. Five-inch tube with filter screen.

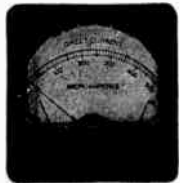
MODEL 655—Complete with Instructions and Test Leads..... \$126.50

## SUPREME PANEL METERS

Featuring a New Design for Greater Efficiency!  
Alnico Bar Magnet and Soft Sintered Pole Pieces  
Double Bridge Construction—Simple, Rugged Assembly



CASE MODEL 2400  
—2" round



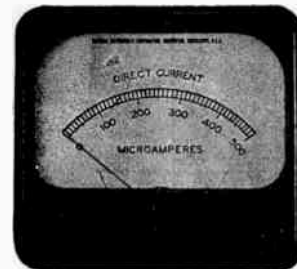
CASE MODEL 2100  
—2" square



CASE MODEL 3400—3" round



CASE MODEL 3100—3" sq.



CASE MODEL 4100—4" square

### "Hairline" Accuracy Assured by:

- (1) Efficient Alnico Bar Magnet.
- (2) Double Bridge Construction.
- (3) Selected Pivots and Jewels.
- (4) Strong, Tough Pointer.
- (5) Simple, rugged assembly insures permanent alignment.
- (6) High torque movement reduces friction.

For More Complete Information:  
Write for the Supreme Meter Catalog.

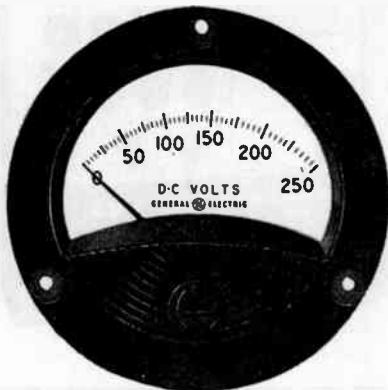
**SUPREME INCORPORATED**  
Greenwood, Mississippi, U. S. A.

PRICES AND SPECIFICATIONS SUBJECT TO REVISION WITHOUT NOTICE.



# ELECTRIC INDICATING INSTRUMENTS For Panel Mounting

*Internal-pivot Direct-current and Radio-frequency Types*



These small panel instruments are particularly suitable for use in radio and other communications equipment where compactness, especially minimum depth behind the panel, is essential. Thinness is obtained by the use of a unique single-unit, high-torque element of the permanent-magnet, moving-coil type. In this element, the pivots, instead of being secured to the outside of the armature winding, are solidly mounted on the inside of the armature shell.

G-E internal-pivot instruments are available in a variety of standard ratings to measure direct current and voltage (Type DW-71), and radio-frequency current (Type DW-72). They are of the 2½-inch classification. The behind-the-panel depth is 0.89 inch of the molded Textolite case.

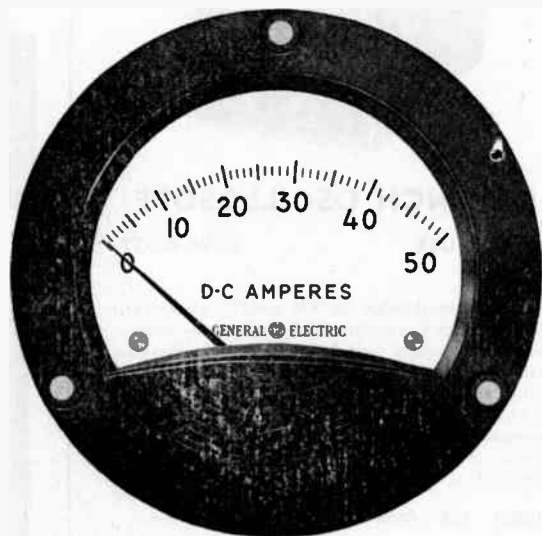
## OTHER TYPES

Many other types of G-E indicating instruments are available for panel mounting. They include 3½ inch a-c, d-c, r-f, and rectifier types in standard round cases as well as in rectangular cases, such as the one shown below. Also 2½-inch alternating-current and rectifier type instruments. Still other types can be supplied to meet unusual requirements.

## LISTINGS

Range	Approx. Resistance in Ohms	Cat. No.		Price*
		Round	Square	
1 5 20 50 100 150 volts (d-c)	1,000	495X21	495X41	\$12.00
	5,000	495X25	495X45	12.00
	20,000	495X29	495X49	12.00
	50,000	495X31	495X51	12.00
	100,000	495X33	495X53	12.50
	150,000	495X34	495X54	13.00
1 5 25 100 200 500 milliam- meters (d-c)	25	494X30	494X44	10.50
	7.4	494X33	494X47	10.50
	2.16	494X36	494X50	10.50
	.50	494X38	494X52	10.50
	.252	494X40	494X54	10.50
	.100	494X43	494X57	10.50
50 100 200 500 microam- meters (d-c)	2,030	494X14	494X22	19.00
	693	494X16	494X24	18.00
	302	494X18	494X26	14.00
	68.5	494X20	494X28	12.50
1 5 10 amperes (r-f)	.29	496X10	496X19	16.50
	.034	496X13	496X22	16.50
	.017	496X16	496X25	16.50
100 200 500 milliam- meters (r-f)	6.8	495X73	495X82	15.50
	4.0	495X76	495X85	15.50
	.62	495X79	495X88	15.50

\* Manufacturers' suggested retail prices.



Type D0-71 3½-inch instrument for panel mounting



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice

**These Five Matched "PRECISION" Instruments provide a Complete Modern for TV • FM • AM at Basic Laboratory only Moderate Cost!**



**SERIES E-200-C**  
Modern Multi-band  
SIGNAL and MARKER  
GENERATOR  
(see page F-39)

**SERIES E-400**  
Wide Range H.F.  
SWEEP SIGNAL  
GENERATOR  
(see page F-38)

**SERIES ES-500**  
5 in. Hi-Sensitivity  
Wide Range  
OSCILLOSCOPE  
(see page F-38)

**SERIES EV-10**  
True Zero-Center  
VTVM-MEGOHMMETER  
with 7 in. Meter  
(see page F-39)

**SERIES 612**  
Modern Free-point  
TUBE and BATTERY  
TESTER  
(see page F-43)

## OTHER MATCHED COMBINATIONS

The instruments shown above, and other "Precision" equipments, are available in various enclosure styles... Panel Mounts, Portables, Counter Types, etc... designed to suit individual applications, field or shop. The illustration shows only one of the many possible "matched combinations" of diversified "Precision" Test Equipment. Each combination provides a selected and Basic, modern, efficient Laboratory at moderate cost.



**SERIES TV**  
THE SUPER HIGH VOLTAGE  
SAFETY TEST PROBE  
for High D.C. Potential  
Measurements up to  
60,000 volts.  
(see page F-42)



### ★ SERIES EV-20 VTVM and MULTI-RANGE TEST SET

Complete with coaxial Circuit Isolating Test Probe, Shielded Ohmmeter Test Cable, Standard #227 Super-Flex Test Leads, Ohmmeter battery and full operating instructions.

In modern, black ripple finished cabinet. Dimensions—10½" x 6¼" x 5". Shipping Weight: 11 pounds.

CODE: Party NET PRICE: \$64.75

## SERIES EV-20 VTVM and Multi-Range Test Set

TRUE ZERO — CENTER ON ALL VTVM RANGES  
WITH DIRECT READING HIGH FREQUENCY SCALES  
Plus Complete Standard 1000 Ohms/Volt Functions

48 Ranges to 1200 Volts\*, 2000 Megohms, 12 Amperes, +63 DB

Series EV-20 is a compact, high sensitivity, laboratory-type circuit-testing instrument, incorporating the most modern electrical and physical design. It provides unparalleled performance, accuracy and versatility required for AM-FM-TV and general electronic circuit analysis.

Functionally similar to the deluxe Series EV-10 VTVM, with extra large 7" meter, (described on page F-39) the Series EV-20 (with 4½-inch meter) affords a highly efficient instrument at moderate cost.

### RANGE SPECIFICATIONS

- ★ SIX ALL-ZERO CENTER VTVM RANGES: 13⅓ Megs. Constant Input Resistance. ±3, ±12, ±30, ±120, ±300, ±1200 volts. \*Direct Reading to ±12 KV and ±30 KV with TV Test Probe described on page F-42.
- ★ SIX SELF-CONTAINED RESISTANCE RANGES: 0-2000 - 200,000 ohms. 0-2-20-200-2000 Megohms.
- ★ FOUR DIRECT READING HIGH FREQUENCY VTVM RANGES: 0-3-12-30-120 volts. (Requires RF-10A High Freq. Vacuum Tube Probe, Net Price \$14.40. No crystal rectifiers employed.)
- ★ SIX AC-DC and OUTPUT VOLTAGE RANGES at 1000 ohms per volt. 0-3-12-30-120-300-1200 volts.
- ★ EIGHT D.C. CURRENT RANGES: 0-300 microamps. 0-1.2-3-12-30-120-1200 MA. 0-12 Amperes.
- ★ SIX DECIBEL RANGES from -20 to +63DB. Calibrated for 600 ohm, 1 mw., zero DB.
- ★ ROTARY RANGE - FUNCTION SELECTORS eliminate frequent and inefficient shifting of test leads.

### IMPORTANT FEATURES

- ★ VOLTAGE REGULATED—BRIDGE CIRCUIT
- ★ DIRECT READING, ALL ZERO-CENTER VTVM — indicates both Polarity and Magnitude without switching or test lead reversal.
- ★ SHIELDED CONNECTORS for D.C.—VTVM and RF—VTVM. Permits simultaneous and non-interfering connection of both the Circuit Isolating Test Probe and optional H.F. Vacuum Tube Probe Series RF-10A.
- ★ DUAL-BALANCED ELECTRONIC BRIDGE OHMMETER-MEGOHMMETER uses two 1.5 volt cells easily replaced at rear of cabinet.
- ★ ADDITIONAL 1000 OHMS/VOLT FUNCTIONS permit routine AC-DC voltage, DB and current measurements free of power line.
- ★ 4½" RECTANGULAR METER — 200 microamperes, ±2%. D'Arsonval construction.
- ★ 1% Film type, Metallized and Wire-Wound resistors for all shunts and multipliers.
- ★ Heavy gauge, round-cornered, louvred steel case with plastic handle. Etched, anodized, aluminum panel.



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice

## Series E-400 Wide Range Sweep Signal Generator

Narrow and Wide Band Sweep  
Direct Reading from 2 to 480 Megacycles



Incorporating selected and true ultra-high frequency components and circuits, Series E-400 has been Application Engineered specifically for modern F.M. and TV. oscillographic alignment methods.

Stressing utmost simplicity of operation, flexibility, stability and accuracy, Series E-400 affords an unparalleled standard of performance and value.

Through careful, intensive development, "Precision" engineers have "designed out" costly, extraneous elements that might lead to undue early obsolescence. As a result, Series E-400 is a fundamental requirement for the efficient TV-F.M. Service Laboratory.

### FEATURES

- \* Direct Frequency Reading — 2 to 480 MC in 7 bands without skip. Harmonically calibrated from 240 to 480 MC.
- \* 6 Position Rotary Band Switch covers complete spectrum. Last position provides pure crystal oscillator only. No coil switching. Multiple oscillator B supply switch assures maximum frequency accuracy and stability.
- \* 6½" Etched Aluminum Tuning Dial — Engine turned finish.
- \* 1500 Point Vernier Scale permits close calibration and simple resetting of odd frequencies.
- \* Engraved Transparent Lucite Frequency Indicator affords readings free from parallax.
- \* Voltage Regulated Oscillators free of power supply variations.
- \* The Basic Circuit and Tube Complement — Uses 2 separate 6C4 high frequency beat oscillators plus a 6J6 reactance-modulated high frequency oscillator. This positively minimizes generation of unwanted extraneous signals. Also employs a 6J6 mixer-buffer, a 6C4 multiple crystal oscillator and a 6J6 final marker-mixer amplifier. 6X5 full wave rectifier. VR-105 voltage regulator.
- \* Selected, True High Frequency Circuit Components render high operating efficiency, stability and accuracy. Uses ceramic and air dielectric trimmer, coupling, by-pass and loading capacitors; rugged ceramic-lucite suspended National SLF tuning condenser; modern miniature HF tubes; mica-filled low-loss sockets; shock mounted reactance modulator; multi-section copper-plate shielding; etc.
- \* Narrow and Wide Band Sweep — 0 to 1 MC and 0 to 15 MC continuously adjustable. Permits easy band width setting for both F.M. and TV. requirements.
- \* Dual Continuous R.F. Attenuators triple shielded. Smooth, stepless, effective control from extra high output for single stage alignment to minimum levels for multi-stage adjustments.
- \* Wide Range Phasing Control for Hor. sweep of oscilloscope.
- \* Multiple Crystal Marker-Calibrator built-in. Simultaneously accommodates 4 crystals individually rotary selected. .01% accuracy 10.7 MC and 2 MC crystals furnished as standard equipment. Crystal signal separately attenuated for internal or external use.
- \* Crystal Calibrated and Control — Each instrument calibrated against crystal standards. The 2 MC crystal, as furnished, provides for crystal monitoring in addition to use as calibrator for external signal generators.
- \* Terminated RG/U Coaxial Output Cable for efficient signal transmission with minimum standing wave effects. LOW-HIGH taps plus open line switch for extra high as well as normal output signal level requirements.
- \* 8 Element Double Section Balanced Line Filter plus Thorough Multi-Section Copper Plate Shielding of instrument assures minimum leakage and radiation.
- \* Simultaneous A.M. and F.M. test facilities for anti-A.M. check of F.M. second detector circuits. A.M. input jacks also permit use as an H.F. A.M. Generator.

## Series ES-500 High Sensitivity, Wide Range, 5" Oscilloscope

Vertical Amplifier Range to 1 Megacycle  
Sensitivity 20 Millivolts per Inch



Series ES-500 affords the ultimate in performance, visibility and operational flexibility at moderate cost. "Precision" engineers have incorporated every necessary basic feature which they have found to be required to meet the needs of the rapidly advancing art of electronics. A.M., F.M., and TV.

The combination of Series ES-500 and Series E-400 Sweep Signal Generator truly represents an Application Engineered BASIC TELEVISION and F.M. SERVICE LABORATORY.

### FEATURES

- \* High Sensitivity, Extended Range, Voltage Regulated, Vertical Amplifier — 20 MV (.02 V) per inch deflection sensitivity, 10 cycles to 1 MC response. 2 megohms input resistance. Approx. 22 mmfd. input capacity.
- \* Frequency Compensated Vertical Input Step Attenuator — X1, X10, X100 plus continuous variable gain control in cathode follower input stage.
- \* 20 Millivolt Vertical Sensitivity — particularly desirable for diversified TV, F.M. and A.M. circuit analyses, especially when aligning low gain single stages and performing tests involving low output analytical devices.
- \* Extended Range Horizontal Amplifier — 500 MV (.5 V) per inch deflection sensitivity adequate for most all "H" drive purposes. 10 cycles to 1 MC response at full gain. ½ megohm input resistance. Approx. 20 mmfd. input capacity.
- \* Linear Multi-Vibrator Sweep Circuit — 10 cycles to 30 KC plus line or external sweep.
- \* Amplitude Controlled, 3-Way Synch. Selection — Internal-External-Line.
- \* "Z" Axis Modulation input facility for blanking, timing, etc.
- \* Sweep Phasing Control for sinusoidal line sweep usage. Wide angle bridge circuit.
- \* Direct H and V Plate Connections and Audio Monitoring phone pin jacks behind rear cover plate. No screws to remove.
- \* High Intensity CR Patterns through use of adequate high voltage power supply with 2X2 rectifier.
- \* The Circuit and Tube Complement — 6J5 Vertical input cathode follower. 6AK5 first "V" amplifier. 7AD7 second "V" amplifier and CR driver. 7W7 Horizontal amplifier-CR driver. 6SN7 Multi-vibrator internal linear sweep oscillator. 5Y3 low voltage rectifier. 2X2 high potential rectifier. VR-150 vertical amplifier voltage regulator. 5CP1/A CR Tube.
- \* 8 Four-Way Lab. Type Input Terminals — Take banana plugs, phone tips, bare wire or spade lugs.
- \* Light Shield and Mask removable and rotatable.
- \* Extra Heavy-Duty Construction and components to assure "Precision" performance.
- \* Heavy Gauge, Etched-Anodized, No-Glare, Aluminum Panel.
- \* Fully Licensed under patents of W. E. and A. T. & T. Co's.
- \* Series ES-500 (illustrated) — In louvered, black ripple, heavy gauge steel case. Size 8¼" x 14½" x 18". Complete with light shield, calibrating mask and instruction manual.  
Code: Quick. NET PRICE \$149.50
- \* External Deviation input facility for sweep frequencies other than internal source.
- \* Fuse Protected at panel extractor fuse post.
- \* Heavy Gauge, Etched-Anodized Aluminum Panel.
- \* Fully Licensed under W. E., A. T. & T. and Remco patents.

- \* Series E-400 (illustrated)—In Louvred, portable, copper-plated case. Size 10½" x 12" x 6". Complete with test cables, 2 crystals and elaborate Technical Manual.  
Code: Nancy. NET PRICE \$124.70
- \* E-400-PM — Consists of E-400 on 12¼" x 19" steel panel for standard rack mount. Complete as above.  
Code: Nicee. NET PRICE \$127.55

Series TV Super-High Voltage Television Safety Test Probes On Page F-42



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice



**Precision Series EV-10 VTVM-MEGOHMMETER**  
**True Zero-Center VTVM with 7" Full-View Meter**  
 Plus standard 1000 Ohms per Volt Functions.  
 Ranges to 6000 Volts • 2000 Megs. • 12 Amps. • + 70 DB.

A WIDE-RANGE ZERO-CENTER ELECTRONIC INSTRUMENT, stressing the utmost in performance, accuracy, and ease of manipulation. Series EV-10 permits rapid check of voltage, current, and resistance conditions encountered in modern A.M., F.M., and TV. Networks, without materially disturbing circuit under analysis.

### IMPORTANT FEATURES

- \* EV-10-MCP (illustrated) In black ripple finished, heavy gauge steel case. Size 10½"x12"x6". Complete with tubes, battery, and test probes.  
Code: Place. NET PRICE \$89.95
- \* EV-10-P In hardwood portable case with tool compartment.  
Code: Phone. NET PRICE \$92.70
- \* EV-10-PM Consists of Series EV-10 on steel panel. Size 12¼"x19" for standard rack mount.  
Code: Panel. NET PRICE \$92.70

- \* VOLTAGE REGULATED — BRIDGE TYPE CIRCUIT: direct reading VTVM, with practical freedom from tube and line voltage variations.
- \* ZERO-CENTER VTVM — Indicates both magnitude and polarity without reversal of test prods.
- \* MASTER RANGE SELECTOR.
- \* SHIELDED COAXIAL TEST PROBES.
- \* DUO-BALANCED ELECTRONIC-BRIDGE OHMMETER — Provides unusually high accuracy.
- \* TELEPHONE CABLED, plastic insulated, hook-up wire.
- \* 7" RECTANGULAR METER 400 microamperes, ±2%.
- \* 1% wire and metallized resistors.

### RANGE SPECIFICATIONS

\* **SERIES RF-10A VACUUM TUBE R.F. PROBE**  
 Accessory item for Series EV-10 and EV-20, the RF-10A Vacuum Tube Probe provides direct means for measurement of super-sonic, R.F. and U.H.F. voltages. Connects directly to Series EV-10 panel. Employs type 8002 tube probe rectifier. All operating voltages are applied through connecting cable. Complete with operating instructions.  
 Code: Probe. NET PRICE \$14.40

- \* Eight Zero-Center VTVM Ranges. ±3, ±6, ±12, ±60, ±300, ±600, ±1200, ±6000 volts D.C.
- \* Input Resistance— Constant 13½ megs. to 600 volts. 26¾ megohms at 1200 volts. 133½ megohms at 6000 volts.
- \* Six Circuit Probing, Zero-Center, V.T.V.M. Ranges: ±3, 6, 12, 60, 300, 600 volts D.C.
- \* **VTVM Ranges to 60,000 volts**, for Television and similar high voltage, low current applications, are available via use of the Series TV Test Probe described on page F-42.
- \* Six Ohmmeter-Megohmmeter Ranges: (self-contained). 0-2000-200,000 ohms. 0-2-20-200-2000 megohms.
- \* Eight A.C.-D.C. and Output Voltage Ranges at 1000 ohms per volt. 0-3-6-12-60-300-600-1200-6000 v.
- \* Seven D.C. Current Ranges: 0-600 microamperes. 0-3-12-60-300-1200 MA. 0-12 amps
- \* Eight DB Ranges: —26 to +70 DB.

## Precision Series E-200-C Signal Generator

A Modern Multi-Band Signal Generator for A.M., F.M., and Television Alignment.

Featuring "Servicing by Signal Substitution." The Dynamic Speed Approach to Receiver Alignment and Adjustment Problems.

### SPECIFICATIONS

- \* FREQUENCY COVERAGE: 88 KC. to 120 MC. 30 MC. on fundamental. 6½" Dial direct reading in 8 bands to 120 MC. No charts required.
- \* ACCURACY — CONSTANCY OF CALIBRATION: 1% accuracy on all bands. Uses "PRECISION" developed "UNIT-OSCILLATOR" construction.
- \* 0-1000 POINT VERNIER SCALE, direct reading to one part in 1000.
- \* THE CIRCUIT—single-ended 6SJ7 in stable E.C.O. circuit—modulated by a 6CS sine-wave audio oscillator. 5Y3 Full wave rectifier.
- \* 400 CYCLE SINE-WAVE AUDIO OSCILLATOR — over 50 volts output.
- \* DUAL R.F. ATTENUATORS — smooth stepless control of R.F. signal.
- \* SHIELDING — Compartment shielding of vital components — Power transformer electrostatically shielded—A.C. line is R.F. filtered.
- \* SHIELDED COAXIAL OUTPUT CABLE and (LO-HI) cable connectors.
- \* FOUR TYPES OF SIGNALS — "Unmod. R.F.", "400 cycle Mod. R.F.", "EXTERNALLY Mod. R.F.", "400 cycle Audio Output."
- \* DIRECT READING VARIABLE MODULATION — 0-100% — triples signal utility as against obsolete fixed modulation of only 30 or 40%.
- \* DIRECT READING A.V.C. SUBSTITUTION SYSTEM — Overcomes alignment troubles arising from receiver A.V.C. Supplies ITS OWN A.V.C. VOLTAGE.
- \* HAND CALIBRATED — Each instrument is INDIVIDUALLY calibrated.
- \* FULLY LICENSED under patents of A. T. & T. and W. E. Co's.
- \* Not only an efficient Signal Generator for purposes of alignment but also SPECIFICALLY DESIGNED for "Servicing by Signal Substitution."
- \* IDEAL MARKER GENERATOR — Exceptional stability and high accuracy renders Series E-200-C an excellent variable frequency Marker Generator for use with the Series E-400 or similar high quality Sweep Signal Generator.



\* Series E-200-C — (illustrated) In black ripple finished, portable steel case. Size 10½"x12"x6". Complete with tubes, output cable and FREE copy of "Servicing by Signal Substitution."  
 Code: Trade. NET PRICE \$67.25

\* E-200-C-PM—Consists of Series E-200-C on steel panel size 12¼"x19", for standard rack mount.  
 Code: Trace. NET PRICE \$69.70



**"SERVICING BY SIGNAL SUBSTITUTION" 11th Edition . . .** The modern ECONOMICAL solution to your daily service problems . . . Nothing complex to learn, no extraneous equipment to purchase . . . A systematic method of DYNAMIC SIGNAL ANALYSIS based entirely on fundamentals . . . Fully described in a bound illustrated text "Servicing by Signal Substitution." This highly valuable book is supplied with Series E-200-C at no charge. Additional copies available at your Precision distributor or directly from factory at 40¢ per copy.

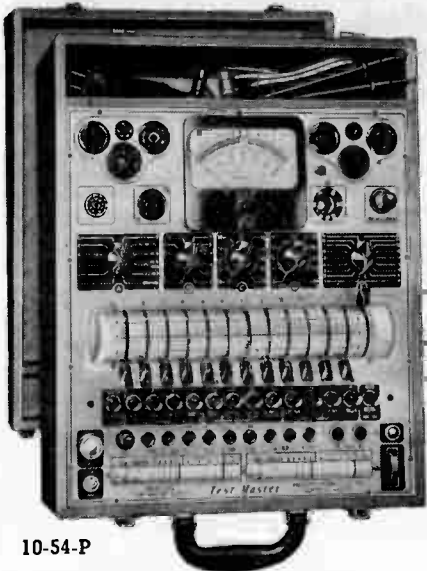




# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice



10-54-P

### CIRCUIT TESTING FEATURES

A complete, wide-range, high speed, push-button operated, super-sensitive test set without any additional panel controls. **Self-contained.**

- \* Six D.C. Voltage Ranges: 20,000 ohms per volt.
- \* Six A.C. Voltage Ranges: 1000 ohms per volt.
- \* Six Output Ranges at 1000 ohms per volt. 0-6-12-60-300-1200-6000 volts.
- \* Ranges to 60,000 Volts D.C. via use of Series TV Super high voltage test probe. Not included with 10-54. See Page F-15.
- \* Seven D.C. Current Ranges: 0-60-120 microamperes. 0-1.2-12-120-1200 MA. and 0-12 amperes.
- \* Four Self-Contained Resistance Ranges: 0-6000-600,000 ohms; 0-6-60 megohms.
- \* Six Decibel Ranges from -20 to +70 DB.
- \* Automatic Push-Button range selection.
- \* 1% Wirewound and Metallized Resistors.

## Series 10-54 Electronamic Test Master

Combination Tube Performance Tester, Battery Tester, and 35 Range, Push-Button Operated, Supersensitive, A.C.-D.C. Set Tester. Ranges to 6000 Volts, 60 Microamps, 12 amps, +70DB, 60 Meg. 20,000 Ohms per Volt D.C.—1000 Ohms per Volt A.C.

ELECTRONAMIC (Reg. U. S. Patent Office)

**More than just Mutual Conductance:** (Technical details in main catalog)

Series 10-54 affords to the discriminating instrument purchaser, **THE COMPLETE PORTABLE SERVICE LABORATORY:** engineered to meet the expanding needs of modern radio electronics. Provides every necessary facility for high speed, reliable tube and circuit testing associated with Industrial Electronics, Communications, Radio (A.M.-F.M.), Television, Laboratory, etc. . . .

### TUBE AND BATTERY TESTING FEATURES

- \* A TUBE "PERFORMANCE" TESTER: "Precision" ELECTRONAMIC circuit, effectively tests all tubes over a complete "Path of Operation" not just at one arbitrary operating point or for just one inconclusive characteristic.
- \* TESTS ALL MODERN TUBE TYPES: Noval 9 pin, 7 pin Acorn, dual capped H.F. tubes, Single-Ended TV. and F.M. amplifiers, low power transmitting tubes, sub-miniature types, etc. . . . including direct facilities up to twelve element prongs!
- \* ABSOLUTE FREE-POINT LEVER ELEMENT SELECTION: Highest possible, practical order of obsolescence insurance. Locates every tube element regardless of base position.
- \* ABSOLUTE FREE-POINT, INTER-ELEMENT SHORT-CHECK and Visible Filament Continuity System.
- \* DUAL SHORT-CHECK SENSITIVITY: Permits special application tube selection.
- \* INDIVIDUAL TUBE SECTION TESTS of multi-section tubes.
- \* A.M. and F.M. CATHODE RAY TUNING INDICATORS directly tested.
- \* FILAMENT VOLTAGES  $\frac{3}{4}$  to 117 V.
- \* BALLAST UNIT TESTS.
- \* NOISE and CONDENSER TESTS.
- \* MICRO-LINE ADJUSTMENT via continuously variable line voltage control.
- \* PILOT AND SIGNAL LIGHT TESTS.
- \* ACCURACY of test circuits closely maintained by use of individual, internal calibrating controls.
- \* ROLLER TUBE CHART: BUILT-IN.
- \* EXTRACTOR FUSE POST.
- \* Test circuits completely transformer-isolated from power line.
- \* TELEPHONE-TYPE, CABLED, plastic-insulated, moisture-resistant wire.
- \*  $\frac{4}{8}$ " FULL VISION METER: 50 microampere, 2% accuracy.
- \* TESTS RADIO A, B and C DRY BATTERIES via a "PRECISION" engineered circuit which performance checks each battery under actual load conditions. Battery quality read directly on a 3-color scale.

10-54-P (illustrated above) Hardwood, tapered, portable case, 13 $\frac{3}{8}$ "x17 $\frac{1}{4}$ "x6 $\frac{3}{4}$ ". With ohmmeter batteries and high voltage test leads. Code: Habit.

NET PRICE \$134.40

10-54-C (see 10-12-C illustration and description below) In modern, attractively finished, steel counter cabinet. Code: Handy, Complete:

NET PRICE \$137.70

10-54-PM (see 10-12-PM illustration and description below) In standard Panel Mount, with dust cover. Code: Harlem, Complete:

NET PRICE \$137.70

## Series 10-12 Electronamic Tube Master

Truly Free-Point Tube and Battery Performance Tester.

ELECTRONAMIC (Reg. U. S. Patent Office)

**More than just Mutual Conductance:** (Technical details in main catalog)

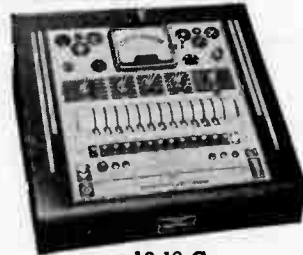
The 10-00 Series of TUBE and TEST MASTERS represent the culmination of many years' development of tube testing equipment to meet the exacting needs of the rapidly advancing field of electronics.

Incorporating the "PRECISION" ELECTRONAMIC Tube Performance Testing Circuit, plus an advanced, "PRECISION" developed, multiple element, master lever selector system, it truly can be said that the MASTER 10-00 Series offers, to the discriminating equipment purchaser, the highest possible practical order of test results and anti-obsolescence insurance.

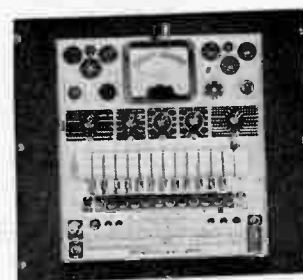
### TUBE AND BATTERY TESTING FEATURES

The Series 10-12 Electronamic Tube Master incorporates the same time-proven circuit and exacting performance details described for the Series 10-54, above, under the heading: "Tube and Battery Testing Features."

- \* 10-12-P (see 10-54-P illustration and description above) In hardwood, tapered, portable case with tool compartment. Code: Facit. Complete: NET PRICE \$96.10
- \* 10-12-C (illustrated at right) In modern, chrome-trimmed, round edged counter cabinet. Fine dull black ripple finish on heavy gauge steel. Size 17"x17 $\frac{1}{8}$ "x7 $\frac{1}{2}$ " sloping to 3" at front. Code: Faith. Complete: NET PRICE \$99.40
- \* 10-12-PM (illustrated at right) Consists of 10-12 chassis, mounted onto standard size steel panel, 17 $\frac{1}{2}$ "x19" with dust cover. Fine, dull black ripple finish. Code: Favor. Complete: NET PRICE \$99.40



10-12-C



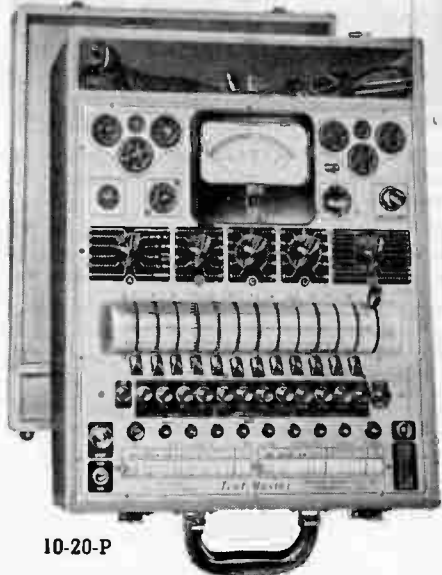
10-12-PM



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice



10-20-P

- \* 10-20-P (illustrated above) In hardwood, portable case with tool compartment. Size 13 $\frac{3}{4}$ "x17 $\frac{1}{4}$ "x6 $\frac{3}{4}$ ". Complete with ohmmeter batteries and test leads. Code: Daily. Complete: NET PRICE \$119.80
- \* 10-20-C (see 10-12-C illustration and description, page F-40) In standard panel mount finished, steel counter cabinet. Code: Dance. Complete: NET PRICE \$123.10
- \* 10-20-PM (see 10-12-PM illustration and description, page F-40) In standard panel mount with dust cover. Code: Dandy. Complete: NET PRICE \$123.10

## Series 10-20 Electronamic Test Master

Combination Master Electronamic Tube Performance Tester, Battery Tester and 34 Range A.C.-D.C. Push-Button Operated Circuit Tester. 1000 Ohms per Volt A.C. and D.C.

ELECTRONAMIC (Reg. U. S. Patent Office)

**More than just Mutual Conductance:** (Technical details in main catalog)

A complete, rugged service laboratory incorporating the time-proven "PRECISION" ELECTRONAMIC Tube Performance Tester, combined with full standard 1000 ohms per volt A.C. and D.C. Multi-Range features: PLUS a complete radio A, B and C Battery Tester.

Ideally suited and particularly engineered for thorough general purpose radio-electronic maintenance, service and installation.

### TUBE AND BATTERY TESTING FEATURES

The Series 10-20 TEST-MASTER provides the identical tube and battery performance testing features as outlined for the Series 10-54 on page F-40.

### CIRCUIT TESTING FEATURES

Wide-range, high speed, push-button operated set testing functions provide ranges to: 3000 volts, 600 microamperes, 12 amperes, 10 megohms, +64 DB. ALL SELF-CONTAINED.

- \* SIX A.C. - D.C. - OUTPUT VOLTAGE RANGES at 1000 ohms per volt. 0-6-12-60-300-1200-3000 volts.
- \* SIX D.C. CURRENT RANGES: 0-600 microamperes, 0-6-60-300-1200 MA. and 0-12 amps.
- \* FOUR SELF-CONTAINED RESISTANCE RANGES: 0-1000-100,000 ohms: 0-1-10 meg.
- \* SIX DB RANGES from -20 to +64 DB.
- \* 4 $\frac{5}{8}$ " WIDE VISION METER: 400 microamperes,  $\pm 2\%$ .
- \* 1% WIREWOUND AND METALLIZED RESISTORS.
- \* ONLY 2 TIP JACKS serve all standard ranges.
- \* AUTOMATIC INTERLOCKING PUSH-BUTTON RANGE SELECTION.
- \* ALL CIRCUITS ISOLATED FROM POWER LINE.

## Series 10-15 Electronamic Tube Master

Ultra-Modern, De Luxe Tube and Battery Merchandiser with large 9" meter.



10-15

- \* 10-15 Tube and Battery Merchandiser. (Illustrated) Heavy gauge steel cabinet in fine, dull black ripple, with chrome trim and reflector. Size 24" high, 17 $\frac{1}{2}$ " wide, base depth 10" tapering to 4" at top. Code: Gable. Complete: NET PRICE \$132.65
- \* 10-15-PM (see 10-22-PM illustration at right) On heavy gauge steel panel with dust cover. Panel 22 $\frac{3}{4}$ "x19" for standard rack mount. Fine, dull black ripple finish. Code: Gavot. Complete: NET PRICE \$127.50

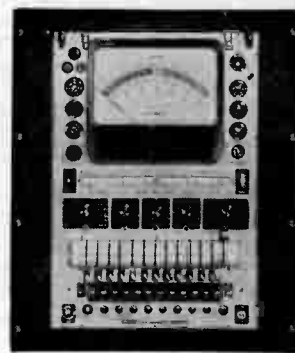
## Series 10-22 Electronamic Test Master

De Luxe Tube-Battery Merchandiser and Circuit Tester with large 9" Meter. 1000 ohms per volt A.C. and D.C.

ELECTRONAMIC (Reg. U. S. Patent Office)

**More than just Mutual Conductance:** (Technical details in main catalog)

- \* Incorporates the Electronamic tube performance and battery testing circuit, described for Series 10-54 on page F-40.
- \* Designed particularly for equipment-conscious, progressive radio service-sales organizations, and tube-selling sections of department stores.
- \* PROMOTE CUSTOMER CONFIDENCE and tube sales via this impressive "Precision" Tube Merchandiser.
- \* DIRECT READING non-contusing tube performance indications in large, easy reading terms of Replace-Weak-Good.
- \* ILLUMINATED by built-in, large chromium reflector.
- \* The Series 10-22 De Luxe Electronamic Service Laboratory is electrically identical to the Series 10-20 above.
- \* Incorporates every sales promotional advantage of the Series 10-15, at left, plus a complete 34 range A.C.-D.C. push-button operated, Multi-Range Test Set.
- \* Tube and Service Facilities are emphasized with this modern, impressive "Precision" engineered instrument.
- \* Ideal for behind-the-counter installation, also ideal for insertion into the center of tube stock-display shelving.
- \* 10-22 Combination Tube and Battery Merchandiser plus A.C.-D.C. Multi-Range Set Tester. In same cabinet illustrated for the model 10-15 (at left). Complete with test leads and ohmmeter batteries. Code: Gauge. Complete: NET PRICE \$155.15



10-22-PM

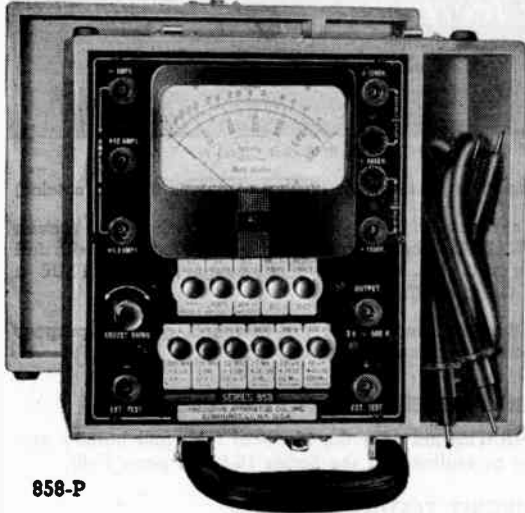
- \* 10-22-PM (illustrated) On heavy gauge steel panel with dust cover. Panel 22 $\frac{3}{4}$ "x19" for standard rack mount. Fine dull black ripple finish. Code: Gamut. Complete: NET PRICE \$150.00



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice



858-P

- \* 858-P (illustrated) In hardwood, portable case, with tool compartment. Size 9"x10"x4 1/2". Complete with ohmmeter batteries and high voltage test leads. Code: Judge. NET PRICE \$57.35
- \* 858-L In modern bakelite case with plastic carrying handle. Size 7 1/2" x 8 1/2" x 3". Complete with ohmmeter batteries and high voltage test leads. Code: Jetty. NET PRICE \$54.10

## Series 858 High Sensitivity Multi-Master

Dual-Range Sensitivity

High Speed, A.C.-D.C. Multi-Range Test Set. 54 Ranges to 6,000 Volts, 60 Microamperes, 12 Amps, 600 Megs. +70DB. 20,000 and 1,000 Ohms per Volt D.C. 1,000 Ohms per Volt A.C.

Series 858 MULTI-MASTER features a "Precision" designed, positive action Push-Button Range and Function selection system, affording the ultimate in operational efficiency.

Designed for reliable measurements in modern T.V., F.M., A.M. and other critical electronic circuits where only minute current drain of the measuring instrument can be tolerated.

The dual-range sensitivity feature provides the equivalent of another instrument at standard 1000 ohms per volt sensitivity, in conformance with many point to point voltage readings listed by receiver service manuals.

When employed in conjunction with the Series TV super-high voltage test probe (described below), direct reading facilities to 60,000 volts are provided.

### SPECIFICATIONS

- \* EIGHT D.C. VOLTAGE RANGES both 20,000 and 1000 ohms per volt.
- \* EIGHT A.C. and OUTPUT VOLTAGE RANGES at 1000 ohms per volt. 0-3-6-12-60-300-600-1200-6000 volts.
- \* EIGHT D.C. CURRENT RANGES: 0-60-120 microamperes. 0-1.2-12-120-600 MA. 0-1.2-12 amps.
- \* SIX RESISTANCE RANGES: self-contained to 60 megohms. 0-6000-60,000-600,000 ohms. 0-6-60-600 megohms.
- \* EIGHT DB RANGES: -26 to +70DB.
- \* Two Pin Jacks for all standard ranges.
- \* 4 5/8" 50 microamp. meter. ±2%.
- \* 1% Wire and Metallized Resistors.
- \* Safety Jacks for 6000 volt ranges.
- \* HIGHEST GRADE MATERIALS and plastic insulated wiring employed.
- \* ETCHED AND ANODIZED, heavy gauge aluminum panels: resistant to moisture and wear.



## Series TV Super High Voltage SAFETY TEST PROBES\*

Voltage Ranges to 60,000 Volts D.C. With standard V.T.V.M. or high sensitivity V-O-M

\*Patent Applied For.

"Precision" engineering solves the high voltage TV. test problem with utmost safety to the operator. Series TV. has been custom designed for YOUR safety FIRST. Cartridge style high voltage tubular multiplier permits use of a single "TV." probe with most popular high sensitivity test sets and V.T.V.M.'s. (See reverse side of "Precision" price sheet for details.)

The brief features below reveal that Series TV. has been specifically engineered as a true High Voltage Testing Device.

- \* Custom Molded Polystyrene Head, heavy duty bakelite handle and barrier, specially machined internal lucite components, all spell out "HIGH VOLTAGE ENGINEERED."
- \* High Dielectric Anti-Leakage Paths and wide, multi-channelled guard-barrier reiterate "HIGH VOLTAGE ENGINEERED."
- \* Internal and External Protective Grounding — Full handle length grounded internal flash-over-shield. External, grounded arc-back barrier. HIGH VOLTAGE ENGINEERED!
- \* Heavy Duty Shielded Connecting Cable.
- \* Ceramic, Helical Film-Type, Cartridge Multiplier manufactured specifically for VERY HIGH VOLTAGE APPLICATION. Removed and changed without tools!
- \* Positive Grounds and HV Connections via high compression contact springs.

SERIES TVP—Test Probe less multiplier cartridge, with instructions. Code: Ebony. NET PRICE \$12.35

SERIES TV-1 (illustrated) with 30 KV cartridge for "Precision" Series EV-10 VTVM. Code: Elegy. NET PRICE \$11.45

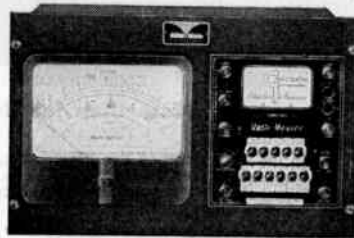
SERIES TV-2 with 30 KV cartridge for "Precision" (or any) 20000 ohms/V. test set with 6000 V. range. Code: Every. NET PRICE \$15.45

SERIES TV-3 with 30 KV cartridge for "Precision" Series EV-20 VTVM. Code: Eclat. NET PRICE \$15.45

TVM — Cartridge Multiplier only for Series TV. See reverse side of "Precision" price sheet.

## Series 866 De Luxe Multi-Master

Panel-Mounted, A.C.-D.C. Test Set, 9" Meter and Remote-Control Selector Unit. 5000 and 1000 Ohms per Volt D.C. 1000 Ohms per Volt A.C.



A laboratory type, high sensitivity test set indispensable to the well equipped, modern test laboratory and electronics classroom.

The extra-large 9" meter and remote-control selector unit afford unparalleled operational efficiency with maximum physical protection via panel mounting above the work level.

RANGE SPECIFICATIONS OF SERIES 866 are similar to those described for Series 858 above. 5000 and 1000 ohms/V.D.C.

54 ranges to 6000 volts, 300 microamperes, 12 amperes, 200 megohms, +70 DB.

- \* 866 (illustrated) In standard panel mount, size 19"x12 1/4" with dust cover. Complete with high voltage test leads and ohmmeter batteries. Code: Novel. NET PRICE \$71.65

## Series 847 Dual Sensitivity Multi-Master

5000 and 1000 Ohms per Volt

Physically similar to Series 858 at top of page, the Series 847 is a moderate sensitivity, wide range test set specifically prescribed for applications wherever ruggedness is of greater import than extremely high sensitivity. Range specifications are identical to the Series 866 above.

- \* 847-L — Code: Index NET PRICE \$47.65
- \* 847-P — Code: Ivory NET PRICE \$50.90



# PRECISION TEST EQUIPMENT

STANDARD OF ACCURACY

All prices are subject to change without notice



612-C

- \* 612-C (illustrated) In modern, chrome-trimmed, counter cabinet. Black ripple finish. Size 16" x 13½" x 7", sloping to 3" at front. Code: Bison. Complete: \$71.90
- \* 612-P In hardwood, portable case (as illustrated for 654, below). Size 12" x 13" x 6". Code: Begin. Complete: \$69.50
- \* 612-MCP Open style Metal Case Portable. Size 10½" x 12" x 6". Code: Brine. Complete: \$66.65
- \* 612-PM In standard size panel mount 12¼" x 19" with dust cover. Code: Blaze. Complete: \$69.50

- \* TESTS ALL MODERN TUBE TYPES including 7 pin Acorns, Noval 9 pin, dual capped H.F. tubes, F.M. and TV. amplifiers.
- \* FILAMENT VOLTAGES ¾ to 117 volts.
- \* ABSOLUTE FREE-POINT 10 element lever selection for merit and short tests.
- \* 4½" METER, 2% ACCURACY.
- \* DUAL SHORT-CHECK SENSITIVITY.
- \* INDIVIDUAL TESTS OF MULTI-SECTION TUBES including tuning indicators.
- \* BALLAST UNIT TESTS.
- \* MICRO-LINE ADJUSTMENT.

- \* NOISE and CONDENSER TEST pin jacks.
- \* Pilot Light Test Socket.
- \* DYNAMIC "UNDER-LOAD" TEST for all popular radio A, B, and C dry batteries.
- \* Built-in, brass geared roll chart.
- \* Anodized, deep-etched, heavy gauge aluminum panel, resistant to wear.
- \* Panel-mounted Fuse Extractor Post.
- \* Telephone type cabled, plastic-insulated, moisture resistant hook-up wire.
- \* Each instrument individually calibrated and sealed.

## Series 612 Cathode Conductance Tube Tester

A Modern, Free Point, Lever Operated Tube and Battery Tester.

The new "600" Series brings to the field of modern electronic tube checking the highest practical order of obsolescence insurance with utmost simplicity of operation, AT MODERATE COST. This has been achieved with full conformity to the well-known "Precision" standards of quality, workmanship, and performance.

The "600" tube testing parameters are based upon the well-established, time-proven emission testing principles as have been recommended by both tube manufacturers and R.M.A. The "600" line affords advanced design features and performance which render it incomparable amongst instruments in its category and price range.

### TUBE AND BATTERY TESTING FEATURES

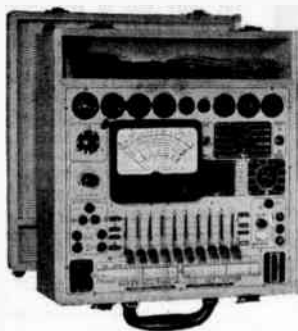
## Series 654

# COMBINATION TUBE, BATTERY AND SET TESTERS

## Series 620

20,000 OHMS PER VOLT D.C.  
1,000 OHMS/VOLT A.C. • Ranges to 6,000 V.,  
120 Microamperes, 12 Amps., 60 Megs., +70 DB.

1,000 OHMS PER VOLT A.C. AND D.C.  
STANDARD SENSITIVITY • Ranges to 3,000 V.,  
12 Amperes, 10 Megohms, +64 DB.



654-P

- \* SERIES 654 is an economical, compact High Sensitivity Service Laboratory designed to meet the specific needs of modern electronics service and maintenance, A.M., F.M., and TV.

Series 654 incorporates the identical tube and battery testing features of the Series 612 above. PLUS a complete wide range, high sensitivity A.C.-D.C. circuit tester.

- \* SERIES 620 is identical to the Series 654, at left, except for the lower D.C. multi-range meter sensitivity and related range differences as indicated above.

Provides every essential feature for general purpose test and check of modern radio and electronic equipment.

Series 620 is the logical choice as a highly rugged, reliable "Precision" quality instrument at moderate cost.

The Series 654 and 620 are available in the same four model types as described for the Series 612 above.

### NET PRICES

Code	Net Price	Code	Net Price
* 654-P Hardy	\$106.40	* 620-P Local	\$94.10
* 654-MCP Hurry	103.55	* 620-MCP Lofty	91.25
* 654-C House	108.90	* 620-C Loyal	98.50
* 654-PM Heart	106.40	* 620-PM Legal	94.10

### CIRCUIT TESTING FEATURES

- \* 5 D.C. Voltage Ranges: 20,000 ohms per volt.
- \* 5 A.C. and Output Voltage Ranges: 1000 ohms per volt 0-12-60-300-1200-6000 volts. Ranges to 60,000 Volts D.C. via use of Series TV. Super high voltage test probe. Not included with 654. See page 9.
- \* 6 D.C. Current Ranges: 0-120 microamperes. 0-1.2-12-120 MA. 0-1.2-12 Amperes.
- \* 3 Wide Resistance Ranges 0-6000-600,000 ohms. 0-60 Megs. Self-contained batteries.
- \* 5 Decibel Ranges from -12 to +70 DB.
- \* Fully Rotary Selective Ranges and Functions.
- \* Only 2 Pin Jacks for all standard ranges.
- \* Recessed 6,000 V. safety pin jacks.
- \* 50 microampere, 45° Wide-Angle meter.
- \* 1% Wirewound and film-type resistors.
- \* All circuits isolated from power line.



614

## Series 614 DE LUXE TUBE AND BATTERY MERCHANDISER

Modern, Counter Type Tube and Battery Tester with Large 7" Chrome Trimmed Meter.

The Series 614 is designated for the progressive tube and battery department wherein an exceptionally attractive instrument is desired to step-up tube and battery sales with minimum investment.

The 7" meter provides a full view of test results.

The tube and battery testing circuit of Series 614 is electrically identical to that described for Series 612 at top of page.

- \* 614 Tube and Battery Merchandiser (illustrated) — in modern, chrome-trimmed, fine black ripple finished cabinet. Offset mounted meter. Cabinet size 16" x 13½" x 7", slopes to 3".

Code: Early.

NET PRICE \$89.30



# -PRECISION- TEST EQUIPMENT

STANDARD OF ACCURACY



## Series 40 Compact Wide-Range Circuit Tester

31 Range A.C.-D.C. Test Set . . . Self-Contained to 6000 Volts, 600MA, +70DB, 5 Megohms with Full Size 3" Rectangular Meter. 1000 Ohms per Volt A.C. and D.C.

In molded bakelite carrying case, Series 40 meets the need for a compact, yet rugged test set to withstand hard usage as is imposed by the service technician, maintenance engineer, production inspector, trouble-shooter, etc.

The Series 40 offers every advanced design feature and full-bodied components as are regularly incorporated in "Precision's" larger multi-range test sets, including: Rotary Range Selection—1% shunts and multipliers—heavy duty insulated pin jacks—Large numeralled, easy reading meter.

**ALL RANGES, including 6000 volts and 5 Megohms, are SELF-CONTAINED NO EXTERNAL BATTERIES OR MULTIPLIERS ARE REQUIRED.**

### RANGE SPECIFICATIONS

- \* 6 A.C.-D.C. AND OUTPUT VOLTAGE RANGES at 1000 ohms per volt. 0-3-12-60-300-1200-6000 volts.
- \* 4 D.C. CURRENT RANGES: 0-.6-6-60-600 MA.
- \* 3 RESISTANCE RANGES: 0-5000-500,000-5 megohms.
- \* 6 DECIBEL RANGES —22 to +70 DB.
- \* FULL SIZE 3" RECTANGULAR METER: 400 microampere  $\pm 2\%$ .
- \* 1% WIRE & FILM-TYPE RESISTORS.
- \* ONLY 2 PIN JACKS serve all standard functions.
- \* Recessed 6000 volt safety jack.
- \* Anodized, etched aluminum panel: resistant to moisture and wear.

\* Series 40 (illustrated) In molded bakelite case with plastic handle.  $3\frac{3}{4}'' \times 6\frac{1}{4}'' \times 2\frac{1}{2}''$ . Complete with ohmmeter batteries and test leads. Code: Visit. NET PRICE \$24.75

**LC-2 LEATHER INSTRUMENT CASE:** Genuine top-grain heavy cowhide case, custom designed for the Series 40. Richly finished in dark brown. Code: Young. NET PRICE \$4.95

## Series 85 High Sensitivity Test Set

20,000 Ohms per Volt D.C. ,000 Ohms per Volt A.C. 34 Self-Contained Ranges to 6000 Volts, 120 Microampere, 12 Amperes, +70DB, 60 Megohms.

The Series 85 is a bakelite cased, laboratory styled, portable instrument.

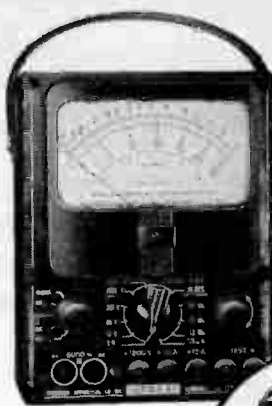
Combining high sensitivity with small overall size, Series 85 is "Application Engineered" for production, lab., school and service-maintenance phases of modern electronics: A.M., F.M., and TV.

\* When used with the Series TV super-high voltage test probe, D.C. voltage ranges up to 60,000 volts are provided for Television and similar high potential, low current circuits. See page F-42.

### SPECIFICATIONS

- \* 6 D.C. Voltage Ranges: 20,000 ohms per volt.
- \* 6 A.C.-Output Voltage Ranges: 1000 ohms per volt 0-3-12-60-300-1200-6000 volts.
- \* 6 D.C. Current Ranges: 0-120 microamps. 0-1.2-12-120 MA and 0-1.2-12 amps.
- \* 4 Resistance Ranges: Self-contained. 0-6000-600,000 ohms; 0-6-60 megs.
- \* 6 Decibel Ranges: —26 to +70DB.
- \*  $4\frac{1}{8}''$  Rectangular Meter. 50 Microampere. 2% accuracy.
- \* 1% Wire & Film-type Resistors.
- \* Rotary Range Selection: All standard functions at 2 tip jacks.
- \* Recessed 6000 volt safety jacks.
- \* Anodized, heavy gauge, etched aluminum panel: resistant to moisture and wear.

\* Series 85 (illustrated) in molded bakelite carrying case with plastic handle.  $5\frac{1}{2}'' \times 7\frac{1}{8}'' \times 3''$ . Complete with ohmmeter batteries and test leads. Code: Waist. NET PRICE \$38.75



Series 85



Series 80



Series LC-1

**LC-1 LEATHER INSTRUMENT CASE**  
 Custom designed for the Series 80 and 85. Includes a tool and test lead compartment.  
 Genuine-top-grain heavy cowhide with water-proof lined suede interior. Adjustable hand or shoulder strap. Positive snap-lock. Richly finished in dark brown. Code: Yearn. NET PRICE \$8 7"

The Series 80, laboratory styled, rotary selective, multi-range circuit tester has been designed to meet the same high calibre performance standards as the Series 85 (at left) but is specifically intended for use wherein greater resistance to electrical and physical overload is of more importance than extremely high sensitivity.

"Application Engineered" for general purpose industrial and radio service-maintenance-test requirements.

### SPECIFICATIONS

- \* 6 A.C.-D.C.-Output Voltage Ranges: 1000 ohms per volt. 0-6-12-60-300-1200-6000 volts.
- \* 6 D.C. Current Ranges: 0-.6-6-60-300 MA and 0-1.2-12 amps.
- \* 4 Resistance Ranges: Self-Contained. 0-1000-100,000 ohms. 0-1-10 megohms.
- \* 6 Decibel Ranges: from —20 to +70DB.
- \*  $4\frac{1}{8}''$  Rectangular Meter: 400 microampere, 2% accuracy.
- \* 1% Wirewound and Film-type Resistors.
- \* Recessed 6000 volt safety jack.
- \* Anodized, etched aluminum panel resistant to moisture and wear.

\* Series 80 (illustrated) In molded bakelite carrying case with plastic handle.  $5\frac{1}{2}'' \times 7\frac{1}{8}'' \times 3''$ . Complete with ohmmeter batteries and test leads. Code: Weave. NET PRICE \$32.70

All prices are subject to change without notice

**HICKOK**

# TEST EQUIPMENT

## THE ACCEPTED STANDARD TV ALIGNMENT GENERATOR

More in use today than all others combined. Contains 3 most practical markers including Absorption. Marker Range: 19.5 to 48 mc.—Covers all I.F. frequencies in TV receivers.

Contains linear sweep with unusual accuracy to 2%. Hickok iron modulator furnishes symmetrical pattern response curve for easier and more accurate readings.

### THIS 1 INSTRUMENT DOES THIS

1. Visually align a television receiver to any of the 13 present-day television channels from 44 mc to 216 mc.
2. Visually align IF stages of any television receiver—including the old and current bands, and new bands. Marker range—19.5 - 48 mc.
3. Align all traps with a calibrated signal—modulated or unmodulated.—19.5 - 48 mc.
4. Insert a marker—accurate to .05 mc—at any point along the IF response curve. This marker frequency is directly calibrated on a dial  $9\frac{1}{2}$  inches long.
5. Align IF or RF Sections by single stage method—with high output.
6. Attenuate the output down to a very low signal in microvolts.
7. Align a television receiver independent of any local television station. The generator is complete.
8. Align channels 5 through 13 directly by the calibrated FM Oscillator without necessity of heterodyning the oscillator against a fixed oscillator.
9. Highly stable.
10. Makes possible a crystal controlled frequency modulated or unmodulated for any frequency as low as 5 mc to the upper television channel No. 13 at 216 mc.

### THIS IS ANOTHER OUTSTANDING HICKOK "FIRST"

Hickok was first with Dynamic Mutual Conductance—first with the serviceman's FM sweep generator—first with the complete oscillograph including FM sweep oscillator. Now first again with the complete Television Alignment Generator—the latest in a line of fine radio test equipment that has lead the field for over a third of a century.

**Model 610A****Net Price \$209.00**

Power Supply: 105-125 V., 50-60 cycles, A.C.  
 Tube Complement: 6J6—Variable oscillator; 6AK6—Fixed oscillator;  
 6J6—Mixer; 6AK5—Cathode follower output; 6SN7—Crystal oscillator & marker oscillator; 6J5—Audio oscillator; 6X5—Rectifier.  
 Shipping Weight: 31 lbs.  
 Size: 14 x 16½ x 8; Satin chrome finish panel Blue Hammertex finished case.

## SPECIAL "D" SERIES DISPLAY EQUIPMENT

To Sell and Safeguard  
Your Service

Start to build your business  
this sure-fire way NOW!

Separate Display Cases Available for Any  
of These Hickok Testers You Already Have!

Most Convenient "Fit All Space" panels that are possible to design.

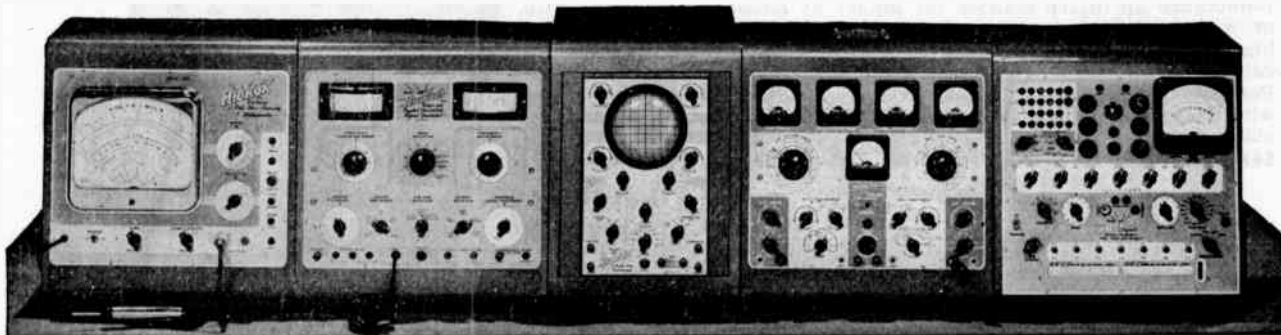
Makes a Most Magnificent, Solid and "Stay Put" Layout.

Can be arranged in Sections or Multiples of Associated Units for Specialized Service. Rearrangement may be made as desired. Show Your Service "Know-How." Put it out where your customers can see it.

"D" SERIES WILL SELL IT—CLINCH IT—SAFEGUARD IT. The following instruments are available in display cases—Models 209—288X—105B—534—101X—505A—533.

Size, each case: 18¼" high, 17" wide, 11" deep. (Oscilloscope cases: 18½" deep)

Weights: Approximately same as regular models.



**HICKOK**

# TEST EQUIPMENT

## DYNAMIC MUTUAL CONDUCTANCE (TRANSCONDUCTANCE)\* TUBE TESTERS

### MODELS 533-P AND 533-C



Model 533-P

finish. In our selector switches complete flexibility has been provided to take care of unusual base pin connections; but in routine testing seldom more than one or two manipulations are necessary. Roll chart in the panel makes tube data easily and quickly available. Tests grid controlled rectifier tubes. Continuity checks can be made by a special new feature of design. Wide range of voltage checks can be made. Has sub-miniature sockets for testing hearing aid and N-line tubes.

\*Mutual conductance and transconductance mean the same thing.

Specify "P" for Portable, "C" for Counter Type  
When Ordering.

**Net Price, either Model, \$139.95**

#### SPECIFICATIONS

Size—17" x 18" x 8½". Weight 27 lbs.  
Shipping Weight—34 lbs.  
Power Supply—110-130 Volts 50-60 Cycles.  
Tube Complement—1 No. 83—1 No. 5Y3 GT.  
Other voltage or cycles available.

### NEW DESIGN ALL-PURPOSE TUBE AND SET TESTER — Model 534-B

In addition to the many tube tester features of the 533, the Model 534-B tube and set tester measures volts, ohms, milliamperes, capacitance, inductance, leakage and decibels. Specific features are as follows: Voltage Ranges: 0-20-200-500-1,000-5,000V A.C. and D.C. Resistance—0.1 ohm to 100 megohms in three overlapping ranges. No batteries needed. Capacitance—0.0001 to 100 microfarads in overlapping ranges. Checks leakage of electrolytic or paper condensers. Inductance up to 100 henries (or higher by simple calculation) with or without D.C. component. Decibel ranges —10 to + 50 D.B. (or higher by simple calculation). Checks hum in any stage of the receiver. Meter scale 4½" long clearly marked for easy reading. Portable carrying case, black imitation leather covered hardwood with detachable cover. Has sub-miniature sockets for testing hearing aid and N-line tubes.

**SENSITIVITY:** 20,000 ohms per volt D.C., 5,000 ohms per volt A.C.

#### SPECIFICATIONS

Size 17" x 18" x 8½"  
Weight—28 lbs.  
Shipping Weight—35 lbs.  
Power Supply—110-130 Volts, 50-60 Cycles  
Tube Complement—1 No. 83, 1 No. 5Y3GT  
2 No. 6H6, supplied and installed.  
Panel—Two-tone Satin Chrome finish

**Net Price  
\$179.00**



Model 533-C

Also available in Hickok "D" Series display case at no additional cost.



Model 534-B

Also available in display type case at no additional cost.

**HICKOK**

# TEST EQUIPMENT

## NEW MICROVOLT SIGNAL GENERATOR for AM, FM, TV and Mobile Bands



Model 292-X

**Net Price \$231.95**

**TECHNICAL CHARACTERISTICS** — Fundamental Frequency Coverage: Bands A through G — 125 kc to 110 mc; Band H — 150 to 220 mc. Output Calibrated: 1 to 100,000 microvolts. Output Impedance: X1, X10, and X100 microvolts — 5 ohms; X1K — 30 ohms. X10K — 0 to 100 ohms. Modulation Fixed: 400 cycles. AF Output: 0-2 volts. The Model 292-X is wired for a plug-in type crystal (152-162 mc), with accuracy to .005%. Self-Contained crystal oscillator circuit has crystal jack on front panel permitting crystal outputs at any frequency from 250 kc to 20 mc on fundamentals; and to over 250 mc on harmonics. Type CCO-56 Crystal Oscillator unit available with frequency accuracy to .005% for Mobile Band coverage. Self-Contained Decibel Meter: -10 to  $\pm 38$  DB in 3 ranges. Tube Complement: 1 6SN7, 2 6J6, 1 6SQ7, 1 6X5GT. Power Consumption: 35 watts at 115 volts. Meter Model: 50; 105-125 V., 50-70 cycles, A.C. 14" x 16½" x 8"; 29 lbs. Net: 88# Ship. Satin Chrome Panel. Blue lacquered steel case.

Model 292-X—125 kc to 220 mc on fundamentals.

THE ONLY SIGNAL GENERATOR WITH ALL THESE

### FEATURES

- Covers all AM, FM, TV and Mobile Frequencies
- Measures Input of Units under test
- Modulated and Unmodulated Output from 1 to 100,000 microvolts
- Cast Aluminum Attenuator for Minimum Signal Leakage
- May be externally modulated from 15 to 10,000 cycles per second
- Decibel Meter for faster servicing
- Self-contained Crystal Oscillator Circuit — Crystals from 250 kc to 20 mc are available
- Over 100 inches of scale
- Most accurate Microvolt Generator available for practical radio servicing

### OPTIONAL

Crystal Oscillator for Accuracy to .005% in 152-162 mc Mobile Range.

This new HICKOK Model 292-X is the only popularly priced Microvolt Generator available that covers both Upper Channel TV and Mobile frequencies — on fundamentals.

## LINEARITY-PATTERN GENERATOR Model 620—Crystal Controlled (L. P.)



Model 620

**Net Price \$176.55**

**TECHNICAL CHARACTERISTICS** — Output Frequencies: 4 channel — 3 through 5 inclusive. However, for servicing, only one channel is necessary. Output Voltage: 50 to 5,000 Microvolts. All modulating frequencies are crystal controlled. Horizontal lines: 8 or 9. Vertical lines: 12. Selection of Horizontal or Vertical lines can be made separately or simultaneously as a Cross-Hatch pattern. Power: 105-125V., 60 cycles AC. Net weight: 11½ lbs. — Ship. weight: 18 lbs. Beautiful blue hammertex steel case with satin chrome panel. Supplied complete with test leads.

**PROVIDES A STABLE VIDEO PATTERN  
At Any Time for Alignment  
and Trouble Shooting**

**NOW INDEPENDENT OF STATION OPERATION  
THE MODEL 620 GIVES YOU THESE OUTSTANDING**

### FEATURES

- Provides Stable Linear TV Pattern at any time
- Checks Relative Receiver Sensitivity
- Detects Hum in Horizontal Deflection Circuits
- Provides Means for Checking and Aligning of:  
Horizontal and Vertical Linearity and Drive Controls  
Horizontal and Vertical Width, Height and Hold Controls  
Horizontal A.F.C. Circuits
- Fast and Easy to use: Merely connect to receiver antenna
- Extremely useful in fringe areas where reception during installation is lacking or questionable
- New High and Low Output Jacks

Today's Video serviceman needs an independent and more accurate pattern to rapidly trouble shoot in television servicing. The HICKOK Model 620 Cross-Hatch Generator has a high enough output to obtain a clear picture on the screen of any TV receiver. With a HICKOK 620 you can rapidly service in borderline areas where broadcast reception is unpredictable. You can align more hours per day — for more profit.



**HICKOK**

# TEST EQUIPMENT

## UNIVERSAL CRYSTAL CONTROLLED SIGNAL GENERATOR Models 277, 277X and 288X

The Universal Crystal Controlled Signal Generators, Models 277, 277X and 288X, are specifically designed to meet the many and varied needs of the radio engineer and service man working with frequency and amplitude modulated receivers and with television equipment. The wide range in radio-frequencies and audio-frequencies available, with the many choices of type of modulation, makes these Models most versatile and practical instruments.

All three models are the same except for the following features: 0.01% accurate crystal controlled outputs, both amplitude modulated at 400 cycles and unmodulated, offered in Models 288X and 277X only. Self-contained decibel meter with 42" cable, Model 288X only.

### SPECIAL FEATURES

Complete frequency modulation coverage with three variable bandwidths of sweep: 0-30 kc, 0-150 kc, 0-450 kc. Frequency modulation at two self-contained modulating frequencies: 60 cycles and 400 cycles. Provisions for external amplitude and frequency modulation to 15,000 cycles. Self-contained amplitude modulation at 400 cycles. Continuously variable audio frequency from 0-15,000 cycles. Audio frequency and radio frequency outputs are continuously variable from zero to maximum. 60 cycle synchronized sweep voltage is available for use with an oscillograph.



Model 288-X

**Net Price: \$176.95**

Dimensions—14" x 16½" x 7"  
Net Weight—25 lbs.—Ship. 36 lbs.  
Meter—Model 51X, Model 288X only

### SPECIFICATIONS

Scale—over 100"  
Satin-chrome finish panel  
Blue baked Hammertex finished case.

**POWER SUPPLY:** 105-125 V, 50-70 cycles, A-C. Power Consumption: 20 watts at 115 volts. Amplitude Modulated, Pure R-F Frequency Range: 100 kc-110 mc. Frequency Modulated R-F Frequency Ranges: Narrow Band (0-30 kc Sweep): 100 kc to 110 mc in 7 ranges: Wide Band (0-150-450 kc Sweep) 1 mc to 160 mc in 7 ranges. Modulation: Amplitude Modulation—400 cycles; Frequency Modulation—0-450 kc variable sweep, 50 mc. modulating frequency 60 cycles; 0-150 kc variable sweep, 50 mc. modulating frequency 400 cycles; 0-30 kc variable sweep, 1000 kc, modulating frequency 60 cycles; External Modulation—Amplitude or frequency modulation, variable 0-15,000 cycles. A-F Range: Fixed at 400 cycles, variable from 0-15,000 cycles. Crystal Controlled Output (Models 277X and 288X only)—100 kc, Unmodulated: 100 kc-15 mc, utilizing harmonics; 100 kc, 400 cycle amplitude modulated: 100 kc-15 mc, utilizing harmonics; 1000 kc, Unmodulated: 1000 kc-125 mc, utilizing harmonics; 1000 kc, 400 cycle amplitude modulated: 1000 kc-125 mc, utilizing harmonics. Output: R-F, continuously variable from 0 to maximum (with multipliers X1, X10 and X100); A-F, continuously variable from 0 to maximum, linear control. for both 400 cycle and variable frequency outputs. Synchronized Sweep Voltage: for horizontal deflection of oscillograph (60 cycles.) DB Meter Range (Model 288X only): -10 to +6, +6 to +22, +22 to +38. Tube Complement—1 6C4, 2 6SN7, 1 6SJ7, 1 6X5G.

**HICKOK**

# TEST EQUIPMENT

## COMPLETE 5" OSCILLOGRAPH with F. M. SWEEP Model 505-A



Model 505-A

**Net Price: \$186.80**

Power Supply: 105-125 V, 50-70 cycles, A-C. Deflection Sensitivity: Vertical—0.015 volts (rms)/inch. Horizontal—0.3 volts (rms)/inch. Horizontal, Direct—15 volts (rms)/inch. Input Impedance: Vertical—1 megohm, 25 mmf. Horizontal, Direct—3 megohm. Tube Complement: 1 5UP1—cathode ray tube, 1 6SN7—r-f oscillator and mixer, 1 6J5, 1 6AG7—vertical amplifier, 1 6J7—horizontal amplifier, 1 6SQ7—reactance tube, 1 5Y3—high voltage rectifier, 1 5Y3—low voltage rectifier, 1 884—sweep circuit oscillator.

Specifically designed for use with frequency modulated, amplitude modulated and television equipment. Permits a complete visual analysis of the electrical and electronic circuits of the i-f and r-f bands as well as the audio frequency stages. The effectiveness of a tube or circuit as an amplifier, rectifier, or source of special wave shapes may be readily determined.

Interprets modulation, phase relations, voltage amplitudes, distortion, etc. Responds accurately to voltages in wide ranges of both frequencies and amplitudes.

### SPECIAL FEATURES

Wide band, high gain vertical amplifier, 2 cycles to 1 megacycle. Self-contained wide-band frequency modulated oscillator with variable sweep width, 0-450 kc. Self-contained narrow-band frequency modulated oscillator with variable sweep width, 0-30 kc. Signal tracer jack is incorporated so that, when used in conjunction with a speaker or ear phones, the signal may be simultaneously seen and heard. Provisions for modulation by an external audio frequency source to provide the equivalent of a frequency modulated transmitter for receiver checks. Self-contained mixer circuit provided so that when used in conjunction with any good external oscillator, wide band or narrow band frequency modulated outputs may be produced within the frequency limits of the external oscillator. High sensitivity amplifiers. Calibrated screen. Has self-contained frequency modulated oscillator. Can be used with any signal generator for servicing FM or AM sets.

### SPECIFICATIONS

Dimensions—14" x 11½" x 15½"

Weight—32 lbs.

Cathode Ray Tube—5"

Satin-chrome finish panel

Blue baked Hammertex finished case

## NEW 5" HIGH SENSITIVITY OSCILLOGRAPH

### Model 195-B

With this oscilloscope you can align I. F. transformers, trace trouble, analyze wave shape of signal, determine unknown frequencies, amplify and view very weak signals. Has big 5" screen, extra high gain vertical amplifiers, sinusoidal sweep circuit and phasing control for proper I. F., R. F. and discriminator alignment.

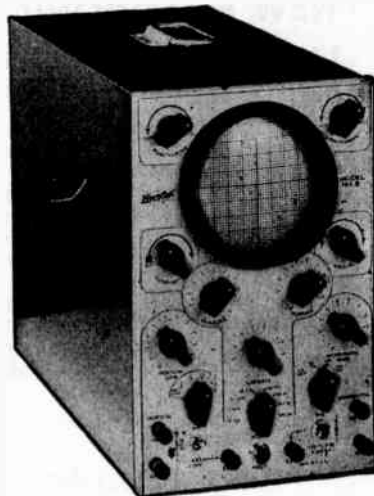
### TECHNICAL CHARACTERISTICS

- Power supply required: 105-125 V, 50-70 cycles A.C.
- Power Consumption: 50 Watts at 115 Volts
- Deflection Sensitivity:
  - Vertical—0.015 Volt (rms) per inch
  - Vertical, Direct—15 Volts (rms) per inch
  - Horizontal—.15 Volt (rms) per inch
  - Horizontal, Direct—20 Volts (rms) per inch
- Input Impedance:
  - Vertical—1 meg, 25 mmf
  - Vertical, Direct—2.2 meg
  - Horizontal—4 meg, 35 mmf
  - Horizontal, Direct—2.2 meg
- Frequency Range:
 

Amplifier, Vertical—2 cycles to over 1.0 mc

Amplifier, Horizontal—10 cycles to 50 kc
- Tube Complement:
 

Tube	Function
1 6SJ7	Horizontal Amplifier
1 884	Sweep Circuit Oscillator
1 6AC7	Vertical Amplifier
1 6SN7	Vertical Amplifier and Cathode Follower
1 6X5	Low Voltage Rectifier
1 5Y3	High Voltage Rectifier
1 5UP1	Cathode Ray Tube
1 12AT7	Vertical Amplifier
- Size: 8½" wide x 18½" deep x 18" high  
Weight: Approximately 25 lbs.



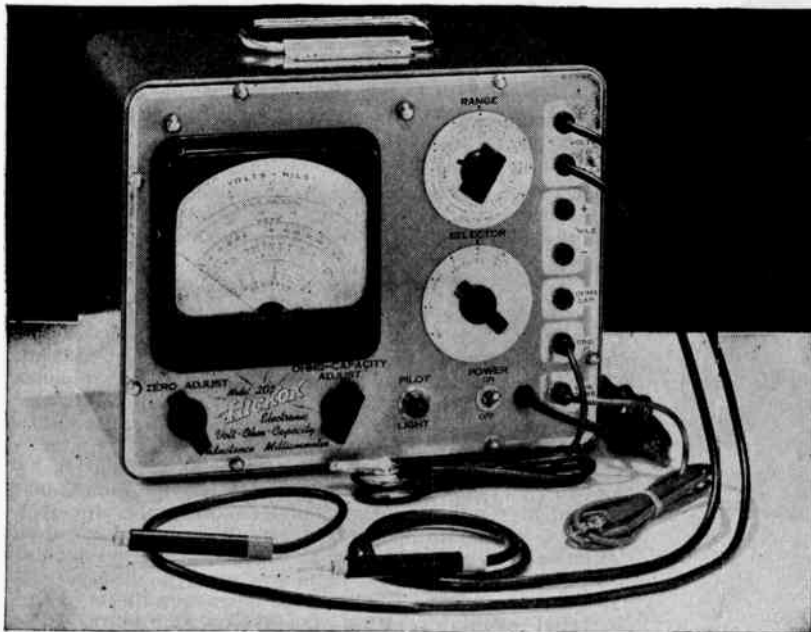
Model 195-B

**Net Price: \$159.60**

**HICKOK**

# TEST EQUIPMENT

## ELECTRONIC VOLT-OHM-CAPACITY MILLIAMMETER Model 203



Model 203

A universal test instrument for all radio and electronic service work. Accurately and easily measures wide ranges of inductances, capacitances, resistances, currents and voltages, both A.C. and D.C.

**Net Price**  
**\$93.30**

Model PR-203 — Same as above except with A.C. probe as shown below on Model 209-A.

Net Price: \$103.90

High input impedance prevents loading when making voltage tests. Measurement of inductances are possible with the use of a conversion chart supplied in the instruction book. Damage due to overload is

impossible in all except current measurements. Regulated power supply incorporated permits normal operation and accuracy with wide line voltage fluctuation.

### SPECIFICATIONS

Dimensions—9" x 11½" x 7"  
Net Weight—13 lbs.—Ship. 20 lbs.  
Meter—Model S44A  
Satin-chrome finish panel  
Blue baked Hammertex finished case

POWER SUPPLY: 105-125 V, 50-70 cycles. Ranges: Volts, A-C and D-C 0-3, 12, 30, 120, 300, 1200. Mils (D-C): 0-3, 12, 30, 120, 300, 1200. Cap.: 0-10,000 mmf in 2 ranges, 0-1000 mf in 5 ranges. Ind.: 50 mh-100 henries. Ohms: 0.1 ohm to 10,000 megohms in 7 ranges. Frequency: A-C up to approximately 5 megacycles may be measured. Input Impedance: Volts D-C: 15 megohms, Volt A-C: 12 megohms. Tube Complement: 6X5GT A-C rectifiers, 6SJ7 cathode follower, 6SN7GT vacuum tube voltmeter, OD3/VR150 voltage regulator.

## NEW ELECTRONIC VOLT-OHM-CAPACITY MILLIAMMETER

### LARGE LABORATORY SIZE GIANT 9-INCH METER — MODEL 209-A

This new giant size instrument matches the size and attractiveness of the Hickok complete line of test equipment. Large 9-inch meter improves ease of operation. Has all the technical characteristics of the Model 203 above, and in addition has a 1200 Volt A.C. scale, and a new Peak-to-Peak Voltmeter to measure peak to peak or RMS values of A.C.

The new Zero-Center scale on D.C. permits much faster alignment than other similar instruments. Low capacity high frequency A.C. probe has flat frequency response to over 300 megacycles.

### SPECIFICATIONS

Dimensions—14" x 16½" x 8"  
Meter—Hickok Model S-22  
Weight—18 lbs. Net.—25 lbs. Ship.  
Blue baked Hammertex finish

**Net Price: \$124.90**

Including A.C. probe and all leads.



**100 TIMES MULTIPLIER PROBE FOR D.C. AVAILABLE FOR EITHER VACUUM TUBE VOLTMETER AT \$11.20**

**HICKOK**

# TEST EQUIPMENT

## VOLT OHM MILLIAMMETER Model 435-A



Model 435-A

**Net Price: \$39.15**

The Model 435 is built to the highest Hickok standards of engineering design, workmanship and material. The meters used in these Volt-Ohm-Milliammeters are especially built by Hickok for this service. The movement is large and rugged and the very high torque weight ratio gives lively, instantaneous pointer action. The movement is curve-corrected by an exclusive Hickok process which gives a higher accuracy at all points on the scale.

### SPECIAL FEATURES

20,000 ohms per volt sensitivity on D.C.

A-c power is not required for operation—especially convenient in many areas. Microampere, milliampere and ampere measurements provide an extremely wide range in current measurements. A.C. voltage output with D.C. components may be measured. Decibel power output measurements from -20 to +29 db may be made. Wide ranges in A.C. and D.C. voltage and resistance values may be measured.

### SPECIFICATIONS

Dimensions—6" x 8¼" x 4"

Net Weight—3½ lbs.—Ship. 10 lbs.

Meter—Model S48

Satin-chrome finished panel

Blue backed crackle lacquer finished case

Ranges—AC Volts and DC Volts: 0-2.5, 10, 50, 250, 1000, 5000; Ohms 0-10 megohms (4 ranges); Microamperes: 0-50; Milliamperes: 0-2.5, 10, 50, 250, 1000; Amperes: 0-10; Decibels: -20 - +3, -8 - +15, +6 - +29; Output Volts: 0-2.5, 10, 50, 250, 1000, 5000. Sensitivity: A.C. Volts: 5000 ohms/volt; D.C. Volts: 20,000 ohms/volt; Meter: 40 microamperes. Battery Complement: 1 Dry Battery, Radio C, 4.5 volts.

## VOLT-AMPERE WATTMETER

### Model 900-B

Electrical Appliance Tester and Circuit Analyzer.  
True to the Finest Hickok Tradition

For Measuring Actual Values of Volts, Amperes and Watts.  
Ranges: A.C. Watts: 0-20-100-500-1000-2000. A.C. Amperes: 0-1.3-6.5-13-26. A.C. Volts: 0-130-260. A.C. Milliamperes: 0-260.

Scale is 3¾" long, clear and legible. The Model 900-B Volt-Amp-Wattmeter has been designed for all A.C. appliance-testing, from bell transformers and clocks to electric ranges operating on the 220-volt three-wire Edison system. The extremely low range of 0-20 watts will measure the power consumed by the smallest of appliances and is protected from accidental overload by a fuse. For measuring electric ranges the Number 9A and 9B special leads are available with standard three-wire range connectors. It tests appliances while in actual operation, indicating wattage consumption, amperes, and line voltage.

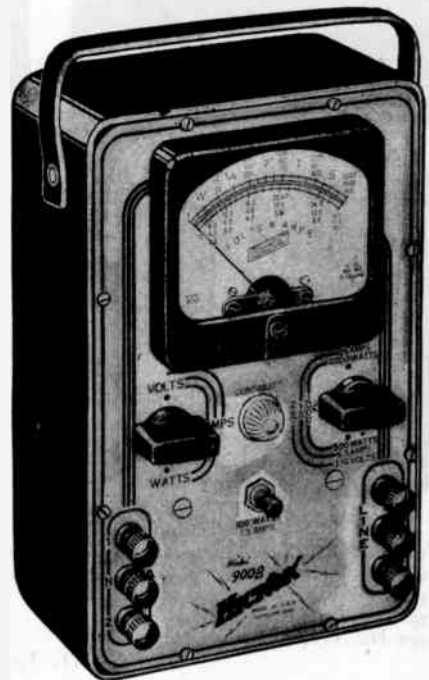
Mounted in a durable welded steel case with strap handle and rubber bumpers. Detachable leads, for small appliances, are furnished. Test leads with prods also included.

Service men will find a wattmeter especially handy for checking all A.C. sets.

Part No. C-105—This external current transformer is designed to give ranges of 5,000 and 10,000 watts and 65 and 130 amperes when used with Model 900-B. Part No. C-105 transformer may be installed in lead compartment of carrying case. When transformer and carrying case are ordered together, transformer will be installed before shipping.

Model 900-B—Size: 9½" high, 6¼" wide, 3" deep.

Shipping Weight: 8½ lbs.—Net 6½ lbs.

**Net Price: \$61.65**

Model 900-B

# **FREED**

## *Precision* **LABORATORY TEST EQUIPMENT**



1



2



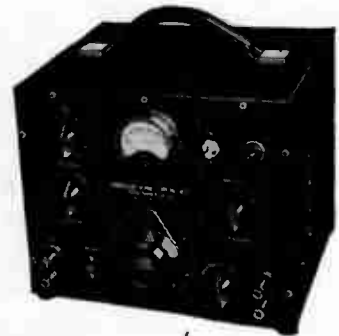
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11

- |  |   |
|--|---|
| 1. Type No. 1030 Low Frequency "Q" Indicator   | 6. Type No. 1010 Comparison and Limit Bridge                      |
| 2. Type No. 1110 Incremental Inductance Bridge | 7. Type No. 1160 Inductor Decade 10x1 Hy 10x.1 Hy 10x.01 Hy       |
| 3. Type No. 1020 Megohmmeter                   | 8. Type No. 1161 Inductor Decade 10x.1 Hy 10x.01 Hy 10x.001 Hy    |
| 4. Type No. 1060 Vacuum Tube Voltmeter         | 9. Type No. 1162 Inductor Decade 10x.01 Hy 10x.001 Hy 10x.0001 Hy |
| 5. Type No. 1140 Null Detector                 | 10. Type No. 1164 Inductor Decade 10x10 Hy 10x1 Hy 10x.1 Hy       |
|  | 11. Type No. 1040 Vacuum Tube Voltmeter                           |

**FREED TRANSFORMER CO., Inc.—INSTRUMENTS DIVISION**

# Chicago

## INSTRUMENTS

**DEPENDABLE — ACCURATE  
RADIO, ELECTRICAL AND  
INDUSTRIAL TEST EQUIPMENT**



MODEL 458A

### PORTABLE BENCH-TYPE VOLT-OHM-MILLIAMMETER

**Multiplex Model 458. Volt-Ohm-Milliammeter. 1000 Ohms per volt. Net \$21.00**  
 Volts DC: 0-5/10/50/100/500/2000 Ohms Full Scale: 1000/200,000/2,000,000  
 Volts AC: 0-12.5/25/125/250/1250 Ohms Center Scale: 50/2250/22,500  
 Milliamperes DC: 0-1/10/100/ Output: —5 to +55 Decibels  
 Milliamperes AC: 0-2.5/25/250 Size: 10 1/8" x 6 3/4" x 5 1/2"

**Multiplex Model 458A. Volt-Ohm-Mills-Ammeter. Net \$26.00**

Modernized brown hammerloid finished case with flexible leather strap handle, featuring broader coverage.

Volts AC-DC: 0-2.5/10/50/250/1000/5000 Amperes AC: 0-0.5/1/5/10  
 Milliamperes AC-DC: 0-1/10/100 Amperes DC: 0-1/10  
 Ohms ranges same as Model 458.

### PORTAPLEX PORTABLE INSTRUMENTS

**Model 431A AC-DC Volt-Ohm-Mills-Ammeter. Net \$16.60**

Volts AC-DC: 0-15/30/150/300/1500/3000 Amperes DC: 0-7.5  
 (1000 Ohms per volt) Ohms Full Scale: 0-10,000/100,000/1 meg.  
 Ohms Center Scale: 60/600/6000  
 Milliamperes DC: 0-1.5/150 Size: 6 1/8" x 3 1/4" x 2 3/4"

**Model 421D AC-DC Volt-Ohm-Milliammeter. Net \$20.00**

Volts AC-DC: 0-4/10/40/100/400/1000 Ohms Full Scale: 0-10,000/100,000/1 meg.  
 (5000 Ohms per volt) Ohms Center Scale: 60/600/6000  
 Milliamperes DC: 0-4/40/100/400 Size: 6 1/8" x 3 1/4" x 3 1/4"

**Model 433 Super High Sensitivity Volt-Ohmmeter. 20,000 Ohms per volt. Net \$20.00**

Volts DC: 0-3/30/300/600 Ohms Center Scale: 70/700/7000/70,000  
 Ohms Full Scale: 5000/50,000/500,000/5,000,000 Size: 5 7/16" x 3 9/16" x 3"

### FEATHERWEIGHT MINIATURE MODELS

(All models 3 15/16" x 2 7/8" x 2")

**Model 450 Volt-Ohm-Milliammeter. 1000 Ohms per volt. Net \$10.00**

Volts DC: 0-5/10/50/500/1000 Ohms Full Scale: 5000/50,000/500,000  
 Milliamperes: 0-1 Ohms Center Scale: 30/300/3000

**Model 451A AC-DC Volt-Ohmmeter with Output Ranges. Net \$14.00**

Volts DC: 0-10/50/100/500/1000 (1000 Ohms per volt) Ohms Full Scale: 500,000  
 Volts AC and Output: 0-10/50/100/500/1000 Ohms Center Scale: 7200

**Model 451B Same as Model 451A but with 2500 Ohms per volt. Net \$15.00**

**Model 452 High Sensitivity Volt-Ohmmeter. 10,000 Ohms per volt. Net \$14.00**

Volts DC: 0-10/50/100/500/1000 Ohms Center Scale: 30/300/3000/30,000  
 Ohms Full Scale: 2000/20,000/200,000/2,000,000

**Model 453 Volt-Ohm-Milliammeter. 1000 Ohms per volt. Net \$14.00**

Volts DC: 0-15/30/150/300/1500/3000 Milliamperes DC: 0-150  
 Volts AC: 0-15/30/150/300/1500/3000 Ohms Full Scale: 5000/50,000/500,000



MODEL 451A

### SIMPLEX VOLT-OHM-MILLIAMMETERS

**Model 371 Volt-Ohm-Milliammeter. Iron Vane Type. Net \$5.25**

Volts DC: 0-3/15/30/300 Ohms Full Scale: 10,000  
 Milliamperes: 0-25 Size: 1 7/8" x 2 3/4" x 3 3/8"

**Model 312 AC-DC Volt-Ohm-Milliammeter. Repulsion Type Movement. Net \$6.75**

Volts AC and DC: 0-25/50/125/250 Ohms Center Scale: 2400  
 Milliamperes AC and DC: 0-50 MFD: .05 to 15.  
 Ohms Full Scale: 100,000 Size: 1 7/8" x 2 3/4" x 3 3/8"

### POLARIZED TEST LEADS FOR ALL CHICAGO INSTRUMENTS

No. 1048 Low Resistance Test Leads, 48" Long. Tenite insulated prods. Net \$0.66

### DRY BATTERY TESTER

**Model 471 Dry Battery Tester. Net \$16.00**

Tests 1 1/2 volt — 10 volt and 10 volt — 150 volt batteries under specified load. Easy reading. 5 1/2" rectangular meter makes battery sales easy.



BATTERY TESTER  
MODEL 471

**CHICAGO INDUSTRIAL INSTRUMENT CO.**

# Shurite PANEL METERS



Model 550-AC



Model 650-AC



Model 950-DC (or AC)



Model 550-DC  
with Zero Adjuster

Shurite panel meters are attractive, rugged, dependable instruments with accuracy well within 5%. All models have metal cases, telephone-black finish; all require 2 3/8" hole. DC meters are polarized-vane solenoid type, AC meters are double vane repulsion type. All are guaranteed.

● **Guarantee:** All Shurite meters are guaranteed to users against defective workmanship and material, and will be repaired or replaced if sent to the factory postpaid with 40c handling charge within one year after date of purchase.

● **All-metal Dials**—age and moisture resistant, lithographed in black on white for high visibility.

● **Improved Design**—with new coil frames and attached insulators for greater rigidity, yet interchangeable in other respects with similar type of instrument formerly available.

● **Improved appearance**—with concealed coils, full view scales, and attractive styling and finish.

**TYPICAL USES:** Shurite products, with their rugged design, and ability to duplicate readings, enjoy wide acceptance in the electronic and electrical fields. Applications include transmitters, receivers, TV antenna rotator controls, battery indicators, appliances, power sources, battery eliminators, electric fence controllers, and the very popular basic meters in radio test kits.

Shurite products are also specified for battery voltage indicators on emergency lighting, burglary and fire alarm systems, output meters on rectifiers (copper oxide, tungar or selenium types), rate-of-charge indicators, testers for hearing aid and batteries and their chargers, ammeters for plating sets, and polarity indicators for metals analysis.

Other uses range from automotive test equipment to pin-ball circuit testers, and well depth indicators. Shurite has long been the favorite brand for those who take their hobbies and experiments seriously.

## DC MILLIAMMETERS

RANGE	RESIST.	MODEL 550*		MODEL 650*		MODEL 950	
Ma.	Approx. Ohms	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
0-3L**	500	5314	\$2.75	6314	\$2.85	9314	\$2.90
0-3	4800	5301	2.15	6301	2.25	9301	2.30
0-5	2000	5302	1.95	6302	2.05	9302	2.10
0-10	840	5303	1.85	6303	1.95	9303	2.00
0-15	380	5304	1.50	6304	1.60	9304	1.65
0-35	87	5305	1.45	6305	1.55	9305	1.60
0-50	24	5306	1.45	6306	1.55	9306	1.60
0-100	6	5307	1.45	6307	1.55	9307	1.60
0-150	4.2	5308	1.45	6308	1.55	9308	1.60
0-200	2.6	5309	1.45	6309	1.55	9309	1.60
0-300	0.9	5310	1.45	6310	1.55	9310	1.60
0-400	.58	5311	1.40	6311	1.50	9311	1.55
0-500	.37	5312	1.40	6312	1.50	9312	1.55

\*\* Low internal resistance, sensitive type. Moving magnet construction, patent pending. Scale arc, 75°.  
\* For zero adjusters add 30¢ to price and Z to stock number.  
No zero adjuster on Model 950.

## AC MILLIAMMETERS

RANGE	RESIST.	MODEL 550		MODEL 650		MODEL 950	
Ma.	Ohms Approx.	No. Stock	Each Net	No. Stock	Each Net	No. Stock	Each Net
0-10	4800	5607	\$2.80	6607	\$2.90	9607	\$2.95
0-25	750	5601	2.50	6601	2.60	9601	2.65
0-50	150	5602	2.50	6602	2.60	9602	2.65
0-100	37	5603	2.50	6603	2.60	9603	2.65
0-250	5.4	5604	2.50	6604	2.60	9604	2.65
0-500	1.34	5605	2.50	6605	2.60	9605	2.65

## DC AMMETERS

RANGE	RESIST.	MODEL 550*		MODEL 650*		MODEL 950	
Amps.	Approx. Ohms	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
0-1	.15	5201	\$1.45	6201	\$1.55	9201	\$1.60
0-3	.037	5202	1.45	6202	1.55	9202	1.60
0-5	.02	5203	1.45	6203	1.55	9203	1.60
0-8	<.02	5204	1.45	6204	1.55	9204	1.60
0-10	<.02	5205	1.45	6205	1.55	9205	1.60
0-15	<.02	5206	1.55	6206	1.65	9206	1.70
0-25	<.02	5207	1.85	6207	1.95	9207	2.00
0-50	<.02	5208	2.15	6208	2.25	9208	2.30
1-0-1	.13	5209	1.55	6209	1.65	9209	1.70
3-0-3	.02	5210	1.55	6210	1.65	9210	1.70
5-0-5	.022	5211	1.55	6211	1.65	9211	1.70
6-0-6	.02	5212	1.55	6212	1.65	9212	1.70
10-0-10	<.02	5213	1.70	6213	1.80	9213	1.85
30-0-20	<.02	5214	1.75	6214	1.85	9214	1.90
30-0-30	<.02	5215	1.85	6215	1.95	9215	2.00
50-0-30	<.02	5216	2.00	6216	2.10	9216	2.15

\* For zero adjuster, add 30¢ to price and Z to stock number.  
No zero adjuster on Model 950.

## AC AMMETERS

RANGE	RESIST.	MODEL 550		MODEL 650		MODEL 950	
Amps.	Approx. Ohms	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
0-1	.42	5501	\$2.50	6501	\$2.60	9501	\$2.65
0-3	.072	5502	2.50	6502	2.60	9502	2.65
0-5	.041	5503	2.50	6503	2.60	9503	2.65
0-10	.02	5504	2.50	6504	2.60	9504	2.65
0-30	<.02	5505	2.80	6505	2.90	9505	2.95
0-50	<.02	5506	3.00	6506	3.10	9506	3.15

## DC VOLTMETERS

RANGE	RESIST.	MODEL 550*		MODEL 650*		MODEL 950	
Volts	Approx. Ohms	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
0-1	17	5101	\$1.40	6101	\$1.50	9101	\$1.55
0-3	135	5102	1.45	6102	1.55	9102	1.60
3-0-3	265	5103	1.45	6103	1.55	9103	1.60
0-5	395	5104	1.45	6104	1.55	9104	1.60
0-6	570	5105	1.45	6105	1.55	9105	1.60
0.8	890	5106	1.45	6106	1.55	9106	1.60
0-10	1350	5107	1.50	6107	1.60	9107	1.65
0-15	3500	5108	1.60	6108	1.70	9108	1.75
0-20	5000	5121	1.65	6121	1.75	9121	1.80
0-25	1287	5109	1.60	6109	1.70	9109	1.75
0-25H**	7500	5110	2.30	6110	2.40	9110	2.40
0-50	2587	5122	1.75	6122	1.85	9122	1.90
0-50H**	15M	5111	2.45	6111	2.55	9111	2.60
0-75	4287	5112	1.80	6112	1.90	9112	1.95
0-100	5887	5113	1.90	6113	2.00	9113	2.05
0-100H**	30M	5114	2.60	6114	2.70	9114	2.75
0-150	7787	5115	2.00	6115	2.10	9115	2.15
0-150H**	45M	5116	2.70	6116	2.80	9116	2.85
0-300H***	75M	5117	2.95	6117	3.05	9117	3.10
0-500H***	125M	5118	3.90	6118	4.00	9118	4.05
0-750H***	185M	5119	4.65	6119	4.75	9119	4.80
0-8-160	†	5120	2.40	6120	2.50	9120	2.55

\* For zero adjuster, add 30¢ to price and Z to stock number. No zero adj. on No. 950.

\*\* H denotes high resistance.

† Supplied with external resistors.

‡ Approx. resistance 840 ohms at 8 volts; 17,340 ohms at 160 volts.

## AC VOLTMETERS

RANGE	RESIST.	MODEL 550		MODEL 650		MODEL 950	
Volts	Approx. Ohms/Volts	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
0-4	11	5401	\$2.50	6401	\$2.60	9401	\$2.65
0-6	15.8	5402	2.50	6402	2.60	9402	2.65
0-10	27	5403	2.50	6403	2.60	9403	2.65
0-15	33.3	5404	2.50	6404	2.60	9404	2.65
0-50	96	5405	3.00	6405	3.10	9405	3.15
0-150	135	5406	3.25	6406	3.35	9406	3.40
0-300*	100	5407	3.65	6407	3.75	9407	3.80
0-600*	100	5408	4.85	6408	4.75	9408	4.80
0-750*	100	5409	5.25	6409	5.35	9409	5.40

\* Supplied with external resistors.

## RESISTANCE METERS

RANGE	MODEL 550		MODEL 650		MODEL 950		
Ohms	Volts	Stock No.	Net Each	Stock No.	Net Each	Stock No.	Net Each
10,000	4.5*	5701	\$2.00	6701	\$2.10	9701	\$2.15

\* Requires 3 flashlight cells for resistance readings but does not require resistor for voltage readings.

## POCKET TYPE METERS

A series of Shurite pocket meters using the Model 450 case is in production. Model 450 has nickel plated case, with two or three terminals, depending on ranges. Ranges suitable for pre-war and post-war batteries, portable radio batteries and many other electrical applications, including polarity indication types have been made, although they are not regularly stocked.



Model 450

For ordering, use stock number regularly listed, changing the first digit to 4. For example, a 0-3 DC ammeter as illustrated becomes Stock No. 4202 as a pocket meter.

To arrive at price, add \$0.40 to catalog price of Model 550 meters sold at \$1.70 or less; add \$0.30 for meters sold at \$1.75 and above. For details, request Bulletin "Shurite Pocket Types."

(PRICES SHOWN ARE U.S.A. NET FOR INDIVIDUALLY BOXED METERS)

# SHURITE METERS

NEW HAVEN 8, CONNECTICUT

## FLANGE ADAPTER RING

A sturdy flange ring for use with any Model 550 (round) Shurite meter where a flange mount is preferred. Makes appearance similar to Model 650. Wide flange, 2 3/4" dia. Telephone black finish. Screws, lockwashers and nuts included.

Model 5-A, Net.....\$0.18

## MOUNTING DETAILS

All Shurite Panel Meters have flush cases and require 2 3/8" hole. Most standard ranges have 6-32 studs, and are mounted as follows:

Model 550 DC has long "U" clamp, with overall width of 2 3/8". Depth of case, from front of panel to end of stud, 1 1/8".

Model 550 AC has ring clamp. Depth of case from front of panel to end of stud, 1 1/8".

Model 650 DC has three mounting holes in wide, round flange 2 3/8" dia. 4-36 x 1/8" screws with washers and nuts are supplied. Depth under flange, to end of stud, 1 3/8".

Model 650 AC, same as Model 650 DC, except depth under flange to end of stud is 1 1/8".

Model 950 DC has two mounting holes in rectangular flange 2 5/8" x 2 1/8". 4-36 x 1/8" screws with washers and nuts are supplied. Depth under flange to end of stud, 7/8".

Model 950 AC, same as Model 950 DC, except depth under flange to end of stud is 1 1/8".

## IMPORTANT—HOW TO ORDER

For all standard models, give: (1) Model Number, (2) Range, (3) Stock Number. If Model number and stock number are not stated, Model 550 will be supplied.

## ZERO ADJUSTERS (Z)

Zero Adjusters are available only on Models 550-DC and 650-DC. No zero adjuster on Model 950. When ordering, add Z to stock number. Example: Stock number for Model 550-DC voltmeter, 0-1 volt range—without zero adjuster is 5101. With zero adjuster, it is 5101-Z.

## PANEL CALIBRATION (S)

Meters are calibrated for non-magnetic panels. If for magnetic (steel) panel mounting, specify thickness and overall size of panel, and add -S to stock number when ordering, as 5101-S. If thickness of panel is not specified, meter will be supplied for .040 panel.

## SEE YOUR DISTRIBUTOR

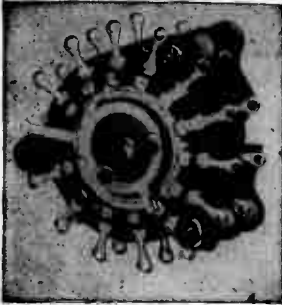
Besides stocking the most wanted types and being able to obtain your other requirements on short notice, your authorized Shurite distributor of electronic parts is qualified to help you find the right meter for your need.



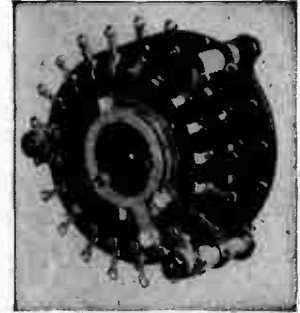
## INSTRUMENT AND TESTER SWITCHES (LAMINATED)

### Rotary Selector — Single and Multi-Gang — Non-Shorting and Shorting\*

The switch that's IN LAST PLACE on the trouble-shooter's check list . . . AND PROUD OF IT!



SS-14-2



SS-20-2

**J-B-T Instrument Type Rotary Selector Switches** were designed and developed to meet the need for trouble-free, dependable performance in hard service. These superior switches are used extensively in high quality test equipment, portable instruments, inspection setups and experimental circuits. Available in two basic types—14 and 20 position—the design gives extra contacts in minimum space. One to six decks.

**FEATURES:**

**Reliability**—Rigid, 3-post deck suspension, instead of the usual 2; all parts heavily coin silver plated to meet 200 hour salt spray test; ball bearing action, beryllium-copper spring (phosphor bronze on SS-20), and special design detent wheel assure positive indexing. Laminated plastic decks and rotors selected for maximum mechanical and dielectric strength.

**Exceptional Compactness**—14-position switch takes 13 circuits and "off" in 2" circle; 20-position switch handles 19 circuits and "off" in 2-23/32" circle. Additional decks require only 5/16" spacing per section.

**Low Contact Loss**—Double-grip collector arms, and large-area contacts, silver to silver, result in an average contact resistance of .007 ohms or less during the useful life of the switch.

**Ample Dielectric**—Normal make-and-break with resistance load, 25 Ma. at 300 volts AC or DC; normal carrying capacity (not

make-and-break), 1 amp.; maximum momentary capacity (not make-and-break), 5 amp.; maximum voltage between contacts and ground, 1000 volts R.M.S.; between decks and ground, 2000 volts R.M.S.

\* Standard items, but not regularly stocked; check with your distributor.

**BASIC 14-POSITION:** Knob supplied only on individually packed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, unless otherwise specified. Contact lugs and common lugs positioned as shown, 13 contacts per deck. One to six decks; for each additional deck (or gang) add 5/16" to depth. Continuous rotation type supplied unless otherwise specified. Adjustable Stop supplied when requested. Panel locator positioned as shown unless otherwise specified on bulk orders.

**BASIC 20-POSITION:** Knob supplied only on individually packed units—not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, unless otherwise specified. Contact lugs and common lug positioned as shown, 19 contacts per deck, continuous rotation types. One to six decks; for each additional deck, add 5/16" to depth. Continuous rotation type supplied unless otherwise specified. Panel locator positioned as shown unless otherwise specified on bulk orders.

### LAMINATED SWITCHES, SS-14 TYPE

(14 positions; angular indexing 25° 43')

Model	Positions Per Circuit	Circuits Per Deck	Decks or Gangs	Shorting, Non-Shorting	Net Price, Individually Boxed, Including Knob
SS-14-1	14	1	1	N-S	\$1.35
SS-14-1A*	5†	2	1	N-S	1.40
SS-14-1S*	14	1	1	S	1.35
SS-14-1CS‡	14	1	1	CS	1.70
SS-14-2	14	1	2	N-S	1.65
SS-14-2A*	5†	2	2	N-S	1.75
SS-14-2S	14	1	2	S	1.65
SS-14-2CS‡	14	1	2	CS	2.30
SS-14-3	14	1	3	N-S	2.05
SS-14-3S*	14	1	3	S	2.05
SS-14-4	14	1	4	N-S	2.65
SS-14-6	14	1	6	N-S	3.85

\*Standard items, but not regularly stocked; check with your distributor.

†Denotes correction in former catalogs; 5 positions include 4 "live" and 1 "off".

‡Complete shorting — all contacts shorted except one in use.

### ETCHED DIAL PLATES

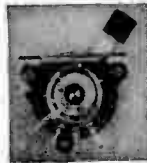
For SS-14 or MS-14 Series; and for SS-20 or MS-20 Series. Dull black finish—with raised bright metal numerals.

- EP-13 off thru 13 \_\_\_\_\_ \$0.19
- EP-14 1 thru 14 \_\_\_\_\_ \$0.19
- EP-19 off thru 19 \_\_\_\_\_ \$0.19
- EP-20 1 thru 20 \_\_\_\_\_ \$0.19



### LEVER ACTION SWITCHES

Designed for test equipment and communications systems, these new, positive indexing switches use the same high quality parts as the SS-14 Series, above. Boxed with one knob, two bolts and nuts. Mounts singly or in groups, with 3/8" between centers. Brackets have mounting holes 1 1/8" apart.



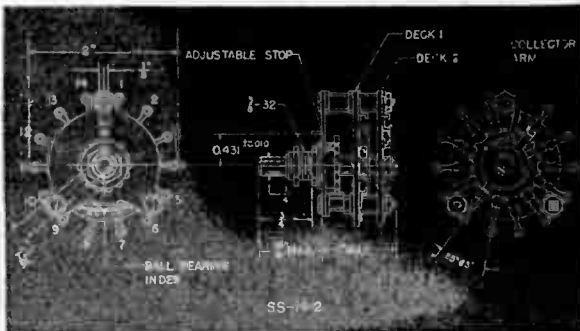
### LAMINATED SWITCHES, SS-20 TYPE

(20-positions; angular indexing, 18°)

SS-20-1	20	1	1	N-S	\$1.75
SS-20-1A*	6‡	2	1	N-S	1.80
SS-20-1S*	20	1	1	S	1.75
SS-20-2	20	1	2	N-S	2.20
SS-20-2S*	20	1	2	S	2.20
SS-20-3	20	1	3	N-S	2.95
SS-20-4	20	1	4	N-S	3.60
SS-20-6	20	1	6	N-S	5.10

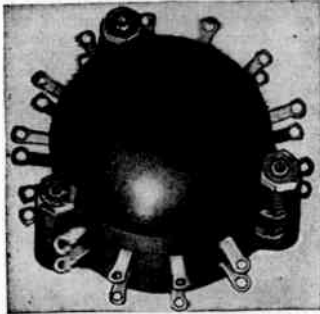
\*Standard items, but not regularly stocked; check with your distributor.

‡Denotes correction in former catalogs; 6 positions include 5 "live" and 1 "off".



# NEW-BUT PROVED-MOLDED ROTARY SELECTOR SWITCHES

Fully Enclosed — Single and Multi-Gang — Shorting and Non-Shorting

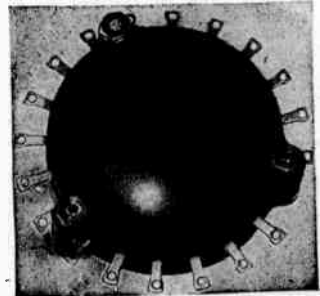


MS-14-5

- All moving contacts enclosed — minimizes dirt and corrosion.
- Contact lugs permanently integrated into switch assembly.
- Sturdy construction with 3-post deck suspension, double grip collector arms, and rectangular drive shaft through decks for precision indexing.
- Interchangeable, electrically and mechanically, with J-B-T 14- and 20-position laminated switches, widely used by industry and Armed Services.

**FEATURES:**

For description of rigid 3-post construction; heavy coin silver plating to meet 200-hour salt-spray test; exceptional compactness; .007 ohm average contact resistance; current-carrying capacity and voltage breakdown, see adjoining page on SS-14 and SS-20 laminated switches. Besides fully enclosing all the moving contact parts, the molded switches differ from the laminated construction in the design of the detent mechanism, but both types provide the positive indexing which quickly identifies the superior quality of J-B-T switches.



MS-20-1

**BASIC 14-POSITION MOLDED (MS-14):** 13 circuits and "off" per deck in 2" circle for compactness. Molded end cover regularly supplied on MS-14 series. Knob included with individually boxed units — not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, so that knob pointer points to live contact. Common or "off" contact lug is bent down for ready identification. Internal construction: double-grip collector arms hold contact lug on upper and lower surfaces; collector ring is self-wiping. One to six decks add 1/8" per deck (or gang) to depth; for five decks and above, add 1/2" to depth for double indexing mechanism; add 3/8" to depth for adjustable stop mechanism. Continuous rotation type supplied unless adjustable stop (type MAS) is ordered or, on quantity orders, pre-set fixed stops are specified. Panel locator is available on quantity orders when specified; on MS-14-4 and MS-14-6, extra hex nut and longer screw are supplied for inverting supporting screw nearest common, thus converting into panel locator.

**BASIC 20-POSITION MOLDED (MS-20):** 19 circuits and "off" per deck in 2 3/8" circle for compactness. Molded end cover regularly supplied. Knob included with individually boxed units — not on bulk orders unless specified. Collector arm placed directly opposite to flat of shaft, so that knob pointer points to live contact. Common or "off" contact lug is bent down for ready identification. Internal construction: double-grip collector arms and self-wiping collector ring are standard construction. One to six decks; add 1/8" per deck (or gang) to depth. Continuous rotation type supplied; on quantity orders, pre-set fixed stops are available. Panel locator available on quantity orders when specified; on MS-20-4 and MS-20-6, extra hex nut and longer screw are supplied for inverting supporting screw nearest common, thus converting into panel locator.

**MOLDED SWITCHES, MS-20 TYPE**

(20 positions; angular indexing 18°)

Continuous rotation, no stops

Model	Positions Per Circuit	Circuits Per Deck	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Net Price, Individually Boxed Including Knob
MS-20-1	20	1	1	N-S	1 1/8"	\$1.75
MS-20-1S	20	1	1	S	1 1/8"	1.75
MS-20-2	20	1	2	N-S	1 1/2"	2.20
MS-20-2S	20	1	2	S	1 1/2"	2.20
MS-20-3	20	1	3	N-S	1 7/8"	2.95
MS-20-4	20	1	4	N-S	1 3/4"	3.60
MS-20-6	20	1	6	N-S	2 3/8"	5.10

**ADJUSTABLE STOP MOLDED SWITCHES, MAS-14 TYPE**

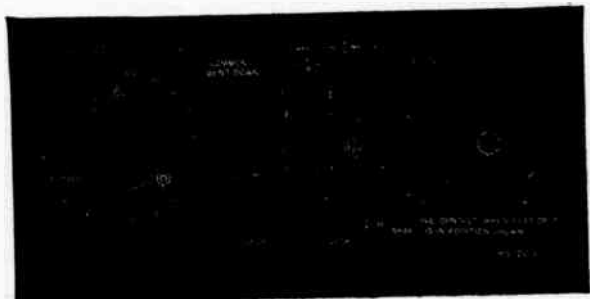
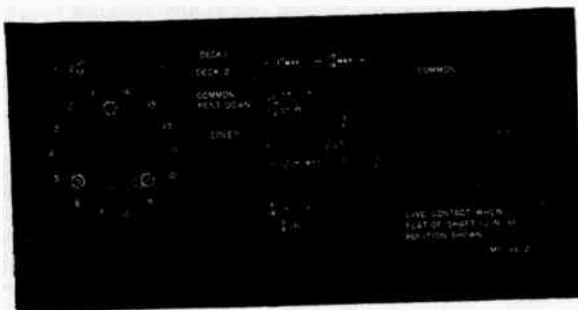
(14 positions; angular indexing 25° 43')

**IMPORTANT:** Enclosed adjustable stop mechanism located on panel side of switch will increase over-all switch length 1/4".

**MOLDED SWITCHES, MS-14 TYPE**  
(14 positions; angular indexing 25° 43')  
Continuous rotation, no stops

Model	Positions Per Circuit	Circuits Per Deck	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Net Price, Individually Boxed Including Knob
MS-14-1	14	1	1	N-S	1 1/8"	\$1.35
MS-14-1S	14	1	1	S	1 1/8"	1.35
MS-14-2	14	1	1	N-S	1 1/8"	1.65
MS-14-2S	14	1	2	S	1 1/8"	1.65
MS-14-3	14	1	2	N-S	1 1/8"	2.05
MS-14-4	14	1	3	N-S	1 3/8"	2.65
MS-14-4	14	1	4	N-S	1 3/4"	2.65
MS-14-6	14	1	6	N-S	2 7/8"	4.95

Model	Positions Per Circuit	Circuits Per Deck	Decks or Gangs	Shorting or Non-Shorting	Depth Behind Panel	Net Price, Individually Boxed Including Knob
MAS-14-1	14	1	1	N-S	1 1/8"	\$1.75
MAS-14-1S	14	1	1	S	1 1/8"	1.75
MAS-14-2	14	1	2	N-S	1 1/2"	2.05
MAS-14-2S	14	1	2	S	1 1/2"	2.05
MAS-14-3	14	1	3	N-S	1 3/4"	2.45
MAS-14-4	14	1	4	N-S	1 3/4"	3.05
MAS-14-6	14	1	6	N-S	3 1/8"	5.95



## APPLIANCE TEMPERATURE TESTERS

**A NEW IDEA IN TESTERS** — The need for scientific but sturdy portable test equipment in the appliance service field is met by this exclusive line. Here the user profits from J-B-T's wide experience in building field test sets for many well-known manufacturers of ranges, irons, refrigerators, deep freeze units, and similar equipment. All J-B-T testers include the principle of remote reading of temperature, —and temperature measures the real usefulness of the appliance.

### IRON TESTER



**MODEL 32-JIT.** Self-contained bench type tester; checks all makes of irons; measures thermostat temperatures; and shows open or short circuits. Automatically compensated for room temperature. Also indicates operating temperature of the sole plate (working surface) on non-electric or cordless irons. Black metal case; overall size 10" x 12" x 5 1/2", scale 0—650°F, 15 amp. fuse, 6' cord, 110-volt, 50-60 cycles. **\$28.75**

**MODEL 32-JP-4.** Checks oven temperature of gas and electric ranges and other appliances. Ideal for testing and setting thermostats. Has binding posts for quick attachment of thermocouples listed below to check irons, toasters, waffle-bakers, roasters, clothes dryers, etc. Exceptionally fast, continuous response; automatically compensates for ambient temperature. For full details see Bulletin JP-104. Range 0—650°F; black leatherette case 6" x 3 7/8" x 3 3/4". Complete with SA-116 5 1/2' calibrated thermocouple, clip for attaching to grill, and convection shield for steady readings. **\$23.75**



**MODEL 32-JP-3.** A very popular oven tester with all the features of Model 32-JP-4 except that no carrying strap is included, and the thermocouple supplied is attached permanently instead of to binding posts. This model is extensively used for

service work, sales demonstrations and inspection. Range 0-650° Fahrenheit; 10° divisions readable to 2 1/2°; automatically compensated for ambient temperature. For more details, see Bulletin JP-103. Complete with attached SA-116 5 1/2' calibrated thermocouple, clip and shield. **\$22.75**



### ALL-PURPOSE TESTER

**Model 61-JRT.** This 9-in-1 tester speeds accurate temperature adjustment and current analysis of ranges, refrigerators, etc. Rapidly reads four cold zones, —100° F. to +80° F. up to 14' distant; two heat zones 0-600° F. up to 5 1/2' distant; one voltage range 0-300 AC; and with transformer, two current ranges, 0-30 and 0-60 amps, AC. Sturdy, polished walnut case 15 1/2" x 10 1/2" x 4 3/4" with handle and slip hinges. Two-color etched metal panel. Separate switches protect bulb and ammeter circuits. Requires one standard flash-light cell, replaceable in the field. Temperature scale accuracy ±2% of full scale. AC readings ±5% (±3% for rectifier). Accessories listed below may be added for testing irons, grills, roasters, toasters, etc. Includes two SA-162 resistance bulbs, two SA-116 thermocouples, necessary electrical leads, and AS-TR-2 built-in transformer. **\$87.50**

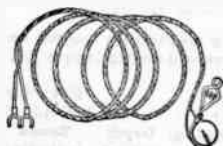


For more details, see Bulletin JRT-349.

**MODEL 61-JRT (LESS TRANSFORMER).** Same unit, same scales, except does not read in amperes; AS-TR-2 transformer assembly omitted. **\$65.00**

## ATTACHMENTS AND SPARE PARTS

### THERMOCOUPLES



**SA-116 with SHIELD and CLIP.** Flexible No. 22 gauge iron constantan, asbestos insulated, 5 1/2', with attachment clip and convection shield; for use with Models 32-JP-1, 32-JP-2, 32-JP-3 and 32-JP-4 oven testers; also 60-JRT and 61-JRT all-purpose testers. **\$1.65**

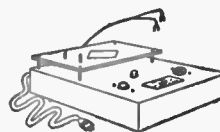
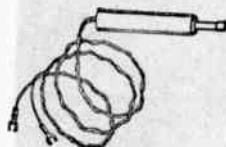
**SA-175 (PLAIN TIP).** For roasters, waffle irons, etc., 5 1/2' iron constantan flexible No. 22 gauge, asbestos insulated, with small ball tip; used where clip and shield of SA-116 not suitable; for Models 32-JP-2, 32-JP-4, 60-JRT, and 61-JRT. **\$1.30**

**SA-176 (for TOASTERS, etc.)** 5 1/2' iron constantan No. 22 gauge, asbestos insulated, with special disc to collect heat; easily attached to 32-JP-2 and 32-JP-4 oven testers, also 60-JRT and 61-JRT. **\$2.25**

**SA-188 (for AUTOMATIC WASHER TEMPERATURES, etc.)** 3/4" diameter copper tube, 4" long, encloses thermocouple for insertion in pipe or sample of water. Has 6' leads for attachment to 32-JP-2 and 32-JP-4 oven testers, also 60-JRT and 61-JRT. **\$3.50**

**SA-300 (for SURFACE READINGS).** Spring-type iron constantan in Transite tip with handle and 5' No. 22 gauge lead for extremely rapid heat readings; for attachment to 32-JP-3, 32-JP-4, 60-JRT and 61-JRT appliance testers. **\$5.00**

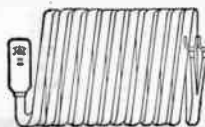
**SA-301 (REPLACEMENT TIP FOR SA-300).** Transite tip and thermal element only. **\$2.50**



**IRON TESTER THERMOCOUPLE, MODEL IT-1.** This attachment is identical with the 32-JIT, except there is no meter. It is easily connected to Models 32-JP-2, 32-JP-4, 60-JRT and 61-JRT. Shows open circuits and shorts, checks sole plate temperatures and thermostats on all types of irons. **\$14.75**

**SA-170 (REPLACEMENT THERMOCOUPLE for IRON TESTERS 32-JIT and IT-1).** Thermocouple and lead, including aluminum plate and special tip, quickly installed in the field. **\$1.90**

### RESISTANCE BULBS (FOR COLD TESTING)



**SA-142.** For use only with Model 60-JRT; calibration is not interchangeable with SA-162; has no embossed number. **\$5.00**

**SA-162.** For use only with Models 50-50 and 61-JRT; identified by embossed part number. **\$5.00**

**CL-90 CLAMP.** Metal clamp for holding SA-142 and SA-162 resistance bulbs in contact with surfaces up to 1/4". **\$0.25**

### TRANSFORMERS

**AS-TR-2.** Attachment for compartment of 61-JRT all-purpose tester, completely housed, with jumper lead and panel; reads 30 and 60 AC amp. scales on tester. **\$15.00**

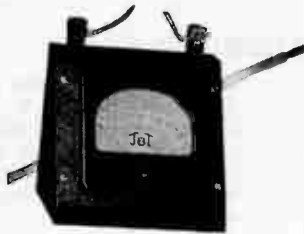
**AS-TR-3.** Attachment for increasing usefulness of 60-JRT all-purpose tester. Includes side rails for attaching inside compartment; fully housed. Reads 30 and 60 AC amp. by dividing volt scale by 10 or 5. **\$16.50**

## TEMPERATURE INDICATORS

**WHERE TO USE:** To check heat rise of motors, transformers and coils; for laboratory furnaces, inspection set-ups, for remote indication of infra-red and other oven temperatures; and to maintain controlled industrial processes such as heat treating and annealing. When used with selector switch, permits centralized reading of one to ten thermocouples, as in Diesel exhaust manifold applications.

### MODEL 32-J

**MODEL 32-J PYROMETER IN SN-3 STAND.** Mounted in sloping front black metal stand, 4 1/4" high x 4 3/8" deep x 4 1/8" wide. Compensated for ambient temperature. Medium resistance system, damped for quick reading on 2 1/2" scale, assures ruggedness and pointer stability. To retain the ±2% accuracy of the installation: use only the type and resistance of thermocouple and lead which are provided; do not cut extra lead—coil it—change in length changes calibration. A protection tube is not generally required. Many users find it convenient to keep an extra couple and lead on hand.



### MODEL 32-J IN SN-3 STAND

0°—650° F—350° C, includes SA-91 thermocouple, SA-84 lead, and CB-1 connector block.....\$27.50  
 0°—1200° F—650° C, includes SA-87, SA-82, and CB-1..... 27.50  
 0°—2000° F—1100° C, includes SA-87, SA-82, and CB-1..... 27.50

**MODEL 32-J IN SN-5 STAND** (not illustrated). With 3 binding posts to accommodate flexible extra lead and thermocouple for hard-to-reach locations.

0°—650° F with SA-91 thermocouple, SA-84 lead, CB-1 connector block, and SA-86 flexible lead and thermocouple.....\$31.00

## TEMPERATURE

**LEAD WIRES.** To bring the reference junction within the pyrometer, compensating or extension lead wires should always be used. See the instrument dial for (1) the kind of lead and (2) combined resistance of lead and thermocouple. Standard leads include:

SA-82 6' compensating lead for chromel-alumel couples; duplex, stranded; asbestos-insulated, cotton-braid impregnated with moisture-proof and flame-proof compound; terminals at instrument end; other end tinned for connector block ..... \$1.40  
 SA-83 26' compensating lead for chromel-alumel as above \$4.40  
 SA-84 6' extension lead for iron-constantan, 1938 calibration; duplex; moisture-proof and flame-proof; prepared as above \$1.40  
 SA-85 26' extension lead for iron-constantan, 1938 calibration; similar to above ..... \$4.40  
 SA-86 7' iron-constantan thermocouple and lead combined; twisted pair No. 20 Ga., asbestos-insulated—for intermittent use on 600° F scales; terminals at instrument end; other end welded; (resistance is not interchangeable with SA-84 nor with SA-85) ..... \$1.70



**THERMOCOUPLES.** For pyrometers and leads above, J-B-T thermocouples are carefully selected, standardized, and tested.

SA-87 12" No. 14 Ga. chromel-alumel, 2-hole ceramic beads, fits 5/16" hole; welded tip ..... \$2.80  
 SA-88 same except 24" No. 14 Ga. .... \$3.50  
 SA-89 12" No. 8 Ga. chromel-alumel, 2-hole ceramic beads, fits 7/16" hole; welded tip ..... \$2.80  
 SA-90 same except 24" No. 8 Ga. .... \$3.50  
 SA-91 12" No. 14 Ga. iron-constantan, 1938 calibration; 2-hole ceramic beads, fits 5/16" hole; welded tip ..... \$2.35  
**Flexible Thermocouple.** 7' length, see SA-86 lead wire.

### MODEL 60-JPS

**MODEL 60-JPS.** This portable makes it easy to know temperatures at one to ten locations. Excellent for study of heat in various parts of the same equipment, or in a battery of units. Knife-edge pointer, 5.6" scale. Heavy-duty thermocouple switch has average contact resistance of .00075 ohms or less. Automatically compensated for ambient temperature, indoors or outdoors. To retain accuracy of 1% full scale, use leads and thermocouples equal to resistance and e.m.f. vs-temperature characteristics for which instrument is calibrated. Medium resistance system assures portability. Housed in natural-finish wood case 1 1/2" x 8 3/8" x 4 3/8" over rubber feet. A "must" for inspection, maintenance, and engineering.



60-JPS—0°—600° F with SA-86, 7' thermocouple and lead for small apertures.....\$92.60

60-JPS—0°—1200° F with SA-88, SA-82, and CB-1..... 95.00

60-JPS—0°—2000° F with SA-82, and CB-1..... 95.00

60-JP—For one thermocouple only; furnished with thermocouple and lead same as 60-JPS, but without selector switch.

0°—600° F, with SA-86 .....\$67.60

60-JP—0°—1200° F, with SA-88, SA-82, and CB-1..... 70.00

60-JP—0°—2000° F, with SA-88, SA-82, and CB-1..... 70.00

**Note:** When ordering additional thermocouples, specify couples and leads as above. Centigrade equivalent scales available on order.

### Model 70-J

**MODEL 70-J PYROMETER,** for accurate reading at a distance, has full 6" scale and spade pointer, with accuracy of 1% of total scale deflection. Automatically compensated for ambient temperature. Molded case mounted in metal protecting shell 7 3/8" x 8 1/8" x 1 1/2". Connections through bottom of case for wall or front-of-board mounting. When ordering, specify which standard scale range: 0°—600° F for 1938 sid. I-C; 0°—1200° F for C-A; 0°—2000° F for C-A thermocouples.



**PRICE,** including 24" thermocouple and 26' lead.....\$60.00

**Note:** Centigrade equivalent scales available on order.

## ACCESSORIES

### CONNECTOR BLOCK Model CB-1.

Lava connector block, withstands high temperatures, accommodates all thermocouples up to No. 6 Ga. Heavy brass connectors keep contact resistance low. Can be used independent of connector head. ....\$1.50



**CONNECTOR HEAD Model CH-6.** Connector head encloses connector block and rigidly supports protection tube around thermocouple. Opens for thermocouple inspection without disconnecting circuit. Normally supplied with reducing bushing for 1/2" i.p.s. Composition bushing at top can be removed for permanent 1/2" conduit installation. Including block.....\$2.50

**PROTECTION TUBES** protect and support "base-metal" thermocouples such as above. Used in permanent installations at higher temperatures, or in damaging atmospheres. One end is closed, other end normally threaded for 1/2" i.p.s. Proper quality of tubing is very important.

**No. 1 Wrought Iron—**For temperatures to 1200° F in oil baths, brazing, and general intermittent duty.

TU-11 No. 1—12 inches \$1.50 TU-12 No. 1—24 inches \$2.00

**No. 7 Alloy—**27% chromium, iron; seamless drawn tube; for cyanide pots, salt baths with cyanide, open fire with sulphurous content; to 2300° F.

TU-5 No. 7—12 inches \$6.25 TU-6 No. 7—24 inches \$9.85

**No. 9 Alloy—**62% nickel, 13% chromium; seamless drawn; for salt baths without cyanide; for gas and oil open life furnaces and general use, except sulphurous atmospheres; to 2300° F.

TU-2 No. 9—12 inches \$4.75 TU-3 No. 9—24 inches \$8.25

**Note:** For temperatures above 2300° F; platinum, platinum-rhodium thermocouples are available.

## VIBRATING REED FREQUENCY METERS (PATENTED)

J-B-T Vibrating Reed Frequency Meters are used extensively in radio, telephone, and television service, on engine generator sets, in laboratories, in many types of electronic equipment, on panel and control boards in central stations and industrial plants—wherever constant or known frequency is important to efficient operation of equipment.

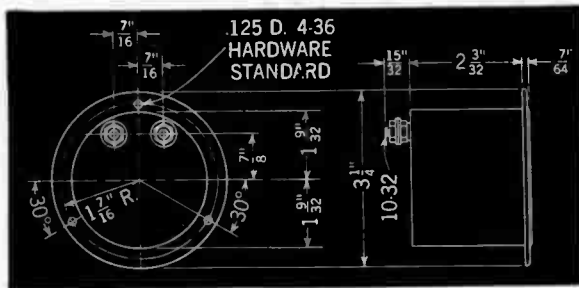
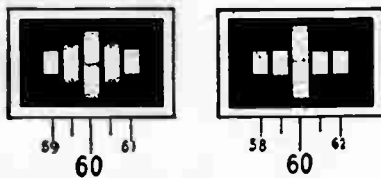
### PRINCIPLE OF OPERATION:

Simple in design, the J-B-T Meter consists of a case, base, dial and central mounting frame, with a series of spring steel reeds screwed to a reed mounting bar, individual driving coil surrounding each bank of reeds, permanent magnet, series resistor and terminal studs.

Each reed is adjusted to respond by resonance to but one frequency. As the alternating current (or interrupted direct current) excites the driving coil, the one reed "in tune" with the frequency in the coils will respond by vibrating rapidly because of permanent magnet polarization and induced magnetism from the coil. The instrument is adapted to specified operating voltage by a series resistor. Frequency of the current is read on the graduated face of the instrument.

### ADVANTAGES:

Some standard models are available in either half cycle or full cycle steps, as shown below on two meters indicating a frequency of 60 cycles.



Above: Models 30-F, 31-F, 33-F, 34-F; Metal Case

Below: Models 30-FX, 31-FX, 33-FX, and 34-FX; Molded Case Meets Mounting Dimensions of JAN-1-6 and AWS



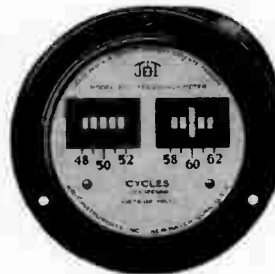
Guaranteed accuracy at normal operating temperatures is  $\pm 0.3\%$  or better of the frequency being measured, depending on the model. High fatigue safety factor for continuous operation. Temperature compensations are not required as temperature coefficient of reeds is only approximately 75 parts per million per degree F., negative.

All meters are permanently calibrated at the factory and do not require subsequent adjustment. Accuracy is not affected by wave form or external magnetic fields. Built with no pivoted parts and with lock washers at every critical point, these rugged meters can take rougher treatment than many instruments.

### CAUTION:

If a meter plugged in on a 60 cycle AC power line does not indicate a frequency of exactly 60 cycles, trust the meter! Power supply may momentarily be off-frequency due to changing load conditions beyond the control of Utility. All J-B-T Vibrating Reed Frequency Meters are accurately calibrated at the factory, entirely independent of frequency of power supply.

### MODEL 30-F



MODEL 30-F

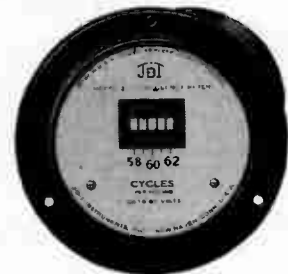
**Range:** 48-52 and 58-62 cycles. Double window for ease of reading frequency in either range. Often specified for export. 100-130 volts; 130 ohms per volt; 1 watt power consumption. Accuracy  $\pm 0.3\%$ . Flush panel mounting. For details, Bulletin VF-43.

- 30-F, 48-52 and 58-62 cy., 3/4" Metal Case ..... \$25.00
- 30-FX, 48-52 and 58-62 cy., 3/2" Molded Case, AWS mtg. .... \$25.00

### MODEL 31-F

Used in standby power equipment. Handy for accurately measuring frequency of power source. Five reeds, 58-62 cycles. Other characteristics same as Model 30-F. For details, Bulletin VF-43.

- 31-F, 58-62 cy., 3/4" Metal Case ..... \$21.50
- 31-FX, 58-62 cy., 3/2" Molded Case, AWS mtg. .... \$21.50



MODEL 31-F

### MODEL 34-FX

Used where a broader frequency band is desirable. Nine reeds, 56-64 cycles, or in half-cycle steps (accuracy  $\pm 0.2\%$ ) 58-62 cycles. 100-130 volts; 130 ohms per volt; 1 watt power consumption. Flush panel mounting. For details, Bulletin VF-43.

- 34-F, 56-64 cy., 3/4" Metal Case ..... \$24.75
- 34-FX, 56-64 cy., 3/2" Molded Case ..... \$24.75
- 34-F, 58-62 cy., 3/4" Metal Case ..... \$26.25
- 34-FX, 58-62 cy., 3/2" Molded Case, AWS mtg. .... \$26.25



MODEL 34-FX

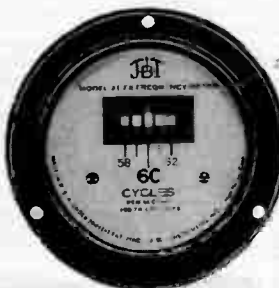
### MODEL 33-F



400-cycle. Used for measuring frequency of high-cycle power sources, including new heavy aircraft. Accuracy  $\pm 0.3\%$ . Nine reeds, 380 to 420-cycle range. 100-130 volts; 70 ohms per volt; 1.75 watts power consumption. Flush panel mounting. For details, see Bulletin VF-43-1A.

33-F, 380-420 cy.,  $3\frac{1}{4}$ " Metal Case ..... \$31.00  
 33-FX, 380-420 cy.,  $3\frac{1}{2}$ " Molded Case, AWS mtg. .... \$31.00

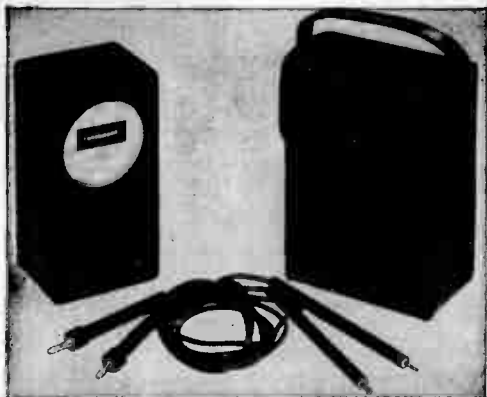
### MODEL 21-FX



Matches other  $2\frac{1}{2}$ " panel instruments. Meets ASA (AWS) C39.2 in depth of case as well as mounting dimensions and mounting hardware. Weighs only  $4\frac{1}{2}$  oz. 100-130 volts; 5 reeds; 58-62 cycles; 190 ohms per volt; 0.6 watt power consumption. Also 116 to 124 cy.; 160 ohms per volt; 0.7 watt power consumption. 390 to 410 cy.; 85 ohms per volt; 1.3 watts power consumption. Flush panel mounting. For details, see Bulletin VF-43-1B.

21-FX, 58-62 cy.,  $2\frac{1}{2}$ " Molded Case ..... \$20.50  
 21-FX, 116-124 cy.,  $2\frac{1}{2}$ " Molded Case, AWS mtg. ... \$23.00  
 21-FX, 390-410 cy.,  $2\frac{1}{2}$ " Molded Case ..... \$25.00

### PORTABLE FREQUENCY TESTERS



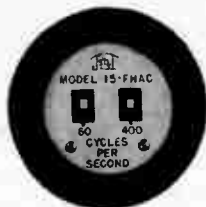
**MODEL 33-FP-9L.** Handy, compact, portable instrument of exceptional accuracy even under poor wave-form conditions, fluctuating voltage or external magnetic disturbances. Meets exacting test requirements of aviation, signal and communication equipment. Housed in sturdy molded case  $5\frac{7}{8}$ " x  $3\frac{1}{4}$ " x  $2\frac{5}{8}$ " with leather carrying case  $6\frac{3}{8}$ " x  $4\frac{1}{4}$ " x  $2\frac{3}{4}$ ". 4' leads are supplied complete with sharp 3" insulated test picks and banana plugs. Electrical characteristics identical with 400 cycle 33-F. Model 34-FP-9L electrical characteristics identical with 60-cycle 34-FX.

33-FP-9L, 380-420 cy., 100-130 volts ..... \$43.25  
 34-FP-9L, 56-64 cy., 100-130 volts ..... \$37.00

### 1 1/2" SEALED METER

**MODEL 15-FHAC.** now used extensively on audio-oscillators as the frequency standard, the model illustrated operates 2 reeds, 60 and 400 cycles, at approximately 8-10 volts for cathode follower circuit. This and other  $1\frac{1}{2}$ " sealed meters (under development) exceed pertinent JAN-I-6 provisions. Barrel is  $1\frac{1}{2}$ " diameter; detachable flange 2.094" diameter; overall depth behind flange  $1\frac{1}{8}$ "; three holes on 0.875" radius; see also Print EX-39.

15-FHAC ..... \$18.45



### NOTE ON METER VOLTAGE

J-B-T Vibrating Reed Frequency Meters of all sizes normally are made with two studs and are designed to be connected across one phase of a multi-phase line. The single phase voltage where the meter will be used thus becomes the voltage to be specified for the meter. Special meters with extra studs are made only for the purpose of reading two or more voltages, not additional phases.

### 3 1/2" SEALED METER

**FHX TYPE METERS,** sealed instruments, glass-to-metal type with solder terminals, are made in  $3\frac{1}{2}$ " flange diameter, but not carried in stock. Maximum barrel diameter  $2\frac{5}{8}$ ";  $2\frac{3}{8}$ " overall depth behind flange. Mounted by 3 flange holes  $0.150" \pm 0.007$  diameter on 1.58" radius. See also Print SK-39. 100-130 volts is standard.

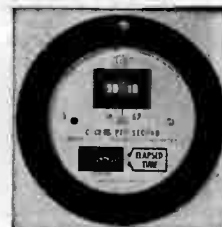
31-FHX, 5 reeds, 48-52 cy. .... \$30.50  
 33-FHX, 9 reeds, 380-420 cy. .... \$40.00  
 34-FHX, 9 reeds, 56-64 cy. .... \$33.75  
 34-FHX-11 (illustrated), 11 reeds, 55-65 cy. .... \$35.75



### ELAPSED TIME - FREQUENCY METER

This unique panel instrument combines the elapsed time or running time meter with frequency reeds. It is widely used on motor generator sets and on electrical equipment where maintenance routine calls for periodic servicing. Reads 9,999.9 hours; 58-62 cycles at 110-130 volts. Self-starting. See diagram below.

31-FE,  $3\frac{1}{4}$ " metal case ..... \$30.00  
 31-FEX-1 (not stocked),  $3\frac{1}{2}$ " meter flange permanently attached... \$31.00



### ELAPSED TIME METER

**MODEL 31-EX.** To record operating time of AC electrical and electronic equipment, this instrument registers in 1/10th hour steps to 9,999.9 hours, then automatically re-sets. Molded  $3\frac{1}{2}$ " case, per diagram below, fully encloses all parts. Popular for tube lie, maintenance schedules, machine time, etc.

31-EX, 60 cy., 110-130 v. .... \$14.50  
 31-EX, 60 cy., 220-240 v. .... \$15.50



Above: Model 31-FE, Metal Case; 31-FEX-1 has same dimensions except metal  $3\frac{1}{2}$ " flange to JAN-I-6 and AWS dimensions.

Below: Model 31-EX Molded Case; meets flange dimensions of JAN-I-6 and AWS.



**B&W**

# TEST EQUIPMENT

BARKER & WILLIAMSON • UPPER DARBY, PA.

## B & W NEW PLUG-IN LINKS

**FOR IMPEDANCE MATCHING**  
Adaptable to all B & W Swinging Link assemblies, these B & W plug-in links solve the quick change problem. Just pull out one coil and plug in another with the required number of turns. Old link arm easily replaced with new plug-in type.



### ORDERING NUMBERS FOR B & W PLUG-IN LINKS

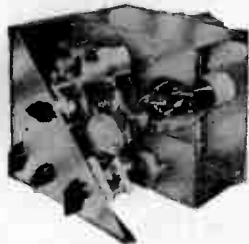
For Types TVH, TVL, BVL Swinging Link Assemblies			For Type HDV Swinging Link Assemblies		
	Ordering No.	Price		Ordering No.	Price
Arm Only	3550	\$ .70	Arm Only	3750	\$1.40
Arm and Hinge	3565	1.00	Arm and Hinge	3765	1.80

### PLUG-IN LINK COILS

Ordering		Ordering	
No.	Price	No.	Price
1 turn	3551 \$ .60	1 turn	3761 \$1.25
3 turns	3553 .60	3 turns	3753 1.25
6 turns	3556 .60	6 turns	3756 1.25
10 turns	3560 .95	10 turns	3760 1.75

Above are standard. Other turns available on request.

## B & W FREQUENCY MULTIPLIER



Price: \$85.00 Amateur Net. Complete with tubes. Dimensions: 6 1/2" x 7" x 9 3/4".

This B & W all-band frequency multiplier solves the difficult problem of developing frequency step-up stages. Packaged unit covers 80-40-20-15-11 and 10 meter bands. Just flip a switch on the attractive reverse etched aluminum panel plate, to get the required band. Operates on either VFO or Crystal input and not less than 25 watt output.

## B & W SINE WAVE CLIPPER Model 250

Equipped with a pair of input terminals, a pair of output terminals, an output volume control and a selector switch.

Net Price: \$10.00.

Dimensions: 2" x 4" x 5 1/2".

**SPEEDS ACCURATE ANALYSIS OF AUDIO CIRCUITS. SIMPLIFIES SELECTIONS OF COMPONENTS. SAVES VALUABLE TIME.** Here's an instrument that will do most of the jobs usually assigned to a square wave generator costing about 10 times as much! The B & W Sine Wave Clipper provides a test signal particularly useful in examining the transient and frequency response of audio circuits. Designed to be driven by an audio oscillator, the clipper provides a clipped sine wave — hence the name "Sine Wave Clipper." Used in engineering work, repairs, or with equipment under development, it will quickly pay for itself many times over.

## B & W FREQUENCY METER Model 300

Net Price: \$105.00.

Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

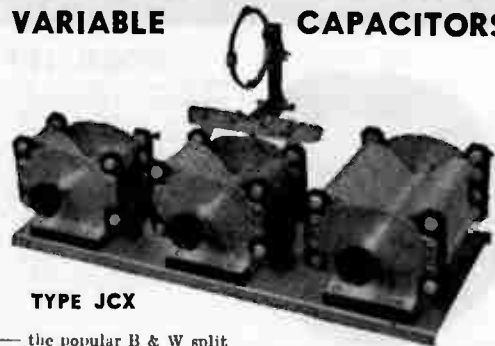
An accurate and convenient means of making direct measurements of unknown audio frequencies up to 30,000 cycles. Integral power supply. Extremely useful for routine checking of audio oscillators or tone generators. Housed in an attractive black crackle finished steel cabinet with carrying handle and rubber feet.

### FEATURES

- Frequency Range: 20 to 30,000 cycles in 6 ranges.
- Sensitivity: minimum .5 volts input.
- Wave Form: will operate on any wave form with peak ratios of less than 8 to 1.
- Calibration: when referenced against 60 cycle line frequency, all other frequencies will fall within 2%.



## B & W NEW, SMALL BUTTERFLY VARIABLE CAPACITORS



TYPE JCX

Now — the popular B & W split stator, butterfly type of variable condenser construction has been adapted to small, compact units for general ham and other use!

Having just 25% of the frontal area of CX types, these new B & W JCX Variable Capacitors are ideal for medium powered triode or tetrode stage plate circuit applications.

Featuring stainless steel shafts, heavy rounded aluminum plates and high quality insulating materials, the B & W Midget Butterfly will be a welcome addition for the amateur who is looking for peak efficiency in low and medium power transmitter stages.

### "E" TYPE .125" AIRGAP

Type	Catalog Stock No.	Capacity Section In Series Max. Min.	Capacity Per Section Max. Min.	Mounting Length	Net Price
JCX100E	100	50 15	99 23	5 1/2"	\$9.00
JCX50E	101	25 10	42 13	3 3/4"	6.75
JCX25E	102	16 8	25 10	2 3/4"	5.50

## B & W AUDIO OSCILLATOR Model 200

Net Price: \$115.00. Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

Ideal for use in distortion measurements, frequency measurements or in any application where a stable, accurately calibrated source of frequencies between 30 and 30,000 cycles is required. No zero reset or line calibration is required. Self-contained power supply. Housed in an attractive black crackle finished steel cabinet with carrying handle and rubber feet. Panel is of 1/8" reverse etched aluminum.

### FEATURES

- Voltage Output: 12.5 volts open circuit. 11 volts output on 500 ohm load.
- Wave Form: RMS harmonics at 5 volts output on 500 ohm load, less than 1%. On open circuit (10,000 ohms up) approximately .5% on all frequencies between 50 and 15,000 cycles.
- Frequency Response: better than ±1 D.B. from 30 to 30,000 cycles.
- Stability: better than 1%.
- Calibration: ±2.5%.



## B & W DISTORTION METER Model 400

Net Price: \$140.00.

Dimensions: 13 3/4" x 7 1/4" x 9 1/2".

A sensitive instrument having a wide range of applications in the audio frequency measurements field. Ideal for measuring low level audio voltage and determining noise and harmonic content of same. Variable frequency selective filter provides a single frequency suppression circuit for the frequency range of 50 to 15,000 cycles. Small size, light weight and outstanding performance make this instrument an ideal unit for either laboratory or field work.

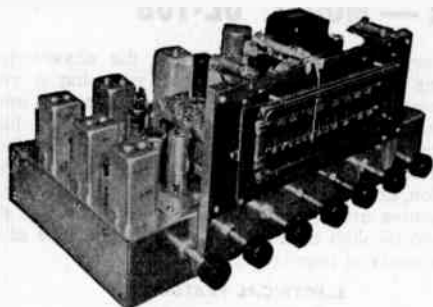
### FEATURES

- Frequency Range:
  - (a) Distortion meter. For fundamentals from 50 to 15,000 cycles, measuring harmonics up to 45,000 cycles.
  - (b) As voltmeter and D.V. meter from 30 to 30,000 cycles.
- Sensitivity:
  - (a) Noise and distortion measurements, minimum input .3 volts.
  - (b) Voltmeter, full scale readings of .3, .1, .03, .01, .003 volts.
- Calibration:
  - For distortion measurements: ±10%.
  - For noise measurements: ±1 D.B.
  - For voltage measurements: ±5%.





## BROWNING FM-AM TUNER — MODEL RJ-20



### MECHANICAL FEATURES

- Edgelighted slide-rule dial with large tuning ratio.
- Height 7½"; width, 17"; depth, 9".
- Weight: RJ-20, 18½ lbs. shipping 24 lbs.
- Model RJ-22: Rack type with black leatherette panel, 8¾" high, 19" wide and 9¾" deep; shipping 38 lbs.

Designed for high-fidelity receiving application in the AM broadcast and FM bands.

### ELECTRICAL FEATURES

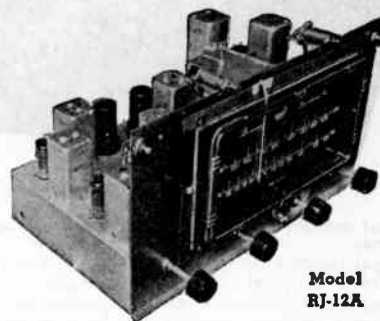
- For FM—88 to 108 MC, and AM—530 to 1650 KC. Armstrong FM circuit.
- 20 db quieting with 6½ microvolts on FM; 5 microvolts sensitivity on AM.
- Separate RF and IF on both bands; no coil switching.
- Variable bandwidth AM IF gives full 9 KC band on broad and 4 KC on narrow position.
- Drift-compensated.
- FM audio response flat from 15 to 15,000 cycles ± 1½ db.
- 20,000-ohm output impedance; 300 or 72 ohms input for FM provided.
- Tubes: five 6AU6; one 7F8; two 6AL5; one 6SN7; one 6SK7; one 6SA7; one 6SG7; one 6AL7 tuning eye; one 5Y3 rectifier.

## BROWNING FM-AM TUNER — MODEL RJ-12A

Engineered for high-fidelity reception in the FM band. The AM section provides high sensitivity and selectivity as well as quality reception in the broadcast band.

### ELECTRICAL FEATURES

- For the FM band—88 to 108 MC and broadcast band—530 to 1650 KC.
- Less than 10 microvolts needed to produce 20 db noise reduction in the FM band; sensitivity of 5 microvolts in the AM broadcast band
- Separate RF and IF systems on both bands; no coil switching.
- Drift compensated.
- FM audio response flat from 15 cycles to 15000 cycles within ± 1½ db.
- AM audio response flat from 20 to 6600 cycles ± 3 db; IF's triple tuned.
- Miniature tubes used as FM RF and IF amplifiers assure maximum gain.
- FM uses 2-stage cascade limiting circuit to insure maximum noise rejection.
- High-impedance output for connection to any high-quality audio amplifier.
- Phono position on channel selector switch to provide volume control directly on the tuner; phono input connection in back of tuner.
- FM-AM on one antenna with 300 ohms input with twin lead cables.
- Power supply, optional, requires 250 volts d-c at 65 MA and 6.3 volts a-c at 4 amperes.
- Major Armstrong's circuit on FM.
- 6AL7 tuning eye for accurate tuning on both FM and AM.
- Operates on 115 volts, 60 cycles. 80 volt-amperes input when used with Browning model PF-12 power supply.
- Tubes: three 6AU6; one 7F8; one 6SK7; one 6SG7; two 6SJ7; one 6H6; one 6SA7; one 6AL7 tuning eye; one 1N34 crystal detector.



Model RJ-12A

### MECHANICAL FEATURES

- Easily mounted in book-cases, drawers, shelves and cabinets.
- Dial escutcheon supplied with unit. Edge lighted dial—slide rule type.
- Available with black leatherette finished panel for rack mounting (RJ-14A).
- Model PF-12 power supply is small separate unit for mounting in confined spaces.
- Dimensions: height 7¾"; width 13½"; depth 9". Power supply: height 6"; width 3½"; depth 8". Rack type tuner; height 8¾"; width 19"; depth 9".

Model	Weight	Shipping Weight
RJ-12A—FM-AM Tuner . . .	12 lbs. . . .	16 lbs.
RJ-14A—Rack Panel Model . . .	24 lbs. . . .	30 lbs.
PF-12—Power Supply . . .	8 lbs. . . .	9 lbs.

## BROWNING FM TUNER — MODEL RV-10

Designed for high-fidelity reception in the FM band.

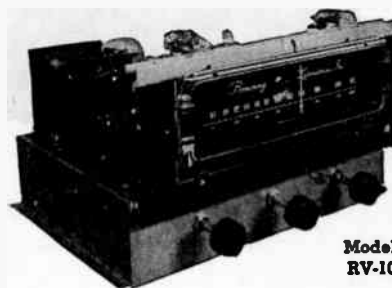
### ELECTRICAL FEATURES

- Receives signals in the FM band extending from 88 to 108 megacycles.
- Less than 10 microvolts needed to produce complete limiting.
- Audio response flat from 15 cycles to 15,000 cycles within ± 1½ db.
- Two-stage cascade limiter used to ensure freedom from noise.
- Tuned RF stage used to increase gain and reduce image interference.
- High impedance output to feed any high-fidelity amplifier.
- Drift-compensated.
- PHONO-FM switch permits instant transfer of input signals.
- Power supply self contained.
- Employs Armstrong FM circuit.
- Tuning eye indicates correct tuning.
- 115 volt, 60 cycle AC operation. 65 volt-amperes input.

- Tube complement: three Type 6AU6, one 7F8, two 6SJ7, one 6H6.
- Tuning eye indicator (6AL7). Type 5Y3 rectifier tube.

### MECHANICAL FEATURES

- Physically small. Can be easily mounted in cabinets, shelves, bookcases, drawers, and the like.
- Dial escutcheon, knobs, shielded interconnecting wire and connectors supplied with each unit.
- Attractive edgelighted dial calibrated in megacycles and channel numbers.
- Rugged construction, all components of the highest quality.
- Also available with standard rack panel (Designation Model RV-11).
- Dimensions: RV-10—Height 6½", Width 11", Depth 8¾". RV-11—Height 8¾", Width 19", Depth 8¾".



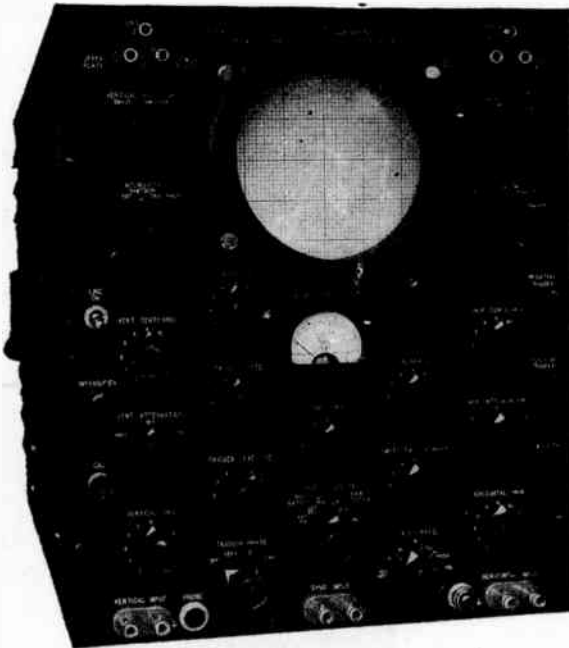
Model RV-10

Model	Weight	Shipping Weight
RV-10 . . . . .	10½ lbs.	14 lbs.
RV-11 Rack Panel Mtg.	15 lbs.	21 lbs.





## BROWNING OSCILLOSYNCHROSCOPE — MODEL OL-15B



### MECHANICAL FEATURES

- Steel cabinet finished in black wrinkle with  $\frac{1}{4}$ " aluminum panel.
- Panel finished in black leatherette with all labels engraved directly on panel.
- Copper-plated steel chassis with lacquer finish.
- Controls grouped according to function for convenience of operation.
- Components arranged for electrical efficiency and ease of servicing.
- Dimension: Height 15 $\frac{3}{4}$ ", Width 12 $\frac{3}{4}$ ", Depth 19 $\frac{3}{4}$ ".
- Weight: 95 lbs. Shipping weight: 150 lbs.

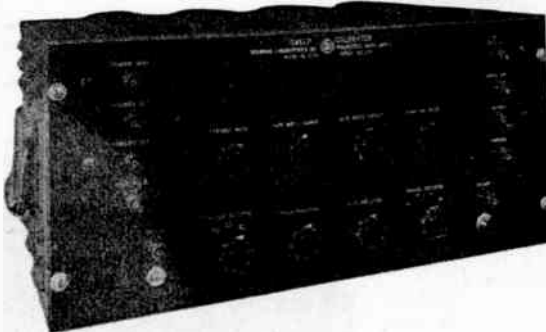
A laboratory instrument designed for the observation of wave forms and transient phenomena requiring a variety of time bases, triggers, phasing and delay circuits, and extended range amplifiers. It may be used for work on laboratory applications where extremely short pulses or phenomena of irregular occurrence rate must be studied. It is also designed for television, communication, radar, and facsimile work. The special features are combined with the functions of a standard oscilloscope with greater ease and convenience of operation as a result of improved design.

### ELECTRICAL FEATURES

- Five-inch 5J1A cathode-ray tube with 4000V accelerating potential for improved intensity and definition of images.
- Sawtooth sweep with range of 5 cycles per second to 500 kilocycles per second permitting observation of radio frequency wave forms.
- Single sweep triggered time base for observation of transient phenomena or phenomena of varying repetition rates.
- Internal trigger generator and built-in phasing circuit for use with single sweep time base.
- Extended range amplifiers. The vertical amplifier is flat within 3 db. from 10 cycles per second to 6 megacycles per second. The horizontal amplifier is flat within 1 db. from 5 cycles per second to 1 megacycle per second. Maximum vertical deflection sensitivity is .05 R.M.S. volts per inch.
- Full screen deflection.
- The response curve of the vertical amplifier which is linear and without positive slope from 10 cycles to 4 megacycles has transient response such that a 100 kilocycle square wave with rates of rise and fall in the order of 500 volts per microsecond is faithfully reproduced.
- Low-capacitance, high-impedance probe for use with vertical amplifier. Voltage attenuation of probe is 10:1.
- Provisions for direct connection to all deflection plates.
- Internal or external blanking of beam for timing purposes and for elimination of retrace.
- Voltage regulation of all low-level stages for stability of operation under varying line voltage conditions.
- Built-in voltmeter and calibrating circuit for determining deflection sensitivity at any setting of the gain controls.
- Tube complement: three 6C4, one 6AC7, one 6AG5, five 6AG7, two 807, five 6SN7, two 6SJ7, three 6SH7, three 6V6GT, one 884, two 2X2A, one 5R4GY, one 6X5GT, one VR-105, one 5J1A.

Net Price \$1275.00 F.O.B. Winchester, Mass.

## BROWNING SWEEP CALIBRATOR — MODEL GL-22A



### MECHANICAL FEATURES

- Provided with steel cabinet finished in black wrinkle.
- Panel finished in black leatherette with labels engraved into surface.
- All output connections on front panel.
- Insulated waterproof binding posts used for output connections.
- Dimension: Height 9", Width 20 $\frac{1}{2}$ ", Depth 12".
- Weight: 26 lbs. Shipping weight: 28 lbs.

Designed for use with oscilloscopes and synchrosopes as a source of timing markers for the measurement of sweep intervals.

### ELECTRICAL FEATURES

- Provides markers of 0.1, 1.0, 10, 100 microseconds either positive or negative with variable amplitude to 50 volts.
- Generates variable width, variable amplitude gate for blanking or timing purposes.
- Contains own trigger generator with positive and negative trigger outputs.
- Markers may be initiated from external trigger or from internal generator. May be synchronized with triggers up to 100 KC. repetition rate.
- Voltage regulation to timing circuits.
- 115 volt, 60 cycle operation. 110 volt-amperes input.
- Tube complement: one Type 6BE6, one 6J6, three 6V6GT, one 6SN7, one 5Y3GT, one VR-105, one 6X5GT, two 12AU7, one 6H6, one 6SH7, one 6AG7, and one 2050.

Net Prices, F.O.B. Winchester, Mass.

Cabinet Style . . . . . \$295.00

Rack Panel . . . . . \$200.00



## BROWNING MODEL TAA-16 AMPLIFIER

High gain audio amplifier feeding AC voltmeter for measurement of standing wave ratios with slotted lines. Many other similar uses.

### ELECTRICAL FEATURES

- 500- to 5000-cycle range with broadband or selective controls on front panel.
- 15-microvolt sensitivity in broadband position and 10 microvolts in selective position.
- Meter scales 0-10 and standing-wave voltage ratio.
- Panel switch for bolometer voltage application.
- Master gain control switch provides attenuation factors of 1, 10 and 100.
- Power supply electronically regulated for stability.
- 60 volt-amperes input at 115 volts 60 cycles.
- Tubes: three 6SJ7GT; one VR-105; two 6V6GT; one 6H6GT; one 5Y3GT rectifier.

NET PRICE COMPLETE WITH TUBES (FOB Winchester, Mass.) \$390.00

### MECHANICAL FEATURES

- Rack panel in black wrinkle steel cabinet, 9" x 20" x 12".
- Panel black leatherette finish with engraved characters.
- Input tube shock mounted for low microphonics.
- Weight 30½ lbs. Shipping weight 45 lbs.

## BROWNING MODEL TVN-7

### POWER SUPPLY AND SQUARE-WAVE MODULATOR

The basic unit of a signal generator in the super-high-frequency range. Square-wave modulator for low-powered velocity-modulated tubes such as the 417A, 2K28 and 2K25.

### ELECTRICAL FEATURES

- Range of cathode voltage is 28 to 480 volts, continuously variable. Provision is made for 180 to 300 volt range.
- Range of reflector voltage is 15 to 150 volts controllable from panel.
- Provision is made for grid pulse modulation or reflector pulse modulation. Amplitude of grid pulse is 60 volts while the reflector pulse voltage is 100 volts maximum.
- Square-wave modulation frequency is variable from 600 to 2500 cycles.
- Provisions are made for external modulation.
- 110-115-volts, 60-cycle operation with 170 volt-amperes input.
- Tubes: one type 5Y3; two OD3/VR150; one 6SN7; one 6V6; one 6Y6G; one 5R4GY; one 6SJ7.

NET PRICE \$210.00 FOB Winchester, Mass.



### MECHANICAL FEATURES

- Designed for rack mounting; cabinet furnished at extra cost.
- Black wrinkle, engraved-steel panel.
- 8¾" x 19" x 11"; Weight 33 lbs. Shipping weight 50 lbs.

## BROWNING MODEL P-4-E CATHODE RAY SYNCHROSCOPE



Designed for viewing recurrent phenomenon where the duration of the phenomenon is short with respect to the intervals of occurrence.

### ELECTRICAL FEATURES

- Five-inch cathode-ray tube.
- Triggers generated from internal oscillator at repetition rates of 500, 1000, 2000, and 4000 p.p.s. or from external oscillator.
- Sweeps available at approximately ½, 5, 10, and 25 microseconds per inch internally synchronized; can be externally triggered.
- Internal source of calibration voltage of ½ microsecond period for sweeps.

- Return trace blanked out internally.
- Low-gain, broad-band video amplifier preceded by 954 detector.
- Tubes: two 2X2/879; one 5Z3; one 954; one 6AC7; one 6AG7; six 6SN7GT; two 6SL7GT; one 6SK7GT; one 7V7; one 5LP1.

### MECHANICAL FEATURES

- 8¾" x 14¼" x 20" steel cabinet, black wrinkled.
- Labels engraved in panel surface.
- Ruled screen for cathode-ray tube face.
- Weight: 45 lbs. Shipping weight 55 lbs.

NET PRICE \$440.00 F.O.B. Winchester, Mass.

## BROWNING CAPACITANCE RELAY MODEL DD-20

Detects and translates small capacitance changes into action.

### ELECTRICAL FEATURES

- Operates relay circuit on changes in capacitance of 0.25 mmfd.
- Indicates capacitance changes as small as .005 mmfd.
- Indicates mechanical movements as small as .00001 inches.
- Relay operation provides closed circuit, open circuit, or 115 volts a/c at 10 amperes.
- Electronically regulated power supply for maximum stability.
- Operation frequencies variable from 50 to 150 kilocycles.
- 105-125 volt, 60 cycle operation. 88 volt-amperes input.
- Tubes: three 6V6GT; one 8SA7; three 6SJ7; one 6H6; one 6N7; one VR-90; one 80.

NET PRICE \$225.00 F.O.B. Winchester, Mass.

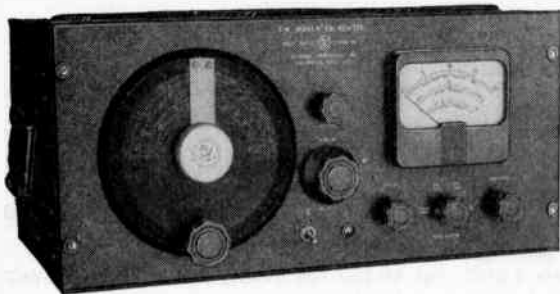


### MECHANICAL FEATURES

- 8¾" rack panel, mounted in black wrinkle steel cabinet.
- Aluminum panel finished in black leatherette.
- All labels engraved into panel surface.
- Antennae or capacitance leads enter rear of chassis.
- 8¾" x 19" x 9"; weight 35 lbs.; shipping weight 41 lbs.



## BROWNING UNIVERSAL FM MODULATION MONITOR — MODEL MD-25



A single instrument for monitoring the modulation of all FM transmitters operating in the communications bands from 30 to 162 mc. Provides simple and inexpensive means for checking fixed or mobile transmitters for compliance with FCC limitations on carrier frequency swing due to modulation. Maintenance of frequency swing within the FCC plus-or-minus 15 limit is equally important for reduction of adjacent-channel interference.

The Browning Universal Modulation Monitor checks any communications system working on 30-40, 40-50, 72-76, and 152-156 mc., a feature of special importance to engineers responsible for supervision of several systems, since a single instrument can be used to check all transmitters operating within the above bands.

### ELECTRICAL FEATURES

- An outstanding feature of Model MD-25 is its extreme simplicity of operation. The multi-range band-selector switch is set to the band to be monitored, and the unmodulated transmitter carrier is tuned in precisely. Then the carrier is modulated by voice or audio oscillator, and the frequency swing is read directly from a 4-inch panel meter calibrated to 20 kc. A calibrated discriminator is used to determine modulation swing. The meter also determines precise tuning by indicating limiter voltage or total discriminator voltage. • The meter can be read to better than 1 kc. The meter indicates peak swings of sustained sinusoidal modulation or voice modulation peaks of 0.3 seconds duration or more. • Aural monitoring is provided by means of an audio output which permits attachment of an audio amplifier or phones. Oscilloscope may be attached at the same point for analysis of demodulated signal. • Measurements may be made on signals generating less than 1 millivolt at the antenna input. If the instrument is mounted at the headquarters station, cars be checked while they are on the road. • Tube complement: one 6AK5, four 6AU5, two 6SN7, one each 5Y3, 6C4, 6AL5, 6J6, 6A2.

### MECHANICAL FEATURES

- Model MD-25 is mounted on a standard 8 $\frac{3}{4}$ " rack panel. • Supplied with a portable case 20" wide, 9" high, and 12" deep. • Weight: 40 lbs. Shipping weight: 55 lbs. • Case is readily removable for rack mounting use.

Net Price, F.O.B. Winchester, Mass. . \$295.00

## BROWNING FREQUENCY METERS

Browning frequency meters are precision-built instruments designed to check frequencies in various ranges from 100 kilocycles to 500 megacycles. Custom-built and hand-calibrated, each of the meters listed below is equipped with a 100 KC CRYSTAL USED AS SECONDARY STANDARD WHICH IS EASILY COMPARED WITH WWV RADIATIONS ALLOWING EVERY FREQUENCY METER TO BE CHECKED IN THE FIELD. Some of the outstanding electrical features are:



MODEL S-7

### MODEL S-4

- From 1 to 5 specified frequencies on 1.5-70 mc. range.
- Accuracy  $\pm .0025\%$  of the specified frequency.
- Stable electron-coupled oscillator used in special circuit.
- Visual detection of zero beat with cathode-ray indicator.
- 110-115-volt ac/dc operation with 40 volt-amperes input.
- Telescoping antenna on side of case.
- Tubes: one 6SC7; one 6SA7; one 6J5; one 6SK7; one 6U5; one 25Z6 and one VR90 voltage regulator.

### MODEL S-6

- Range: 100 kilocycles to 100 megacycles, in 5 bands.
- Accuracy 0.025% of the frequency measured.
- Harmonic amplifiers permit use of harmonics up to 50 mc.
- Visual and audio detection of zero beat.
- 110-115 volt ac operation with 40 volt-amperes input.
- Telescoping antenna on side of case.
- Tubes: one 6SK7; one 6SL7; one 6SF5; one 6U5; one 5Y3GT; one VR90.

### MODEL S-7

- Calibrated for One or Two frequencies in 72-76 and/or 152-162 mc. bands.
- Accuracy .0025% of the specified frequency.
- Deviation chart supplied for instant determination of deviation from assigned frequency.
- Cathode-ray indicator for accurate setting of ECO calibration.
- 105-115-volt ac/dc operation with 40 volt-amperes input.
- Telescoping antenna on side of case.
- Tubes: one 6SL7; one 6SA7; one 6J5; one 6SK7; one 25Z6; one VR-90; and one 6U5 tuning indicator.

### MECHANICAL FEATURES OF ALL MODELS

- Rugged steel cabinet with  $\frac{1}{8}$ " aluminum panel.
- Machined main dial graduated in 100 divisions over 180 degrees. Vernier allows reading of 1/10 of dial division.
- Panel finished in black leatherette.
- All labels engraved in panel surface.
- Dimensions: 13 $\frac{1}{2}$ " high, 7 $\frac{3}{8}$ " wide, 6 $\frac{7}{8}$ " deep.
- Weight: 15 lbs. Shipping weight 18 $\frac{1}{2}$  lbs.

## BROWNING FREQUENCY METER — MODEL S-5

Designed for checking the frequencies of police, fire department, railroad, marine and other special-service transmitters operating between 30 and 500 megacycles.



Prices Net (Complete with tubes) F.O.B. Winchester, Mass.  
1 Band . \$340.00 2 Bands . \$380.00 3 Bands . \$420.00

### ELECTRICAL FEATURES

- Custom-built and hand-calibrated for one, two, or three frequencies between 30 and 500 megacycles. • Accuracy: .0025% of the specified frequency. • Deviation chart supplied for determination of deviation from assigned frequency. • 100 KC crystal in temperature regulated oven is used as secondary standard with long time frequency stability. • Temperature compensated electron-coupled oscillator uses precision split-stator variable condenser with no moving contacts. • Voltage regulated supply for crystal and electron-coupled oscillators. • 105-115 volt, 60 cycle AC operation. 65 volt-amperes input. • Telescoping antenna for easy coupling to transmitter. • Tube complement: one Type 6C4, two 9001, two 6SJ7, three 6J5, one 5Y3GT, one VR-90.

### MECHANICAL FEATURES

- Rugged steel cabinet and  $\frac{1}{8}$ " steel panel. • Electron-coupled oscillator built on 3/16" aluminum sub-chassis. • Worm drive to tuning condenser with dual indicators provides 5000 dial divisions for tuning range. • Panel finished in black leatherette. • Labels engraved into panel surface. • Standard rack panel used. Unit may be incorporated in a rack with other equipment if desired. • Dimensions: Height 8 $\frac{3}{4}$ ", Width 19", Depth 9". • Weight: 35 lbs. Shipping weight: 50 lbs.



## BROWNING WIDE-BAND OSCILLOSYNCHROSCOPE MODEL OJ-17

This new Browning instrument is designed to meet the demand for an oscillosynchroscope capable of producing satisfactory traces in high-speed pulse work. The characteristics of this 'scope suit it to use in work involving pulses of extremely short duration and in the study of complex wave forms having very high frequency components. The individual elements — 'scope, synchronizer, high-voltage power supply, low-voltage power supply, and control panel — are mounted in a standard vertical rack cabinet on casters. Space is provided at the top of the cabinet for installation of a Fairchild Oscillerecord camera when photographic records of 'scope traces are desired.

### CIRCUIT FEATURES

- Band width of 16 mc. in vertical amplifier; deflection sensitivity of .05 volts/inch at maximum gain, video delay circuit with delay of 0.2 microsecond.
- Horizontal Amplifier: Band width of 2 mc., deflection sensitivity .25 volts/inch at maximum gain.
- Cathode Ray Tube: Type 5RP or 5XP with anode voltage variable from 10 to 20 KV. Supplied in any of the standard phosphors.
- Driven Sweep: Variable from .05 to 500 microseconds per inch, may be triggered from (1) external pulses of 0.1 volt or higher, (2) video amplifier signals, (3) scope trigger generator.
- Sawtooth Recurrent Sweep: 5 to 500,000 cycles per second.
- Trigger Generator: Positive and negative output of 100 volts from 500 ohms, running rate — 20-20,000 cps.
- Markers: Either internal blanking or deflection type: 0.1, 1.0, 10, 100 microsecond ranges.
- Blanking: External connection to grid provided.
- Variable Delay Circuit: Operates from internal trigger generator or external sync. and provides positive and negative delayed cut-put triggers. May be used to delay sweep from external sync. or internal trigger generator. Delay continuously variable to 200 microseconds. Adjustable by means of 4½" directly calibrated dial.
- Voltage Calibration Circuit: Provides measurement of input signals by means of substitution voltages in the form of 60-cycle square waves.
- Size: 81¾" x 23⅝" x 24".
- Weight: 500 lbs.; shipping weight: 750 lbs.

NET PRICE, F.O.B. Winchester, Massachusetts . . . . \$5000.00



## BROWNING OSCILLOSYNCHROSCOPE — MODEL ON-5



This new, low-priced instrument is designed to satisfy the requirements for **basic laboratory equipment** to be used in pulse work. It provides exceptional flexibility with sweep writing rate continuously variable over wide range, broad frequency coverage and high sensitivity; it is self-calibrating on both the X and the Y axis. All these advantages are provided at exceptionally low cost.

### ELECTRICAL FEATURES

- Five-inch 5UP1 cathode-ray tube operates at accelerating potential of 2600 volts.
- Triggered sweep writing rate continuously variable from 1.0 to 25,000 microseconds per inch.
- Sweep speed controls directly calibrated, within  $\pm 10\%$ , in terms of microseconds per screen division (horizontal deflection) for both triggered and sawtooth operation.
- Sawtooth recurrence rate: 10 cycles to 100 KC.
- Triggered sweep will operate at any rate from a single sweep up to a frequency determined by the desired sweep time; will also operate from regularly recurrent signals to display up to ten cycles of the phenomena for a single, triggered sweep.
- Sweep starting time approximately 0.1 microsecond.
- Sweep may be triggered (or synchronized when operated as recurrent sawtooth) by positive or negative sine-wave or pulse signals of 0.5 volts (external) or 0.75 inches deflection (from vertical amplifier).
- Vertical amplifier has flat-frequency response, within 3 db., from 5 cycles to 5 megacycles per second with deflection sensitivity of 0.075 volts RMS for one-inch deflection, at maximum gain.
- Three-step attenuator for gain control 1:1, 10:1, and 100:1 — plus continuous adjustment over entire range.
- Horizontal amplifier operates from 500 KC down to d.c. thus allowing use of extremely slow sweeps; deflection sensitivity is 2.0 volts RMS per inch.
- Peak-to-peak vertical calibration voltages of 0-2, 0-20, and 0-200 can be switch-selected; accuracy is  $\pm 10\%$ .
- Cathode connection, brought out to front panel, allows external blanking and marker connection.
- Direct connection to all deflection plates is provided at rear terminal board.
- Total power requirement is 180 volt-amperes at 115 volts, 60 cycles.
- Tube complement: one 5UP1, four 6AG5, two 6C4, three 6SN7, three 6SH7, two 6BG6, one 6H6, one 5U4G, two 2X2A, two 0A2.

Net Price \$485.00 F.O.B. Winchester, Mass.

### MECHANICAL FEATURES

- Steel cabinet finished in black wrinkle.
- Steel panel finished in black leatherette.
- Copper-plated steel chassis with lacquer finish.
- Controls grouped by function for operating convenience.

- Free-view screen has graduated X- and Y-axis scales.
- Dimensions: 10" wide, 14 $\frac{1}{2}$ " high, 16 $\frac{3}{4}$ " deep.
- Weight: 50 lbs.; shipping weight: 67 lbs.

## BROWNING WWV STANDARD FREQUENCY CALIBRATOR — MODEL RH-10



Specifically designed for receiving transmissions from radio station WWV on either 5 or 10 megacycles and employing these as primary frequency standards. Provisions are made so that secondary standards which are subharmonic relation with WWV transmissions may be accurately compared. Filters are employed so that the 440 or 600 cycle modulation may also be used as primary standards.

### ELECTRICAL FEATURES

- Pre-tuned for 5 and 10 megacycles per second reception of radio station WWV. Other frequency may be selected by switch. On special order, pre-tuned frequencies of 2.5 and 5, or 10 and 15 megacycles per second may be substituted.
- Sensitivity better than  $\frac{1}{2}$  microvolt on any band. Antenna

input impedance is high to permit use of single wire antenna. Tuned doublet may be used if desired.

- Selectivity 10 db down at 5.0 KC off resonance.
- Excellent image rejection minimizes interference. Rejection ratio is more than 50 db.
- Front panel provisions are made for coupling secondary standard or other RF sources and comparing their fundamentals or harmonics with WWV transmission.
- Cathode ray audio indicator permits comparison between RF source and WWV transmission within 1/10 cycle per second using zero beat method.
- A dual filter system allows the selection at will of either the 440 or 600 cycle modulation of WWV. Either may be employed as a primary frequency standard. Output voltage adjustable from 0 to 5 volts.
- Voltage supplied to stable local oscillator is regulated to reduce to a minimum frequency drift.
- Panel speaker has a separate control which allows the output to be varied at will.
- 100-125 volts AC operation. 85 volt-amperes input.
- Tube complement: one Type 6S17, three 6SK7, one 6SA7, one 6SN7, one 6J5, one 6SQ7, one OD3/VR-150, one 5Y3, one 6U5.

### MECHANICAL FEATURES

- Either rack panel with dust cover or steel cabinet.
- Aluminum panel is finished in black leatherette with engraved labels.
- Large fluted knobs are provided.
- Panel connectors are standard universal binding posts which will also accommodate banana-type plugs.
- Dimensions: Cabinet Mounting—Height 9", Width 19", Depth 11". Rack Mounting—Height 8 $\frac{3}{4}$ ", Width 19", Depth 10 $\frac{1}{2}$ ".
- Weight: Cabinet Mounting 30 lbs., Shipping Weight 45 lbs. Rack Mounting 25 lbs., Shipping Weight 40 lbs.

Net Price \$258.00 F.O.B. Winchester, Mass.

# MARION ELECTRICAL INSTRUMENT CO.

410 CANAL ST., MANCHESTER, NEW HAMPSHIRE

Export Division  
458 Broadway New York 13, U.S.A.  
Cables MORHANEX

In Canada:  
The Astral Electric Company  
44 Danforth Road, Toronto, Ontario

**MARION MEANS THE MOST IN METERS**

## MARION RUGGEDIZED METERS

**HERMETICALLY SEALED**



New Marion ruggedized meters are an especially accurate and sensitive means for electrical measurement, even under extreme conditions of shock, vibration, mechanical stress and strain, weather conditions, and climate.



Ruggedized meters offer new freedom of application. They give faster response time, more sustained accuracy, lower bearing friction and longer life.

Ruggedized instruments meet the dimensional requirements of JAN I-6 and are completely interchangeable with existing 2½" and 3½" types. They are manufactured in standard 1½", 2½", and 3½" sizes.

When you want the finest in electrical instruments you can depend upon these new Marion ruggedized meters.



### RANGES DC INSTRUMENTS

<b>DC MICROAMPERES</b>	<b>DC MILLIAMPERES</b>	
0-30	0-1	0-50
0-50	0-1.5	0-100
0-100	0-3	0-200
0-200	0-5	0-250
0-500	0-10	0-500
0-800	0-15	0-800
	0-25	
<b>DC MILLIVOLTS</b>	<b>DC VOLTS</b>	
0-15	0-1.5	0-25
0-25	0-3	0-50
0-50	0-5	0-150
0-100	0-10	0-250
	0-15	0-500

### AC INSTRUMENTS

0-5 Volts AC	0-150 Volts AC
0-15 Volts AC	0-250 Volts AC
0-50 Volts AC	0-500 Volts AC



SEND FOR YOUR COPY OF THIS FREE BOOKLET WHICH DESCRIBES MARION RUGGEDIZED INSTRUMENTS IN DETAIL.



**marion meters**

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### MARION MEANS THE MOST IN METERS

## MARION HERMETICALLY SEALED METERS

**SEALED LIKE A VACUUM TUBE  
FOR GUARANTEED PERFORMANCE**

Magnetically shielded. 2½" x 3½". Dustproof and moistureproof. Unaffected by heat, cold, humidity. Made to JAN specifications, giving peak performance with critical accuracy. Interchangeable round and square colored flanges for different panel needs. One year unconditional guarantee on materials and workmanship. Extra guarantee for replacement of burned out or abused hermetically sealed meter. (On flat fee basis, \$1.50 for 200 microamps upward; \$2.50 if more sensitive than 200 microamps.)



HM3



HM2

### R A N G E S DC INSTRUMENTS

DC MICROAMPERES	DC MILLIAMPERES	DC MILLIVOLTS	DC VOLTS
0-30	0-1	0-50	0-15
0-50	0-1.5	0-100	0-25
0-100	0-3	0-200	0-3
0-200	0-5	0-250	0-50
0-500	0-10	0-500	0-100
0-800	0-15	0-800	0-15
	0-25		0-250
			0-500

### AC INSTRUMENTS

0-5 Volts AC	0-150 Volts AC
0-15 Volts AC	0-250 Volts AC
0-50 Volts AC	0-500 Volts AC



### ADVANTAGES

- Speeds soldering operations by generating heat within the work in localized area.
- Improves quality by producing cleaner work. Avoids oxidation and scaling.
- Prevents damage to surface finish. This is important in glass-to-metal applications.
- Permits soldering of an entire seam or several jig-located parts at one time.
- Provides complete control, timing or duplication of soldering processes.
- Prevents mistakes and reduces rejects.
- Provides local heat for otherwise inaccessible parts.
- Gives expert results with inexperienced operators.
- Saves time, money, effort. Draws only 775 watts and then only at full load. Only 100 watts are used on standby.
- Practically free from maintenance. No moving parts to wear out. Uses only low-priced, easily replaceable tubes. Has high safety factor.
- Offers less hazard but does a neater, cleaner, faster job. No danger of sparking or RF burns from output terminal or work coils.

### MARION "4 FOR 1" FEATURE

Interchangeable Round and Square Colored Flanges . . . one instrument can thus fill four different needs:

1. ROUND



2. ROUND FOR STEEL PANEL



3. RECTANGULAR



4. RECTANGULAR FOR STEEL PANEL



## MARION PORTABLE BENCH TYPE INDUCTION SOLDERING UNIT

COMPACT . . . ADAPTABLE . . . EFFICIENT  
ECONOMICAL . . . SAFE . . . EASY TO USE

### FOR QUANTITY PRODUCTION

Use this low-cost, low-powered portable Marion Induction Heating Unit wherever production soldering of small metal parts and assemblies is required. It cuts costs by minimizing time, reducing labor, improving quality and eliminating the need for a high degree of skill. The unit has made a place for itself in the field of Radio, Electronics, Jewelry, Watches, Electrical Fixture Components, Toys, Automotive Parts, Household Fixtures and other fabrication applications requiring Small Part Assemblies.

### FOR GLASS-TO-METAL SOLDERING

With the Marion Portable Bench-Type Induction Unit you can do glass-to-metal soldering on Resistors, Relays, Photo Cells, Meters, Capacitors, etc. It makes true hermetic sealing possible right in your own plant. Also, it is ideal for terminal, magnet and bearing assembly. It gives machinelike uniformity to a normally inexact operation.

### SPECIFICATIONS

Power Supply: 115 volts, 60 cycle.  
Size: 15¾" x 21½" x 15".  
Mounting: Standard relay rack cabinet.  
Weight: 150 pounds.  
Power: 775 watts at full power output, 100 watts standby.  
The entire unit is rigidly assembled and mounted to prevent arc-over and failure of components.



## marion meters

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**MARION MEANS THE MOST IN METERS**

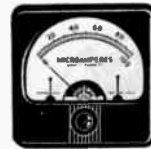
## MARION STANDARD INSTRUMENTS

### SERIES 52

Space saver, yet has superior damping characteristics. 2 1/2" JAN Spec. round case (52N). Also available in standard 2 1/2" square (Model 52S) or with narrow flange brass case for R.F. Shielding (Model 52RM). Dependable, extra strong — has well-aged Alnico magnet and heavy flanged construction. Popular for pocket test, portable radio, medical equipment and general electrical service where size and dependability count.



52N



52S



52RM

### SERIES 53

Standard commercial 3 1/2" rectangular type (53SN). Also available in 3 1/2" JAN Spec., round case (53RN). All Alnico construction. Excellent scale distribution characteristics. Ideal for portable test equipment and general electronic equipment application.



53SN



53RN

### SERIES 55



Large, 4 1/2" x 4 1/2". Gives real microamp readability on 100° scale. Alnico V magnets for sensitive range; heavy Alnico for standard ranges. Extreme accuracy assured. Designed for permanent and portable test equipment.

### SERIES 56



New 6 1/2" x 5 1/4" bakelite cased meter. Easy reading at a distance. Large open face has 100° scale in 5 1/2" arc. Room for multirange scale if needed. Milliamp ranges are Alnico II constructed, Alnico V for microamps. Strong, accurate, efficient, dependable.

### SERIES 57S

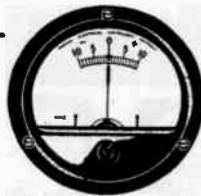


Superb milliammeter — more than a mere overgrown 3 incher. 8 1/2" x 7" open face, extra long scale. Enlarged pole shoes — higher torque movement — higher damping factor. Accurate within 1%. Used in large vacuum tube voltmeters, multimeters and production testing.

### SERIES MC1



Fan shaped, switchboard type instrument accurate to 1% (to 0.5% on special order). Rugged — shatterproof glass window and magnetic shielding. Standard or mirror scales. Popular for telephone switchboard and test equipment applications.



### NULL INDICATORS

Marion Null Indicators are extremely sensitive shaded pole piece D'Arsonval type galvanometers. They are used primarily as bridge and potentiometer balance indicators and in any application where an instrument with very high sensitivity about the zero or balance point is desired. We particularly recommend Types HM2 and HM3 because they are hermetically sealed instruments which completely shield the galvanometers from the effects of moisture and dirt, and external factors. Ideal for use in discriminator alignment of FM receivers and as general laboratory balance indicators.

### RANGES—For The Models Illustrated

DC MICROAMPERES	DC MILLIAMPERES	DC AMPERES	DC MILLIVOLTS	DC VOLTS	AC VOLTS
0-20	0-1	0-250	0-15	0-1.5	0-5
0-30	0-1.5	0-250	0-25	0-3	0-15
0-50	0-3	0-800	0-50	0-5	0-50
0-100	0-5		0-100	0-10	0-150
0-200	0-10			0-15	0-250
0-500	0-15			0-25	0-500
0-800	0-25			0-50	
	0-50			0-150	
	0-100	contained		0-250	
	0-200	Shunts		0-500	

AVAILABLE IN ZERO CENTER AND OTHER RANGES ON SPECIAL ORDER



**marion meters**



# MARION ELECTRICAL INSTRUMENT CO.

410 CANAL ST., MANCHESTER, NEW HAMPSHIRE

Export Division  
458 Broadway New York 13, U.S.A.  
Cables MORHANEX

In Canada:  
The Astral Electric Company  
44 Danforth Road, Toronto, Ontario

**MARION MEANS THE MOST IN METERS**

## MARION TEST EQUIPMENT



### MARION MULTI-RANGE METERTESTER

With self-contained power supply and control equipment for operation on 110 volts, AC, 60 cycles . . . for production testing, and calibration of DC instruments. The MARION METERTESTER is designed with many operational features which will definitely improve the production rates of any meter inspection department. Moreover, its accuracy is such that it may be used for checking purposes in any department and all laboratories employing instruments. It may also be used as a precise source of DC current and voltage. Overall accuracy is better than  $\frac{1}{2}$  of 1%. Basic sensitivity of the Mirror Scale Standard Instrument is 10 milliamperes. The complete unit is housed in a hand-rubbed, solid walnut carrying case.

For use in any department and all laboratories where instruments are employed and their performance must be carefully checked.

With self-contained power supply and control equipment for operation on 110 volts, AC, 60 cycles . . . for production testing and calibration of DC instruments. No additional accessories are required. Merely connect the two clips to the instrument under test, and proceed to analyze its accuracy and general performance.

#### INCLUDES . . .

- Regulated Power Supply.
- Stepless Vacuum Tube Voltage Control.
- Large  $8\frac{1}{2}$ " Mirror Scale Standard Instrument, Hand Calibrated.
- Decade of .1% Accurate Manganin Wire Wound Resistors.

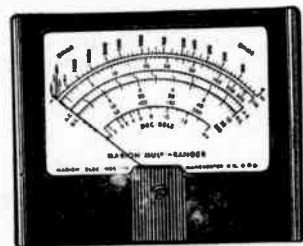
#### Ranges of MeterTester

0-25 UA 0-800 UA  
0-50 UA 0-1 MA  
0-100 UA 0-5 MA  
0-200 UA 0-10 MA  
0-400 UA 0-100 Volts  
0-500 UA

## BUILD YOUR OWN TEST EQUIPMENT

with the **MARION MULTI-RANGER METER**  
**ACCURATE DURABLE DEPENDABLE**  
**A GREAT VARIETY OF SIZES**

Model 57S  
List \$20.00



Model 53SN  
List \$12.00



Model 55  
List \$15.00

When it comes to TEST EQUIPMENT build your own with Marion Multi-Ranger Meters. They will solve your problem of finding reasonably priced instruments with the critical accuracy you demand for test equipment or other auxiliary equipment with multiple functions.

These Multi-Ranger Meters permit you to assemble a highly accurate instrument for use as a voltmeter, milliammeter, high and low resistance ohmmeter, AC voltmeter and decibel meter. — Build As Many Ranges As You Desire.

All instruments use Alnico Magnets, have full 100° three-color scales, feature the new, tough Marion "Bulldozer" moving system that insures long life under severe operating conditions plus the highest degree of accuracy.

#### MARION RESISTOR KIT LOW-PRICED! VERSATILE!

Contains: 18 Resistors Ranging from .4 Ohms to 750,000 Ohms. A Schematic Diagram for Constructing Your Own Test Equipment. It's easy to construct accurate, useful, versatile test equipment with the Marion Resistor Kit, used in conjunction with Marion Multi-Ranger Instruments.  
List \$12.50

#### SCALE RANGES POSSIBLE WITH STANDARD RESISTOR KIT

VOLTS AC-DC  
0-10 Volts 0-50 Volts 0-250 Volts 0-1000 Volts  
MILLIAMPERES  
0-1 MA 0-10 MA 0-50 MA 0-500 MA  
OHMS  
0-500 Ohms 0-100 M 0-10 MEG 0-1 MEG  
DECIBELS  
-10 — +14 decibels +18 — +42 decibels  
+ 4 — +28 decibels +30 — +54 decibels  
ALSO AVAILABLE WITH VTVM SCALES

M·E·I

marion meters



## WHEATSTONE BRIDGE

● A carefully engineered bridge made for all around use in lab., plant, or field. Both models contain own 4½-volt battery power supply and galvanometer. Provision for external batteries and galvanometer if desired. Both models have ratio dial settings of .001, .01, .1, 1, 10, 100, and 1000 as well as built-in resistance standards of 1, 10, 100, and 1000-ohm decades. Ratios are guaranteed to .05% tolerance. Resistance dial resistors to .1%. Self-cleaning, four-leaf phosphor bronze wiper switches with detent mechanism mounted below panel. Galvanometer of well-known moving-coil type. Separate binding posts for use of external galvanometer if desired, and for use of bridge as resistance decade. Hardwood case with removable cover. 9¼" x 7½" x 6¼" h. Wt. 9¼ lbs. net; 12¼ lbs. shipping.

**MODEL RN-1.** Standard Portable Wheatstone Bridge, complete with batteries..... **Net Price \$110.00**

**MODEL RN-2.** Standard Portable Wheatstone Bridge with Murray & Varley Loops..... **Net Price \$125.00**

## MEGOHM METER

● For high-speed testing of condenser leakage resistance, insulation resistance and insulation measurements in production and inspection of components. Terminals for charging capacitors prior to test. Self-contained power source up to 200 volts. Arranged for use of external battery voltage supply up to 1000 volts. Internal checking standard to check and adjust calibration. Broad scale meter. Accuracy within ±1% based on full scale current. Range of 1 megohm to 100,000 megohms on four multiplier ranges of 1, 10, 100, and 1000. Highest range can be extended to 500,000 megohms using external 1000 v. supply. Hardwood case. Sloping bakelite panel designed for production use. 15" x 8" x 10" h. Wt. 19 lbs. net; 23 lbs. shipping.



**MODEL L-2A.** Megohm Meter with tubes..... **Net Price \$145.00**

**MODEL L-4.** Megohm Meter having 200 volt DC and 500 volt DC measuring voltage..... **Net Price \$195.00**

**MODEL L-6.** Megohm Meter having continuously variable source voltage 100-600 volts DC and built-in voltmeter to check voltage. **Net Price \$295.00**



## MEGOHM BRIDGE

● A fast, accurate instrument for routine inspection work. May be used by laboratory workers, or production workers. Very simple to operate. "Magic Eye" replaces costly and delicate galvanometer. Operates from AC power line. Self-contained DC source. Accuracy within 5% from 1 to 15 on scale; as close as readable on remainder of scale. Hardwood case with slip-hinge removable cover. 8" x 5¼" x 7" h. Wt. 6¼ lbs. net; 8¼ lbs. shipping.

**MODEL MB-4.** 100 to 100,000 megohms 500 v. D.C. Bridge source, **Net Price \$60.00**

**MODEL MB-6.** 100,000 ohms to 100 megohms; 10 megohms to 10,000 megohms. 250 Volts, D.C. Bridge source..... **Net Price \$60.00**

**MODEL MB-8.** 1 megohm to 1,000 megohms; 100 megohms to 100,000 megohms 500 Volts, D.C. Bridge source..... **Net Price \$75.00**

**MODEL MB-11.** 1 megohm to 1,000 megohms; 10 megohms to 10,000 megohms; 100 megohms to 100,000 megohms..... **Net Price \$120.00**



## VOLTAGE BREAKDOWN TESTER

● A simple, positive, safe and quick means of testing voltage breakdown of materials and components. Step-up transformer accurately controlled by Variac. Continuously variable over entire range, 0 to 4,000 v. DC. For safety, load is limited to 5 milliamperes over full range. Also safety switch if instrument is removed from case. Operates on AC line. Warning light indicates instrument is operative. Voltage breakdown indicated by red light.

**MODEL P-1.** Voltage Breakdown Tester with tubes. 15" x 8" x 10". Hardwood case with fire-grained crackle enamel sloping panel. Wt. 29 lbs. net; 32 lbs. shipping. (Not illustrated) Net Price \$150.00

**MODEL P-2.** Voltage Breakdown Tester with tubes and additional 0 to 3,000 v. AC outlet. 15" x 8" x 10". Wt. 29 lbs. net; 32 lbs. shipping. (Not illustrated) Net Price \$200.00

**MODEL P-3.** Voltage Breakdown Tester with tubes. Upright, crackle enamel finish cabinet of metal. Range 0 to 10,000 v. DC, 0 to 8,000 v. AC. Net Price \$350.00



## RESISTANCE DECADES

● Available in standard models with resistance ranges of .9 to 999,990 ohms total. Accuracy to  $\pm 0.1\%$ . Self-cleaning, four-leaf phosphor bronze wiper switches with detent mechanism mounted below the panel. Hardwood case. Models DR-1 to DR-4, 5 $\frac{3}{4}$ " x 8" x 4" h.; wt. 4 lbs. net; 6 lbs. shipping. Models DR-10 to DR-14, 4 $\frac{1}{2}$ " x 6" x 4" h.; wt. 3 lbs. net; 5 lbs. shipping. Models DR-50 to DR-52, 6 $\frac{1}{8}$ " x 9" x 4 $\frac{1}{4}$ " h.; wt. 5 lbs. net; 7 lbs. shipping.

Model No.	Total Resistance Ohms	Decade Steps	Accuracy	Net Price
DR-1	999,000	9x(1,000 + 10,000 + 100,000)	$\pm 1\%$	\$ 50.00
DR-2	99,900	9x(100 + 1,000 + 10,000)	$\pm 1\%$	50.00
DR-3	9,990	9x(10 + 100 + 1,000)	$\pm 1\%$	45.00
DR-4	999	9x(1 + 10 + 100)	$\pm 1\%$	44.00
DR-10	.9	9x.1	$\pm 1\%$	20.00
DR-11	9	9x1	$\pm 1\%$	20.00
DR-12	90	9x10	$\pm 1\%$	20.00
DR-13	900	9x100	$\pm 1\%$	20.00
DR-14	9,000	9x1,000	$\pm 1\%$	22.00
DR-50	9,999.9	9x(.1 + 1 + 10 + 100 + 1,000)	$\pm 1\%$	65.00
DR-51	99,999	9x(1 + 10 + 100 + 1,000 + 10,000)	$\pm 1\%$	70.00
DR-52	999,990	9x(10 + 100 + 1,000 + 10,000 + 100,000)	$\pm 1\%$	100.00

## CAPACITANCE DECADES

● Instrument calibrated directly in capacitance so that reading from left to right, the dial settings will give the exact value in microfarads. Progressive adjustment in .01, .001, or .001 mfd. steps depending on model. .001 to 11.1 mfd. can be obtained by group assembly. All units employ paper or mica capacitors of highest quality and stability. Enclosed in hardwood case. DK-3, DK-4, DK-10 and DK-2A, 8" x 5 $\frac{1}{2}$ " x 7 $\frac{1}{4}$ " H.; wt. 8 lbs.; 12 lbs. shipping. DK-11, 11" x 8" x 7 $\frac{1}{4}$ " H.; wt. 10 lbs. net; 12 lbs. shipping.

Model	Capacitance Mfd. Steps	Accuracy	Dielectric Section	Peak Volts	P.F.	Net Price
DK-3	11.1 in .01	1%	.01 Mica	400 DC	1%	\$ 50.00
			.1 paper	150 DC		
			1.0 paper	150 DC		
DK-4	1.11 in .001	1%	.001 mica	400 DC	.2%	50.00
			.01 mica	400 DC	.2%	
			.1 paper	150 DC	1%	
DK-2A	1.11 in .001	1%	Mica	500 AC	.2%	125.00
			throughout	60 cycle		
DK-10	.111 in .0001	.5%	Mica	700 DC		100.00
			or 10 mmfd. throughout	500 AC	1%	
				60 cycle		
DK-11	11.1 in .01	.5%	.01 Mica	500 AC	.2%	125.00
		.5%	.1 mica	60 cycle		
		1%	1.0 paper	700 DC		
				150 DC	1%	



# SUPERIOR TEST EQUIPMENT

## The New Model TV-10 TUBE TESTER



**SPECIFICATIONS:** ★ Tests all tubes including 4, 5, 6, 7, Octal, Lock-in, Peanut, Bantam, Hearing-aid, Thyratron, Miniatures, Sub-Miniatures, Novals, etc. Will also test Pilot Lights. ★ Tests by the well-established emission method for tube quality, directly read on the scale of the meter. ★ Tests for "shorts" and "leakages" up to 5 Megohms. ★ Uses the new self-cleaning Lever Action Switches for individual element testing. Because all elements are numbered according to pin-number in the RMA base numbering system, the user can instantly identify which element is under test. Tubes having tapped filaments and tubes with filaments terminating in more than one pin are truly tested with the Model TV-10 as any of the pins may be placed in the neutral position when necessary. ★ The Model TV-10 does not use any combination type socket. Instead individual sockets are used for each type of tube. Thus it is impossible to damage a tube by inserting it in the wrong socket. ★ Free-moving built-in roll chart provides complete data for all tubes. ★ Newly designed Line Voltage Control compensates for variation of any line voltage between 105 Volts and 130 Volts.

The Model TV-10 operates on 105-130 Volts, 60 Cycles A.C. Comes housed in a beautiful hand-rubbed oak cabinet complete with portable cover. Size: 6" x 11½" x 12". Shipping Weight: 14 lbs.

**\$39<sup>50</sup>**  
NET

## The New Model TV-20

### A COMBINATION 20,000 OHMS PER VOLT MULTI-METER and TELEVISION KILOVOLT METER

The Model TV-20 was designed to provide all the multi-meter measurement requirements of A.M., F.M. and Television. Unlike other recent models, which are actually standard V.O.M.'s converted to test the new Television Voltages, the Model TV-20 is a completely new unit. It provides the sensitivity, ranges and accessories which are needed to service F.M. and Television in addition to A.M. Radio.



#### SPECIFICATIONS

- 9 D.C. VOLTAGE RANGES: (At 20,000 ohms per Volt) — 0-2.5/10/50/100/250/500/1,000/5,000/50,000 Volts.
- 8 A.C. VOLTAGE RANGES: (At 1,000 ohms per Volt) — 0-2.5/10/50/100/250/500/1,000/5,000 Volts.
- 5 D.C. CURRENT RANGES: 0-50 Microamperes; 0-5/50/500 Milliampers; 0-5 Amperes.
- 4 RESISTANCE RANGES: 0-2,000/20,000 ohms; 0-2/20 Meg.
- 7 D.B. RANGES: (All D.B. ranges based on Odb = 1 Mv. into a 600-ohm line)
 

— 4 to + 10 db	+ 36 to + 50 db
+ 8 to + 22 db	+ 42 to + 56 db
+ 22 to + 36 db	+ 48 to + 62 db
+ 28 to + 42 db	
- 7 OUTPUT VOLTAGE RANGES: 0 to 2.5/10/50/100/250/500/1,000 Volts.

**ADDED FEATURE:** The Model TV-20 includes an Ultra High Frequency Voltmeter Probe. When plugged into the Model TV-20, the V. H. Probe converts the unit into a Negative Peak-Reading H. F. Voltmeter which will measure gain and loss in all circuits including F.M. and T.V.

The Model TV-20 operates on self-contained batteries. Comes housed in beautiful hand-rubbed oak cabinet complete with portable cover, Built-in High Voltage Probe, H. F. Probe, Test Leads and all operating instructions. Size: 4½" x 10¼" x 11½". Shipping Weight: 10 lbs.

**\$39<sup>95</sup>**  
NET

## The New Model TV-30 TELEVISION SIGNAL GENERATOR

Enables Alignment of Television I. F. and Front Ends Without the Use of an Oscilloscope!

**FEATURES:** ★ Built-in modulator may be used to modulate the R.F. Frequency also to localize the cause of trouble in the audio circuits of T.V. Receivers. ★ Double shielding of oscillatory circuit assures stability and reduces radiation to absolute minimum. ★ Provision made for external modulation by A.F. or R.F. source to provide frequency modulation. ★ All I.F. frequencies and 2 to 13 channel frequencies are calibrated direct in Megacycles on the Vernier dial. Markers for the Video and Audio carriers within their respective channels are also calibrated on the dial. ★ Linear calibrations throughout are achieved by the use of a Straight Line Frequency Variable Condenser together with a permeability trimmed coil. ★ Stability assured by cathode follower buffer tube and double shielding of component parts.

**SPECIFICATIONS:** FREQUENCY RANGE: 4 Bands—No switching. 18-32 Mc.; 35-65 Mc.; 54-98 Mc.; 150-250 Mc. AUDIO MODULATING FREQUENCY: 400 cycles (Sine Wave). ATTENUATOR: 4-position, ladder type with constant impedance control for fine adjustment. TUBES USED: 6C4 as Cathode follower and modulated buffer; 6C4 as R.F. Oscillator; 6SN7 as Audio Oscillator and power rectifier.

Model TV-30 comes complete with shielded co-axial lead and all operating instructions. Measures 6" x 7" x 9". Shipping Weight: 10 lbs.

**\$29<sup>95</sup>**  
NET



Manufactured by

**SUPERIOR INSTRUMENTS CO.**

# SUPERIOR TEST EQUIPMENT



## The new model 670 **SUPER-METER**

A COMBINATION VOLT-OHM MILLIAMMETER PLUS CAPACITY REACTANCE INDUCTANCE AND DECIBEL MEASUREMENTS

### SPECIFICATIONS:

D.C. VOLTS: 0 to 7.5/15/75/150/750/1,500/7,500 Volts  
 A.C. VOLTS: 0 to 15/30/150/300/1,500/3,000 Volts  
 OUTPUT VOLTS: 0 to 15/30/150/300/1,500/3,000 Volts  
 D.C. CURRENT: 0 to 1.5/15/150 Ma. 0 to 1.5 Amperes  
 RESISTANCE: 0 to 500/100,000 Ohms 0 to 10 Megohms  
 CAPACITY: .001 to .2 Mfd. .1 to 4 Mfd. (Quality test for electrolytics)  
 REACTANCE: 700 to 27,000 Ohms 13,000 Ohms to 3 Megohms

INDUCTANCE: 1.75 to 70 Henries 35 to 8,000 Henries  
 DECIBELS: -10 to +18 +10 to +38 +30 to +58

### ADDED FEATURE:

The Model 670 includes a special GOOD-BAD scale for checking the quality of electrolytic condensers at a test potential of 150 Volts.

The Model 670 comes housed in a rugged, crackle-finished steel cabinet complete with test leads and operating instructions. Size 5 1/2" x 7 1/2" x 3".

**\$2840**  
NET

## The new model 770 AN ACCURATE POCKET-SIZE **VOLT-OHM MILLIAMMETER** (SENSITIVITY: 1000 OHMS PER VOLT)



### FEATURES

- ★ Compact—measures 3 1/8" x 5 7/8" x 2 1/4".
- ★ Uses latest design 2% accurate 1 Mil. D'Arsonval type meter.
- ★ Same zero adjustment holds for both resistance ranges. It is not necessary to readjust when switching from one resistance range to another. This is an important time-saving feature never before included in a V.O.M. in this price range.
- ★ Housed in round-cornered, molded case.
- ★ Beautiful black etched panel. Depressed letters filled with permanent white, insures long-life even with constant use.

The Model 770 comes complete with self-contained batteries, test leads and all operating instructions.

### SPECIFICATIONS

- 6 A.C. VOLTAGE RANGES:  
0—15/30/150/300/1500/3000 VOLTS
- 6 D.C. VOLTAGE RANGES:  
0—7.5/15/75/150/750/1500 VOLTS
- 4 D.C. CURRENT RANGES:  
0—1.5/15/150 MA. 0—1.5 AMPS.
- 2 RESISTANCE RANGES:  
0—500 OHMS 0—1 MEGOHM

**\$1390**  
NET

## The new model CA-12 **SIGNAL TRACER**

THE WELL KNOWN MODEL CA-12 IS THE ONLY SIGNAL TRACER IN THE LOW PRICE RANGE INCLUDING BOTH METER AND SPEAKER!!!



### SPECIFICATIONS

- ★ Comparative Intensity of the signal is read directly on the meter—quality of the signal is heard in the speaker.
- ★ Simple to Operate—only one connecting cable—no tuning controls.
- ★ Highly Sensitive—uses an improved vacuum-tube voltmeter circuit.
- ★ Tube and Resistor Capacity Network are built into the detector probe.
- ★ Built-In High Gain Amplifier—Alnico V Speaker.
- ★ Completely Portable—weighs 8 pounds—measures 5 1/2" x 6 1/2" x 9".

MODEL CA-12 comes complete with all leads and operating instructions.

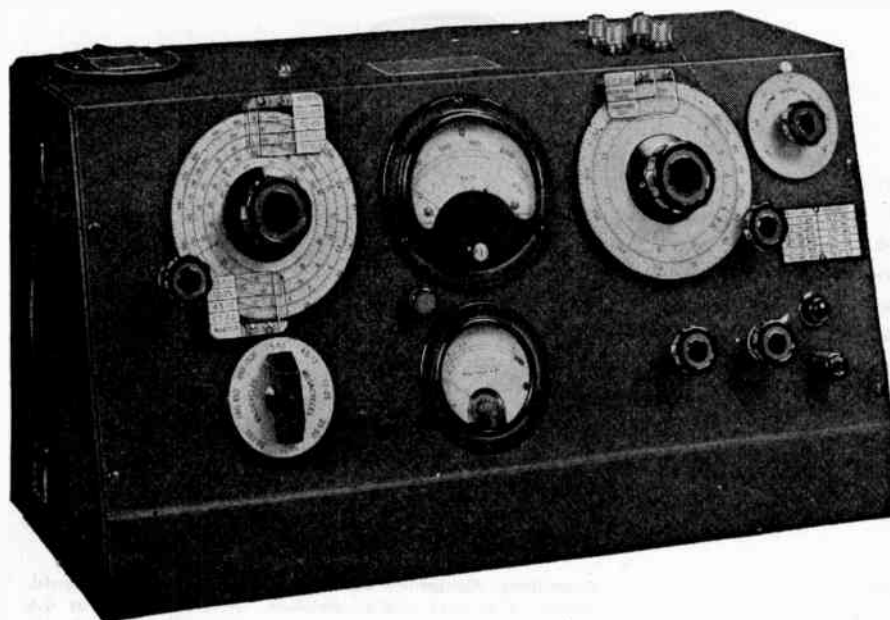
**\$2995**  
NET



Manufactured by

**SUPERIOR INSTRUMENTS CO.**

PRECISION INSTRUMENTS  
FOR THE RADIO AND ELECTRONIC INDUSTRY



**Q-METER**  
TYPE 160-A

Radio frequency circuit design often requires the accurate measurement of Q, inductance, and capacitance values. For this application, the 160-A Q-Meter has become the universal choice of radio and electronic engineers throughout the country.

Each component part and assembly used in the manufacture of this instrument is designed with the utmost care and exactness. Circuit tolerances are held to values attainable only in custom built instruments.

The 160-A Q-Meter is designed specifically for the accurate and rapid measurement of Q, inductance, and capacitance. The basic method of measurement consists of measuring the voltage developed across a variable air capacitor connected as an element in a series resonant circuit. Essentially the Q-Meter is comprised of an 8 range RF oscillator, a Q measuring circuit with a main and vernier section tuning condenser, a vacuum tube voltmeter of special design which reads the voltage across the tuning condenser, and a voltage injection circuit which applies an accurately known voltage to the terminals of the series resonant circuit. In operation the Q circuit is resonated by means of the variable Q tuning capacitor and the voltage developed across this capacitor is indicated by means of the vacuum tube voltmeter which is calibrated directly in terms of Q. This method of measuring Q is simple, accurate, and requires only a single operation—resonating the circuit—to measure Q. Variations of this basic method of measurement are employed to determine effective inductance and capacitance as well as the dielectric properties of insulating materials

**SPECIFICATIONS**

**Oscillator Frequency Range:** Continuously variable from 50 kc. to 75 mc. in eight self-contained ranges. (In conjunction with an external oscillator the frequency range of the Type 160-A Q-Meter may be extended from 50 kc. to 1 kc. for coil measurements).

**Oscillator Frequency Accuracy:** Generally better than  $\pm 1\%$ , except the 50-75 mc. range which is approximately  $\pm 3\%$ .  
**Range of Q Measurements:** The Q voltmeter is calibrated directly

in Q, 20-250. The "Multiply-Q-By" meter, which measures the oscillator voltage injected in the Q measuring circuit, is calibrated from x1 to x2 and also at x2.5. The reading of the Q voltmeter scale is multiplied by the setting of the "Multiply-Q-By" meter. Hence, the total range of circuit Q measurements is from 20 to 625. Condensers, dielectrics, etc., which are measured by placing these in parallel with the measuring circuit, may have Q's as high as 5,000.

**Accuracy of Q Measurements:** The accuracy of the direct reading measurement of circuit Q (for Q voltmeter readings between Q=50 and Q=250) is approximately 5% for all frequencies up to the region of 30 mc. and decreases with increasing frequency. Correction may be made for the error above 30 mc. as it is principally a frequency effect. The accuracy of the measurement of condensers, dielectrics, etc. is generally better than 10% for Q's below 5,000 and up to 30 mc.

**Capacitance Calibration Range:** Main tuning condenser 30-450 mmf. calibrated in 1 mmf. divisions from 30 to 100 mmf. and in 5 mmf. divisions from 100 to 450 mmf. Vernier condenser, plus 3 mmf., zero, minus 3 mmf., calibrated in 0.1 mmf. divisions.

**Accuracy of Capacitance Calibration:** Main tuning condenser, generally better than 1% or 1 mmf., whichever is the greater. Vernier tuning condenser,  $\pm 0.1$  mmf. The internal inductance of the tuning condenser at the binding posts is approximately .015 microhenry.

**Voltmeter:** The Q voltmeter is also calibrated in volts. A specially calibrated tube, Type BRC 105-A tube, is used. Replacements may be made without recalibration.

**Power Supply:** 105-120 volts, 50-60 cycles. Also 210-240 volts, 50-60 cycles. Power consumption 50 watts.

**Dimensions:** Height 12.5", length 20", depth 8.5".

**Weight:** 25 lbs.

**Price:** \$625.00 F.O.B. Boonton, N. J., U.S.A.



PRECISION  
FOR THE RADIO AND



INSTRUMENTS  
ELECTRONIC INDUSTRY

## Q-METER

TYPE 170-A

The Type 170-A Q-Meter utilizes the same general operating principles and characteristics as the Type 160-A Q-Meter, but incorporates such structural modifications and design refinements as are required for accurate performance at the higher frequencies. This instrument is intended to supplement the low frequency Q-Meter by extending the range of measurement up to 200 mc.



### SPECIFICATIONS

**Oscillator Frequency Range:** Continuously variable from 30 mc. to 200 mc. in three ranges—Calibration accuracy  $\pm 1\%$ .

**Range of Q Measurements:** The Q voltmeter is calibrated directly in circuit Q, from 80 to 300. The "Multiply-Q-by" meter is calibrated from  $\times 1$  to  $\times 4$ , hence the range of circuit Q measurements is from 80 to 1200.

**Accuracy of Q Measurements:** The accuracy of the direct reading measurement of circuit Q is  $\pm 10\%$  up to 100 megacycles and decreases with increasing frequency.

**Capacitance Calibration of Q Capacitor:** Range 11-60 mmfd. calibrated in unit mmfd. divisions. Accuracy: 1% or 0.5 mmfd., whichever is greater. Micrometer dial divided into 100 divisions.

**Power Supply:** 110-120 volts, 50-60 cycles. Also 220-240 volts, 50-60 cycles. Power consumption 50 watts.  
**Dimensions:** 17" x 10½" x 8¾".

**Weight:** 21 lbs.

**Price:** \$550.00, F.O.B. Boonton, N. J., U.S.A.

## QX CHECKER TYPE 110-A

The QX-Checker is a production type test instrument specifically designed to compare reactance and relative Q of RF components with approved standards. The two factors, reactance and relative Q, are separately indicated, one on a meter and the other on a condenser dial, so that the deviation of either from established tolerances is immediately shown. Built to laboratory standards, the QX-Checker is a sturdy, fool-proof instrument for use in production work by factory personnel.

### SPECIFICATIONS

**Oscillator Frequency Range:** 100 kc. to 25 mc. in 6 ranges using accessory plug-in coils (two coils furnished with each instrument).

**Accuracy of Coil Checks:** Coils may be checked against a standard to within about 0.2% with inductance values of 10 microhenries to 10 millihenries and Q of 100 or greater.



**Capacitance Range:** Capacitance values ranging between approximately 2-1000 mmf. may be checked against a standard to an accuracy of a few tenths of one mmf. if the Q of the capacitor is high.

**Power Supply:** 110-125 volts, 50-60 cycles, also 200-250 volts, 50 cycles.

**Dimensions:** Width 12¼", Depth 18", Height 8".

**Weight:** 26 lbs.

**Price:** \$340.00, F.O.B. Boonton, N. J., U.S.A.

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# FM SIGNAL GENERATOR

TYPE 202-B

The type 202-B FM Signal Generator has been developed to meet the needs of engineers engaged in the design of FM and television receivers for operation within the frequency range of from 54 megacycles to 216 megacycles.

This instrument has been proportioned for maximum conservation of laboratory bench space, with frequency dial, modulation and output meters positioned at eyelevel for maximum readability. The unit is finished in grey wrinkle enamel with engraved panel and is supplied complete with tubes and standard output cable.

## SPECIFICATIONS

**RF Range:** Frequencies from 54 mc. to 216 mc. are covered in two ranges, 54-108 mc. and 108-216 mc.

**Main Frequency Dial:** The two RF ranges are calibrated directly in megacycles to an accuracy of within  $\pm 0.5\%$ . The dial is also divided in 24 equal divisions for use with the vernier frequency dial.

**Vernier Frequency Dial:** The vernier frequency dial is divided in 100 divisions and is geared to the main dial through a gear train having a 24:1 ratio. The approximate frequency change per vernier division is 26 kc. on the low range and 52 kc. on the high range.

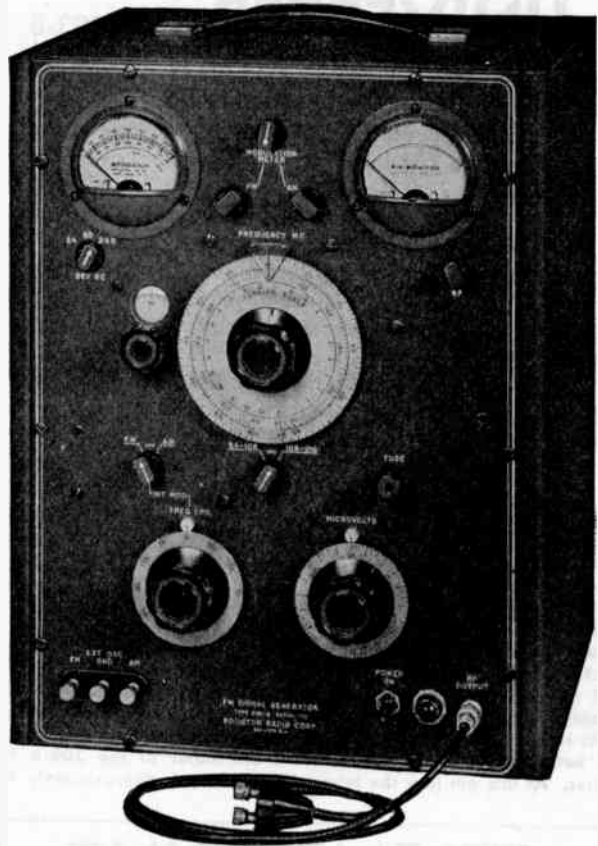
**Frequency Modulation (Deviation):** The FM deviation is continuously variable from zero to 240 kc. The modulation meter is calibrated in three FM ranges (1) zero to 24 kc., (2) zero to 80 kc. and (3) zero to 240 kc. deviation.

**Amplitude Modulation:** The modulation meter is calibrated at 30% and 50% amplitude modulation. AM is continuously variable from zero to 50%.

**Modulation Controls:** Separate potentiometers are provided for continuous control of FM and AM levels.

**Modulating Oscillator:** The internal AF oscillator may be switched to provide either frequency or amplitude modulation; it may also be switched off. External binding posts permit the use of an external AF oscillator for either FM or AM. Both internal and external AF oscillators may be used simultaneously, thus providing either FM or AM at two modulation frequencies simultaneously or simultaneous FM and AM. The internal AF oscillator provides eight fixed frequencies which may be selected by a rotary type switch—50, 100, 400 cycles and 1, 5, 7.5, 10 and 15 kilocycles, accurate to within 5%. The output voltage of the internal AF oscillator is available at the external binding posts for synchronizing or other purposes.

**RF Output Voltage:** The RF output voltage is continuously variable over a range from 0.1 microvolt to 0.2 volts at the terminals of the output cable. The impedance at the RF output jack, looking into the instrument, is 53 ohms resistive. The output cable has a 53 ohm resistance termination at the terminal end hence the output impedance of the unit with cable attached is 26.5 ohms.



**Distortion:** FM distortion at 75 kc. deviation is less than 2% when modulated with the internal AF oscillator or an external AF oscillator having 0.5% distortion or less. At 50% amplitude modulation the distortion is about 5% using the internal AF oscillator and decreases as the modulation percentage is reduced. An external AF oscillator may be employed for amplitude modulation if desired.

**Spurious RF Output:** All spurious RF output voltages are at least 30 db. below the desired fundamental. The RF leakage is very low.

**Fidelity Characteristics:** The deviation sensitivity of the FM modulation system as a function of frequency is constant from dc. to over 10 kc. At 15 kc. the deviation as indicated on the modulation meter is 0.5 db. higher than the true value. The amplitude modulation system is also flat to 10 kc., and departs from nominal by 1.0 db. at 15 kilocycles.

**Power Supply:** The power supply is self-contained in the instrument for use on 60 cycles, 110 volts.

**Accessories:** 203-A Frequency Converter (Frequency range 0.4 mc. to 25 mc.).

**Dimensions:** Height: 17"; Width: 13½"; Depth: 11½".

**Weight:** 35 lbs.

**Price:** \$975.00, F.O.B. Boonton, N. J., U.S.A.

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## UNIVERTER TYPE 203-B

The Type 203-B Univerter, a frequency converter accessory having unity gain, is designed for use with the Type 202-B FM Signal Generator to provide additional frequency coverage of from 0.4 mc. to 25 mc. Since the 202-B FM Signal Generator covers a frequency range from 54 to 216 megacycles, the 203-B Univerter offers a simple means whereby the additional coverage of commonly used intermediate and radio frequencies may be obtained. This instrument also enables the frequency and amplitude modulation features of the 202-B instrument, as well as the attenuator calibration, to be utilized at these lower frequencies without causing any appreciable distortion.

The 203-B Univerter matches the 202-B FM Signal Generator in styling and finish, and is supplied complete with tubes and instruction book.

### SPECIFICATIONS

**RF Range:** The Univerter, in combination with the 202-B FM Signal Generator, covers from 0.4 mc. to 25 mc. (0.1 mc. to 25 mc. with no carrier deviation). The RF voltage at the X1 OUTPUT jack is uniform within  $\pm 1$  db. over the frequency range of the instrument.

**Frequency Increment Dial:** This dial is calibrated in increments of 10 kc. from plus 250 kc. through zero to minus 250 kc.

**RF Output:** The RF output voltage at the X1 panel jack is continuously variable from 0.1 microvolt to 0.1 volt by means of the 202-B Signal Generator attenuator. For 0.2 volt input to the Univerter, the output is approximately 0.18 volt. The impedance at the RF output jack, looking into the instrument is approximately 60 ohms resistive. The RF output voltage at the 2 VOLT MAX. pin jack is uncalibrated but may be controlled from the attenuator of the 202-B FM Signal Generator. At this pin jack the internal impedance is approximately 470 ohms.



**Power Supply:** The 203-B Univerter is designed for use on 50-60 cycles, 115 volts.

**Dimensions:** H: 11 1/2" W: 7 3/8" D: 10 1/2".

**Weight:** 11 lbs.

**Price:** \$300.00, F.O.B. Boonton, N. J., U.S.A.

## TELEMETERING SIGNAL GENERATOR TYPE 202-D

The Type 202-D Signal Generator is a precise and reliable instrument well suited to the specialized requirements of telemetering engineers for rapidly analyzing and evaluating over-all system performance.

### SPECIFICATIONS

**RF Range:** 175-250 megacycles in one range, accurate to  $\pm 0.5\%$ . Main frequency dial also calibrated in 24 equal divisions for use with vernier frequency dial.

**Frequency Modulation (Deviation):** The FM deviation is continuously variable from zero to 240 kc. The modulation meter is calibrated in three FM ranges: (1) 0-24 kc., (2) 0-80 kc., and (3) 0-240 kc. deviation.

**Amplitude Modulation:** Utilizing the internal audio oscillator amplitude modulation at any one of eight audio frequencies between 50 c. and 15 kc. may be obtained over the range of 0-50%, with meter calibration points at 30% and 50%. By means of an external audio oscillator the RF carrier may be amplitude modulated to substantially 100%. A front panel jack is provided which permits direct connection of an external modulating voltage source to the final stage for pulse and square wave modulation.

**RF Output Voltage:** The RF output voltage is continuously variable over a range from 0.1 microvolt to 0.2 volt at the terminals of the output cable. The impedance at the RF output jack, looking into the instrument, is 53 ohms resistive.



**Distortion:** FM: The over-all distortion at 75 kc. is less than 2% and at 240 kc. less than 10%. AM: The distortion present at the RF output for 30% amplitude modulation is less than 3% and for 50% AM less than 6.5. At 100% the distortion is 12% to 15% depending upon the modulating frequency.

**Outside Cabinet Dimensions:** 17" H, 13 1/2" W, 11 1/2" D.

**Weight:** 35 lbs.

**Price:** \$980.00, F.O.B. Boonton, N. J., U.S.A.

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## OMNI RANGE SIGNAL GENERATOR TYPE 211-A

The Type 211-A Signal Generator is specifically designed for the testing and calibrating of omni-range radio receiving equipment. It is also well suited for laboratory and development work where a precision type amplitude modulated R.F. signal source is required.

### SPECIFICATIONS

**Frequency Range:** Master Oscillator: 88-140 megacycles in one range. Vernier frequency dial has 100 divisions and is coupled to the main tuning capacitor through a 120:1 gear drive. Each vernier division is equivalent to a 10 kc. change in frequency.

**Crystal Controlled Frequencies:** Either of two crystals 110.100 mc. and 114.900 mc., accurate to  $\pm 0.0035\%$ , may be selected by a switch for use individually or in combination with the master oscillator to standardize its output frequency.

**Amplitude Modulation Characteristics:** Two amplitude modulation ranges, 0-30% and 0-100%, are provided for use with the internal oscillator or a low distortion external oscillator. Distortion is 5% or less at 95% amplitude modulation.

**Internal Audio Oscillator:** Two modulating frequencies, 400 and 1000 cycles.

**Modulation Amplifier:** The internal modulating amplifier has the following characteristics:

- Uniform response within  $\pm 0.5$  db. 30 cycles to 11 kc.
- Uniform response within  $\pm 0.1$  db. 90 cycles to 150 cycles.
- Uniform response within  $\pm 0.1$  db. 9500 cycles to 10.5 kc.

**Phase Distortion:** (up to 60% amplitude modulation.)

- Less than 0.25 degrees at 30 cycles.
- Less than 10 degrees at 11 kc.

**Audio Test Voltage:** This instrument contains a demodulator or detector



which supplies to front panel terminals a portion of the demodulated carrier.

**Spurious FM:** Less than 1 kc. at 60% AM.

**Output Attenuator:** Single ended piston type, adjustable from 0.2 volt to 0.1 microvolt. Output impedance as seen looking in at terminals of output cable is 26.5 ohms. (Relay Rack not included.)

Price: \$1800.00, F.O.B. Boonton, N. J., U.S.A.

## GLIDE SLOPE TEST SET TYPE 212-A

The Type 212-A Glide Slope Test Set has been developed for use with the Type 211-A VHF Signal Generator to provide additional frequency coverage from 329 mc. to 335 mc. for testing glide slope receivers. Three crystal spot frequencies are also provided for checking the intermediate frequency sections of these receivers.

Basically, the Type 212-A Test Set may be considered as having two separate systems, (A) a unity gain radio frequency converter (or Univerter) which adds 200 megacycles to the input frequency from the 211-A Signal Generator and (B) a crystal controlled I.F. Signal Generator.

### SPECIFICATIONS

#### A—Univerter:

**Frequency Range:** 329 mc. to 335 mc.  
**Maximum Input Signal:** 0.1 volt (0.05 volt modulated to 100%).  
**Input Impedance:** 53 ohms, unbalanced.  
**Output Frequency:** Input Frequency plus (200,000 mc.  $\pm 0.005\%$ ).

**Amplitude:** The output into a 53 ohm load can be set equal to the input signal ( $\pm 1$  db) in the frequency range 329 to 335 mc.  
**RF Monitor Meter:** A center scale type front panel meter indi-



cates the RF output voltage variations when the input is held constant at 0.1 volt.

**Envelope Distortion:** Less than 5% for an 0.05 volt signal modulated 95%.

**Output Impedance:** 53 ohms unbalanced.

#### B—I.F. Generator:

**Output Frequencies:** 20.700 mc.  $\pm .0035\%$ ; 20.400 mc.  $\pm .005\%$ ; 21.000 mc.  $\pm .005\%$ .

**RF Output:** Continuously variable from 1 microvolt to 1 volt across a 53 ohm unbalanced load by means of a piston type attenuator.

**RF Monitor:** Continuous monitoring with the same set-to-line type meter used with the Univerter.

**Amplitude Modulation Capabilities:** A maximum of 30% modulation can be obtained by means of an external signal source capable of developing 2 volts across a 250,000-ohm load, or by means of the self-contained 1000 cycle source.

**Power Requirement:** 105-125 volts, 50-60 cycles, 40 watts.

**Weight:** 27½ lbs.

**Dimensions:** Panel, 19" Wide x 7" High. Depth, 10½" over-all. Unit designed for rack mounting and supplied with dust cover.  
Price: \$875.00, F.O.B. Boonton, N. J., U.S.A.

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# TEKTRONIX, INC.

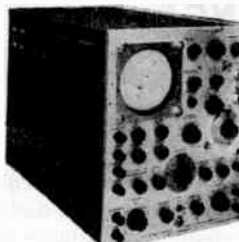
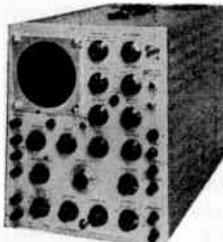
712 S.E. Hawthorne Blvd.  
Portland 14, Oregon

Telephone: EAsT 6197  
Cables: Tektronix

Cathode-Ray  
& Video Test  
Instruments

The Tektronix Type 511-AD Cathode Ray Oscilloscope offers the desirable combination of the following characteristics: 5 cps-10 mc bandwidth; .1  $\mu$ sec/cm-0.01 sec/cm sweeps; trigger sensitivity-pulses as short as .05  $\mu$ sec duration and as low as .5v amplitude; vertical deflection sensitivity from .25 v/cm to 200 v/cm; 5X sweep magnification; voltage calibrator from 0 to 100 v in 3 ranges; .25  $\mu$ sec delay network which can be switched in or out of the vertical amplifier at will. This instrument is extremely valuable for use in the video testing field, where excellent transient response, wide bandpass, and high sweep speeds are mandatory. Weight 50 lbs. Price: Type 511-AD \$845.00; Type 511-A (without delay network) \$795.00.

The Tektronix Type 514-D Oscilloscope offers the high frequency range of the Type 511-A with the additional advantage of direct-coupled vertical amplifier. Specifications: band pass — DC to 10 mc at .3 v/cm, and 5 c to 10 mc at .03 v/cm; .1  $\mu$ sec/cm to .01 sec/cm sweep range; square wave voltage calibrator variable from 0 to 50 v in 6 ranges with  $\pm$  5% accuracy; undistorted deflection of 6 cm ( $\pm$  3 cm) accelerating potential of 3 kv (+ 1.5 kv and -1.5 kv); other specifications similar to those of Type 511-A. The Type 514 admirably meets the requirements of those who do not need the higher writing rate of the Type 513, but require the direct-coupling and high sensitivity. Weight 62 lbs. Price—\$950.00. Less delay network \$900.00.



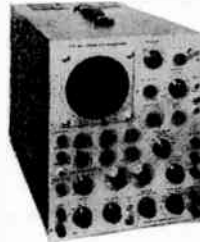
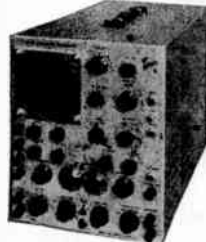
TYPE 511AD OSCILLSCOPE    TYPE 512 OSCILLOSCOPE

### ALL OSCILLOSCOPES FEATURE:

- 5" Cathode Ray Tubes.
- Direct reading sweep dials.
- Single, triggered or recurrent sweeps.
- Sweep speeds accurate to  $\pm$  5% or better.
- Positive or negative internal and external triggering.
- Sweep and + gate available on front panel.
- 5X magnification for any desired 20% of sweep.
- All DC voltages electronically regulated.
- Individually adjusted for optimum transient response.
- RC probes for low capacity, high impedance input.
- Excellent image contrast under high ambient light conditions.
- Electrically welded all aluminum construction — low weight.
- Truly portable — self-contained — 15 1/2" high, 12 1/2" wide, 21 1/2" deep.
- Tektronix quality design and fabrication throughout.

The Tektronix Type 512 Oscilloscope features: balanced, direct-coupled, push-pull amplifiers with sensitivity ranging from 5 mv/cm to 50 v/cm; bandwidth from DC to 2 mc; sweep range from 3  $\mu$ sec/cm to .3 sec/cm; differential input to amplifiers; 5X magnification of any desired 20% of sweep; 1 kc square wave generator voltage calibrator from 0 to 50 v in 9 ranges with  $\pm$  5% accuracy; sweeps of 1.0 sec/cm and 3.0 sec/cm available on order. With its high stability, sensitivity, and accurate calibration of timing and amplitude, the Type 512 has gained exceptional and immediate acceptance in the fields of biophysical and geophysical research, as well as being an indispensable circuit development tool in the hands of the electronic engineer. Weight, 53 lbs. Price \$950.00.

The Tektronix Type 513-D Oscilloscope has the following features: high writing rate CRT with regulated accelerating potential of 12 kv (+ 10 kv and - 2 kv); distributed type video amplifier DC to 20 mc; maximum deflection sensitivity of 30 mv/cm; trigger rate generator with 5 fixed pulse rate frequencies of .2 kc, .5 kc, 1 kc, 2 kc and 5 kc; a 1 kc square wave generator voltage calibrator from 0 to 50 v in 6 ranges with an accuracy of  $\pm$  5%; other specifications similar to those of Type 511-A. This instrument is extremely useful in random pulse work where high writing rate is needed. Weight 70 lbs. Price \$1650.00. Less delay network \$1600.00.



TYPE 514 OSCILLOSCOPE    TYPE 513 OSCILLOSCOPE



TYPE 104A SQUARE-WAVE GENERATOR

### CHARACTERISTICS

- FREQUENCIES: LF 50 cps, 1 kc HF 100 kc, 1 mc
- RISE TIME: LF 3  $\mu$ sec HF .02  $\mu$ sec
- AMPLITUDE: LF 0-50 v in 9 ranges, 5% accuracy, HF 0-5 v
- OUTPUT LOAD: LF 0-20 k HF 0-93 ohms
- PORTABLE

The Type 104A is a low cost generator of precision square waves with four fixed frequencies in the ranges most used to test wide band amplifiers and oscilloscopes. Used in conjunction with any of the above oscilloscopes, the transient response of an amplifier is readily observed. 13 1/2" high, 9" wide, 10 1/2" deep. Weight 18 lbs. Price \$195.00.



TYPE R-500 SCOPE-MOBILE

The Type R-500 provides mobile support for any of the Tektronix oscilloscopes. Features: 20° tilted top; 1 1/2 cu. ft. auxiliary equipment space behind 11" x 15" blank panel; 15" x 15" x 3" drawer; 17" x 24" shelf; 5" rubber-tired wheels; 39" high, 18 1/2" wide, 30" deep, 42 lbs. Price \$97.50.

### CHARACTERISTICS

- FREQUENCY: 25 cps to 1 mc variable
- RISE TIME: .02  $\mu$ sec if load is 93 ohms or less
- AMPLITUDE: 100 v maximum 15 v across 93 ohms
- ACCURACY OF FREQUENCY METER: 3% of full scale
- SYNC VOLTAGES: Output — 5 v Input — 3 v — 50 v



TYPE 105 SQUARE-WAVE GENERATOR

The Type 105 is an extremely versatile precision instrument for checking transient response and bandwidth (25 cps-20 mc) of amplifiers, filters, attenuators, etc. Regulated DC supply, direct reading frequency meter, small size, and other features all combine to make this instrument a necessity for any well equipped laboratory. Weight 35 lbs. Price \$395.00.



TYPE 112 DIRECT-COUPLED AMPLIFIER

- SPECIFICATIONS
- SAME AMPLIFIER as in Type 512
- SELF-CONTAINED regulated supply
- 1 KC CALIBRATOR
- TRIGGER OUTPUT
- MARKER INPUT
- OUTPUT VOLTAGES: 150 v high imp. 75 v 8000 ohm load
- AV. OUTPUT LEVEL: 150 v and gnd.
- WEIGHT 32 lbs. 15-12" high, 6 1/2" wide, 21 1/2" deep.

The Type 112 Amplifier was developed to be used with Tektronix or other oscilloscopes, or in work where accurate measurements and high sensitivity are necessary over a wide range of frequencies to D.C. It will vastly increase the usefulness of any oscilloscope. Price \$495.00.



TYPE 122 PRE-AMPLIFIER

The Type 122 Battery-operated Pre-Amplifier was developed to increase the sensitivity of the Type 512 oscilloscope to 5  $\mu$ v/cm — in the limited bandwidth of .2 cps-20 kc. Low and high frequency bandpass controls. 3 1/4" wide, 9" high, 5 1/2" deep. Weight 3 lbs. Price \$85.00.

### SPECIFICATIONS

- VOLTAGE GAIN: 100
- INPUT IMP: 1 meg — 20  $\mu$ f
- OUTPUT: 1 v — 93 ohms
- BAND PASS: 5 cps — 12 mc.
- FRONT PANEL SUPPLY SOCKET: 6.3 v DC 20-120 v DC
- PORTABLE: Self-contained power supply



TYPE 121 WIDE-BAND PRE-AMPLIFIER

The Type 121 Pre-Amplifier was designed primarily to augment the vertical amplifier of the Type 511-A oscilloscope, providing an overall sensitivity of 2.5 mv/cm, while preserving the bandpass and transient response. May be used with other oscilloscopes or wide band equipment. 5" wide, 10" high, 14" deep. Weight 18 lbs. Price \$265.00.

WRITE FOR CATALOGS    •    ALL PRICES    FOB FACTORY    •    All price revision and design modification privileges reserved.

# STERLING PANEL METERS

## AMMETERS, VOLTMETERS, MILLIAMMETERS

FOR USE ON DIRECT AND ALTERNATING CURRENT

### A COMPLETE MODERN LINE

These improved STERLING Panel Meters while retaining the accuracy, beauty and ruggedness which have always characterized STERLING instruments, show a modern trend in the gracefully unique arrangement of the broader and more clearly defined scales. The meters for alternating current and direct current are perfectly matched and therefore suitable for mounting on the same panel. D.C. meters are of the permanent magnet, iron vane, solenoid type. A.C. meters supplied with hairspring repulsion type movement. This affords positiveness of action and breadth of movement suggestive of those of the D'Arsonval type. The large needle-tipped pointers and wide, clearly marked scale divisions of these panel meters make them easily read.

STERLING Panel Meters may be had in any of the types illustrated.

Special Panel Meters are made to manufacturer's specifications.

ALL STERLING Panel Meters are guaranteed accurate within 5%.

#### Alternating Current Meters

##### A. C. VOLTMETERS

Number	Range	List Price
870	0-4 Volts	\$3.00
871	0-6 Volts	3.00
872	0-10 Volts	3.00
873	0-15 Volts	3.00
874	0-150 Volts High Res.	4.75
875	0-300 Volts	5.75
876	0-600 Volts	6.60
877	0-750 Volts	8.50
878	0-10-140 Volts	4.75
879	0-50 Volts	3.60
910	0-30 Volts	3.00
911	0-75 Volts	3.60
912	0-250 Volts	5.25
913	0-500 Volts	6.60

##### A. C. MILLIAMMETERS

880	0-25 Milliampere	\$3.00
881	0-50 Milliampere	3.00
882	0-100 Milliampere	3.00
883	0-250 Milliampere	3.00
884	0-500 Milliampere	3.00
914	0-300 Milliampere	3.00

##### A. C. AMMETERS

886	0-1 Amperes	\$3.00
887	0-3 Amperes	3.00
888	0-5 Amperes	3.00
889	0-10 Amperes	3.00
890	0-20 Amperes	3.30
891	0-50 Amperes	3.60
892	0-30 Amperes	3.30
893	0-60 Amperes	3.75
894	0-75 Amperes	3.75
895	0-100 Amperes	3.75
915	0-2 Amperes	3.00
916	0-7½ Amperes	3.00
917	0-15 Amperes	3.30
918	0-25 Amperes	3.30
919	0-125 Amperes	3.00

\*Special—Price on Application

##### RESISTANCE METERS

Direct Reading		
901	4.5 Volts, 10,000 Ohms	\$3.00
3 Flashlight cells required.		
902	2 M. A., 9 Volts, 100,000 Ohms	4.40
6 Flashlight cells required.		

#### Direct Current Meters

##### D. C. VOLTMETERS

Number	Range	List Price
801	0-1 Volts	\$1.65
802	0-3 Volts	1.65
803	3-0-3 Volts	1.65
804	0-5 Volts	1.65
805	0-6 Volts	1.65
806	0-8 Volts	1.65
807	0-10 Volts	1.65
808	0-15 Volts	1.65
809	0-25 Volts	1.65
810	0-25 Volts High Res.	3.00
811	0-50 Volts	1.65
812	0-50 Volts High Res.	3.60
823	0-75 Volts	1.75
813	0-100 Volts	1.85
814	0-100 Volts High Res.	3.60
815	0-150 Volts	2.25
816	0-150 Volts High Res.	3.50
817	0-300 Volts	3.50
818	0-500 Volts	5.00
819	0-750 Volts	6.00
820	0-8-160 Volts	3.00

##### D. C. MILLIAMMETERS

835	0-2 Milliampere	\$4.00
836	0-5 Milliampere	2.50
837	0-10 Milliampere	2.20
838	0-15 Milliampere	1.65
839	0-25 Milliampere	1.65
840	0-50 Milliampere	1.65
841	0-100 Milliampere	1.65
842	0-150 Milliampere	1.65
843	0-200 Milliampere	1.65
844	0-300 Milliampere	1.65
845	0-400 Milliampere	1.65
846	0-20-100 Milliampere	2.50
847	0-15-150 Milliampere	2.50
848	0-500 Milliampere	1.65

##### D. C. AMMETERS

855	0-1 Amperes	\$1.65
856	0-3 Amperes	1.65
857	0-5 Amperes	1.65
858	0-10 Amperes	1.65
859	1-0-1 Amperes	1.65
860	3-0-3 Amperes	1.65
861	6-0-6 Amperes	1.65
862	10-0-10 Amperes	1.65
863	20-0-20 Amperes	1.65
864	0-15 Amperes	1.75
865	0-30 Amperes	2.20
866	0-50 Amperes	2.75
867	30-0-30 Amperes	2.20
868	0-20 Amperes	1.85
869	0-40 Amperes	2.75



TYPE 80

Flush case, narrow flange, standard finish black enamel. Circular adjustable back clamp for mounting.

Diameter flange 2½" Diam. case 2". Depth case ¾". Requires hole 2⅜" in Diameter Length terminals ¼"



TYPE 70

Flush case, wide flange, standard finish black enamel. Screw holes in flange for mounting. Diameter flange 2½"

Diam. case 2". Depth case ¾" Requires hole 2⅜" in Diameter



TYPE 68

Flush case, square flange, standard finish black enamel. Screw holes in flange for mounting. Width flange 2½". Dia. case 2⅜". Depth case ¾".

Type 68 square flange case furnished for any range of meter at an additional list price of 40 cents each.

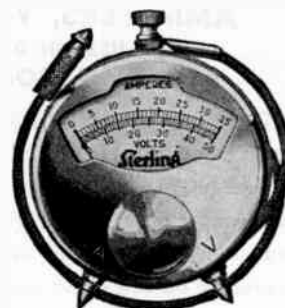
# Sterling

## STERLING POCKET METERS

### STANDARD LINE Direct Current Pocket Ammeters, Voltmeters and Voltammeters for all Purposes



No. 24A Ammeter



No. 45 Voltammeter

STERLING Pocket Meters are useful in all kinds of battery testing, in railroad signal work, and in telephone and low-voltage electrical work generally. They are polarity indicators.

No. 24 Ammeter, for testing No. 6 dry cells. 0-35 ampere scale, 1 ampere divisions. List Price ..... \$1.85

No. 24A Ammeter for testing dry cells including the heavy-duty Ignition type of cell. 0-50 ampere scale, 1 ampere divisions. List Price, \$2.10

- No. 23 Ammeter, for photo-flash dry batteries. 0-20 amp. scale, 1/2 amp. div. List Price, \$2.25
- No. 33 Voltmeter for ordinary single cells and "Flashlight" cells, 0-3 v. scale, 1/10 v. div. List Pr., \$2.10
- No. 34 Voltmeter for "Hot Shot" and Radio batteries. 0-10 volt scale, 1/5 volt div. List Price, \$2.10
- No. 34A Voltmeter for 12 volt batteries. 0-16 volt scale, 1/2 volt divisions. List Price, \$2.30
- No. 34B Voltmeter for ordinary 22½ v. radio "B" batteries. 0-30 v. scale, 1 v. divisions. List Price, \$2.30
- No. 34C Voltmeter for testing ordinary 45 v. radio "B" batteries. 0-50 v. scale, 1 v. div. List Price, \$2.60
- No. 44 Voltammeter for "Hot Shot" and Radio batteries and No. 6 dry cells, 0-35 ampere scale, 1 ampere divisions; 0-10 volt scale, 1/5 volt divisions. List Price, \$2.50
- No. 44A Voltammeter for 12 volt batteries and No. 6 dry cells. 0-35 ampere scale, 1 ampere divisions; 0-16 volt scale, 1/2 volt divisions. List Price, \$2.75
- No. 45 Voltammeter for testing No. 6 dry cells and ordinary 45 volt radio "B" batteries. 0-35 ampere scale, 1 ampere divisions; 0-50 volt scale, 1 volt divisions. List Price, \$3.60
- No. 45A Voltammeter for testing dry cells including the heavy-duty Ignition type and ordinary 45 v. radio "B" batteries. 0-50 amp. scale, 1 amp. div.; 0-50 v. scale, 1 v. div. List Price, \$3.85

Meters 2¼" in diameter and ⅝" thick. Nickel finish. Standard package, ten instruments, ship. wt. 4 lbs.

### STERLING SPECIAL-PURPOSE POCKET METERS—NEW SERIES

#### Testers for Portable Radio Batteries

The special "A" and "B" dry batteries built for the operation of Portable Radio sets cannot be satisfactorily tested with ordinary battery testers. The new STERLING double voltmeters are designed for testing with correct loads the special "A" and "B" dry batteries used on Portable Radio sets. The new STERLING flexible plugs of these meters fit easily into the small closely spaced socket holes.

- No. 37A Voltmeter for 45 v. "B" batteries and 1.5 v. "A" batteries. Scale 0-50 v., 1 v. div. Scale 0-2 v., 1/10 v. div. Tests 45 v. "B" and 1½ v. "A" batteries. List Price, \$3.00
- No. 38A Voltmeter for 90 v. "B" batteries and 1.5 v. "A" batteries. Scale 0-100 v., 5 v. div. Scale 0-2 v., 1/10 v. div. Tests 45 v. and 90 v. "B" batteries and 1½ v. "A" batteries. List Price, \$3.25
- No. 39A Voltmeter for 90 v. and 135 v. "B" batteries and 1.5 v. "A" batteries. Scale 0-150 v., 5 v. div. Scale 0-2 v., 1/10 v. div. Tests 90 v. and 135 v. "B" batteries and 1½ v. "A" batteries. List Price, \$3.25
- No. 40A Voltmeter for 90 v. and 135 v. "B" batteries and 4.5 v., 6 v. and 7.5 v. "A" batteries. Scale 0-150 v., 5 v. div. Scale 0-10 v., 1/5 v. div. Tests 90 v. and 135 v. "B" batteries and 4½ v., 6 v. and 7½ v. "A" batteries. List Price, \$3.50
- No. 42A Graphic General Tester. Red and Green color chart for all standard batteries including 45 v. and 90 v. "B" batteries and 1.5 v., 4.5 v., and 7.5 v. "A" batteries. 0-100 v. scale for special sizes of "B" batteries, 5 v. div. Tests all Portable Radio batteries. List Price, \$6.00

#### Testers for Hearing Aid Batteries

- No. 31A Double voltmeter for special 30 or 45 v. "B" batteries and 1½ v. "A" batteries, scale 0-50 v., 1 v. div., scale 0-2 v., 1/10 v. divisions. Carefully engineered to impose the correct loads on the small delicate batteries used to operate vacuum tube hearing aids. Equipped with new STERLING flexible plugs. List Price, \$3.50
- No. 10 Double voltmeter for testing all types of hearing aid batteries, scale 0-50 v. and 0-2 v. Instant readings, dual contact prod makes testing quick and easy. Small loads imposed on the small hearing aid batteries. Knowledge of battery polarity not needed. List Price, \$4.50
- No. 32A Double Voltmeter for special 22½ or 30 v. "B" batteries and 1½ v. "A" batteries, scale 0-35 v., 1 v. div., scale 0-2 v. 1/10 v. divisions. Equipped with new STERLING flexible plugs. List Price, \$3.50

Meters 2¼" in diameter and ⅝" thick. Nickel finish. Standard package, ten instruments, ship. wt. 4 lbs.

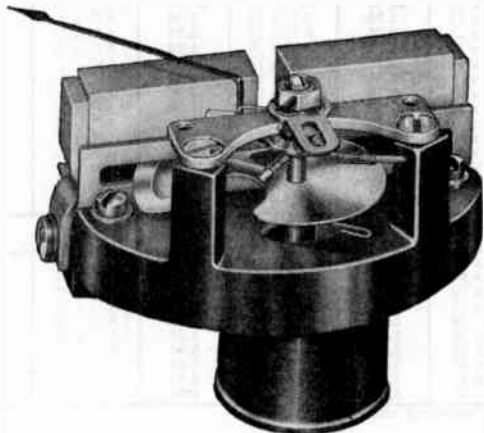


No. 38A Voltmeter



No. 10 Hearing Aid Tester

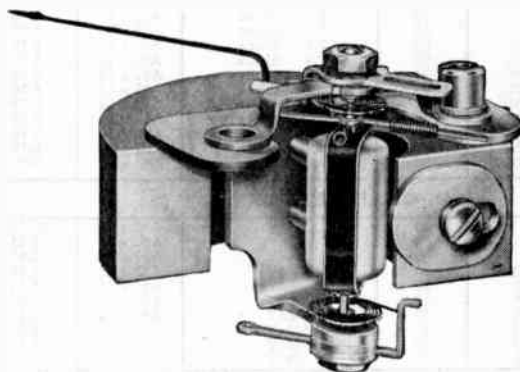
# Improved **PANEL INSTRUMENTS**



**Alternating Current**

AC and DC types are accurate to within 2% of full scale value at any point on the scale.

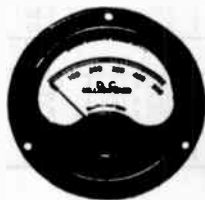
DC instruments combine extremely light weight moving elements and powerful alnico magnets to produce a torque to weight ratio which reduces frictional error to a minimum. This high torque to weight ratio permits use of pivots with ample pivot bearing surface to overcome effects of rough handling, shock, and vibration.



**Direct Current**

AC instruments are accurate over entire range of commercial power frequencies (25 to 125 cycles). These instruments are of repulsion vane type using carefully aged and impregnated field coils and multipliers which are wound with conductors of ample size so that temperature rise of the windings may be maintained at a minimum, even though instrument is subjected to continuous use in the circuit.

Alnico magnets are used to obtain perfected damping characteristics found in no other AC instrument.



**MODELS**  
 Direct Current  
 221, 421, 431, 441  
 Alternating Current  
 222, 422, 432, 442



**MODELS**  
 Direct Current  
 731, 741  
 Alternating Current  
 732, 742



**MODELS**  
 Direct Current  
 141  
 Alternating Current  
 142



**MODELS**  
 Direct Current  
 521, 531  
 Alternating Current  
 522, 532



**MODELS**  
 Direct Current  
 841  
 Alternating Current  
 842

## CASE DIMENSIONS

Model No.		Body	Flange	Body Depth	Stud Length		Case
					DC	AC	
141	142		4" x 4 1/4"	2"	3/4"	1"	Rectangular, front-of-board, Bakelite
221	222	2.062" Diam.	2.740" Diam.	1.29/64"	5/8"	25/32"	Round, flush, Metal
421	422	2.156" Diam.	2.690" Diam.	1.4062"	5/8"	25/32"	Round, flush, Bakelite
431	432	2.796" Diam.	3 1/2" Diam.	1 1/2"	3/4"	3/4"	Round, flush, Bakelite
441	442	3.5625" Diam.	4 3/8" Diam.	1.4531"	3/4"	3/4"	Round, flush, Bakelite
521	522	2.156" Diam.	2 3/8" x 2 3/8"	1 3/8"	5/8"	25/32"	Square, flush, Bakelite
531	532	2.796" Diam.	3" x 3"	1 1/2"	3/4"	3/4"	Square, flush, Bakelite
731	732	2 1/4" Diam.	3 11/16" x 3 5/16"	1.0156"	3/4"	5/8"	Rectangular, semi-flush, Bakelite
741	742	2 3/4" Diam.	4" x 4 1/4"	1"	3/4"	3/4"	Rectangular, semi-flush, Bakelite
841	842	2 3/4" Diam.		1.2187"	3/4"	3/4"	Fan-shaped, semi-flush, Bakelite

See following page for prices and specifications.



# Burlington Improved

**DIRECT**

**D. C. MILLIAMMETERS**

Range	Scale Div.	Approx. Res.	MODEL 221		MODEL 421		MODEL 521		MODEL 531	
			Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
0-1	50	47 ohms	A82 x 5	\$5.70	A72 x 11	\$5.70	A73 x 11	\$5.70	A75 x 11	\$6.45
0-5	50	10 ohms	A82 x 6	5.70	A72 x 14	5.70	A73 x 14	5.70	A75 x 14	6.45
0-10	50	5 ohms	A82 x 7	5.70	A72 x 15	5.70	A73 x 15	5.70	A75 x 15	6.45
0-15	30	9.34 ohms	A82 x 8	5.70	A72 x 16	5.70	A73 x 16	5.70	A75 x 16	6.45
0-25	50	5.6 ohms	A82 x 9	5.70	A72 x 17	5.70	A73 x 17	5.70	A75 x 17	6.45
0-50	50	2.8 ohms	A82 x 10	5.70	A72 x 19	5.70	A73 x 19	5.70	A75 x 19	6.45
0-100	50	1.4 ohms	A82 x 11	5.70	A72 x 20	5.70	A73 x 20	5.70	A75 x 20	6.45
0-150	30	.94 ohms	A82 x 12	5.70	A72 x 21	5.70	A73 x 21	5.70	A75 x 21	6.45
0-200	40	.7 ohms	A82 x 13	5.70	A72 x 22	5.70	A73 x 22	5.70	A75 x 22	6.45
0-250	50	.56 ohms	A82 x 14	5.70	A72 x 23	5.70	A73 x 23	5.70	A75 x 23	6.45
0-300	30	.466 ohms	A82 x 15	5.70	A72 x 24	5.70	A73 x 24	5.70	A75 x 24	6.45
0-500	50	.28 ohms	A82 x 16	5.70	A72 x 25	5.70	A73 x 25	5.70	A75 x 25	6.45
0-750	75	.186 ohms	A82 x 17	5.70	A72 x 26	5.70	A73 x 26	5.70	A75 x 26	6.45
0-1000	50	.140 ohms	A82 x 18	5.70	A72 x 28	5.70	A73 x 28	5.70	A75 x 28	6.45

**D. C. AMMETERS**

0-1	50	50MV	A82 x 19	\$5.85	A72 x 29	\$5.85	A73 x 29	\$5.85	A75 x 29	\$6.60
0-3	30	50MV	A82 x 20	5.85	A72 x 84	5.85	A73 x 84	5.85	A75 x 84	6.60
0-5	50	50MV	A82 x 21	5.85	A72 x 30	5.85	A73 x 30	5.85	A75 x 30	6.60
0-10	50	50MV	A82 x 22	5.85	A72 x 33	5.85	A73 x 33	5.85	A75 x 33	6.60
0-15	30	50MV	A82 x 48	5.85	A72 x 34	5.85	A73 x 34	5.85	A75 x 34	6.60
0-25	50	50MV	A82 x 23	5.85	A72 x 36	5.85	A73 x 36	5.85	A75 x 36	6.60
0-30	30	50MV	A82 x 24	5.85	A72 x 37	5.85	A73 x 37	5.85	A75 x 37	6.60
0-50	50	50MV	A82 x 25	5.85	A72 x 40	5.85	A73 x 40	5.85	A75 x 40	6.60
0-60	30	50MV	A82 x 26	5.85	A72 x 41	5.85	A73 x 41	5.85	A75 x 41	6.60
0-75	75	50MV	A82 x 27	5.85	A72 x 44	5.85	A73 x 44	5.85	A75 x 44	6.60

Ranges above 60 amp. are supplied as 50MV movements for use with 50MV external shunts.

**D. C. MICROAMMETERS**

0-50	50	1150 ohms	A82 x 1	\$12.00	A72 x 1	\$12.00	A73 x 1	\$12.00	A75 x 1	\$12.45
0-100	50	1150 ohms	A82 x 2	8.75	A72 x 2	8.75	A73 x 2	8.75	A75 x 2	10.20
0-200	40	330 ohms	A82 x 3	7.95	A72 x 4	7.95	A73 x 4	7.95	A75 x 4	8.85
0-500	50	225 ohms	A82 x 4	7.35	A72 x 9	7.35	A73 x 9	7.35	A75 x 9	8.25

**D. C. VOLTMETERS—200 Ohms Per Volt**

0-3	30	-----	A82 x 36	\$5.85	A72 x 59	\$5.85	A73 x 59	\$5.85	A75 x 59	\$6.60
0-6	50	-----	A82 x 37	5.85	A72 x 60	5.85	A73 x 60	5.85	A75 x 60	6.60
0-10	50	-----	A82 x 38	5.85	A72 x 61	5.85	A73 x 61	5.85	A75 x 61	6.60
0-15	30	-----	A82 x 39	5.85	A72 x 62	5.85	A73 x 62	5.85	A75 x 62	6.60
0-25	50	-----	A82 x 40	5.85	A72 x 64	5.85	A73 x 64	5.85	A75 x 64	6.60
0-50	50	-----	A82 x 41	5.85	A72 x 67	5.85	A73 x 67	5.85	A75 x 67	6.60
0-100	50	-----	A82 x 42	5.85	A72 x 70	5.85	A73 x 70	5.85	A75 x 70	6.60
0-150	30	-----	A82 x 43	7.35	A72 x 71	7.35	A73 x 71	7.35	A75 x 71	7.80
0-300	30	-----	-----	-----	-----	-----	-----	-----	A75 x 74	8.85

**D. C. VOLTMETERS—1000 Ohms Per Volt**

0-50	50	-----	A82 x 44	\$7.85	A72 x 70	\$7.85	A73 x 70	\$7.85	A75 x 75	\$8.25
0-100	50	-----	A82 x 45	8.25	A72 x 72	8.25	A73 x 72	8.25	A75 x 77	8.55
0-150	30	-----	A82 x 46	8.55	A72 x 73	8.55	A73 x 73	8.55	A75 x 78	8.85
0-300	30	-----	A82 x 47	8.85	A72 x 76	8.85	A73 x 76	8.85	A75 x 81	9.15
0-500	50	-----	-----	-----	-----	-----	-----	-----	A75 x 82	10.35
0-1000	50	-----	-----	-----	-----	-----	-----	-----	A75 x 83	14.10

Ranges above those listed are supplied for use with external resistors.

**A. C. MILLIAMMETERS**

**ALTERNATING**

Range	Scale Div.	Approx. Res.	MODEL 322		MODEL 422		MODEL 522		MODEL 532	
			Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
0-10	50	2020 ohms	A100 x 2	\$5.70	A90 x 1	\$5.70	A91 x 1	\$5.70	A93 x 1	\$6.30
0-15	30	1120 ohms	A100 x 3	5.70	A90 x 33	5.70	A91 x 33	5.70	A93 x 25	6.30
0-25	50	370 ohms	A100 x 4	5.70	A90 x 2	5.70	A91 x 2	5.70	A93 x 2	6.30
0-50	50	83 ohms	A100 x 5	5.70	A90 x 3	5.70	A91 x 3	5.70	A93 x 3	6.30
0-100	50	20 ohms	A100 x 6	5.70	A90 x 4	5.70	A91 x 4	5.70	A93 x 4	6.30
0-250	50	4 ohms	A100 x 7	5.70	A90 x 34	5.70	A91 x 34	5.70	A93 x 26	6.30
0-500	50	.8 ohms	A100 x 8	5.70	A90 x 5	5.70	A91 x 5	5.70	A93 x 5	6.30

**A. C. AMMETERS**

0-1.5	30	.072 ohms	A100 x 9	\$5.70	A90 x 27	\$5.70	A91 x 27	\$5.70	A93 x 27	\$6.30
0-5	50	.0108 ohms	A100 x 10	5.70	A90 x 7	5.70	A91 x 7	5.70	A93 x 7	6.30
0-10	50	.0038 ohms	A100 x 11	5.70	A90 x 8	5.70	A91 x 8	5.70	A93 x 8	6.30
0-15	30	.0018 ohms	A100 x 12	5.70	A90 x 28	5.70	A91 x 28	5.70	A93 x 28	6.30
0-25	50	.0008 ohms	A100 x 13	5.70	A90 x 29	5.70	A91 x 29	5.70	A93 x 29	6.30
0-30	30	.00079 ohms	A100 x 14	5.70	A90 x 9	5.70	A91 x 9	5.70	A93 x 9	6.30
0-50	50	.00048 ohms	A100 x 15	5.70	A90 x 10	5.70	A91 x 10	5.70	A93 x 10	6.30
0-75	75	.00035 ohms	A100 x 16	*5.70	A90 x 11	*5.70	A91 x 11	*5.70	A93 x 11	7.95

\* These and higher ranges are supplied as 5 amp. movement for use with current transformers.

**A. C. VOLTMETERS**

0-1.5	30	3.3	A100 x 23	\$6.30	A90 x 24	\$6.30	A91 x 24	\$6.30	A93 x 33	\$6.75
0-3	50	10	A100 x 24	6.30	A90 x 25	6.30	A91 x 25	6.30	A93 x 34	6.75
0-5	50	10	A100 x 25	6.30	A90 x 16	6.30	A91 x 16	6.30	A93 x 16	6.75
0-10	50	13	A100 x 26	6.30	A90 x 17	6.30	A91 x 17	6.30	A93 x 17	6.75
0-15	30	13	A100 x 27	6.30	A90 x 18	6.30	A91 x 18	6.30	A93 x 18	6.75
0-25	50	26	A100 x 28	6.30	A90 x 26	6.30	A91 x 26	6.30	A93 x 35	6.75
0-50	50	50	A100 x 29	6.30	A90 x 20	6.30	A91 x 20	6.30	A93 x 20	6.75
0-100	50	110	A100 x 30	6.30	A90 x 21	6.30	A91 x 21	6.30	A93 x 21	6.75
0-150	30	110	A100 x 1	7.35	A90 x 22	7.35	A91 x 22	7.35	A93 x 22	8.75
0-300	30	165	A100 x 31	7.85	A90 x 23	7.85	A91 x 23	7.85	A93 x 23	7.80
0-500	50	165	-----	-----	-----	-----	-----	-----	A93 x 24	8.55
0-600	30	165	-----	-----	-----	-----	-----	-----	A93 x 36	9.15

Ranges above those shown require external resistors.

# PANEL INSTRUMENTS

CURRENT

## D. C. MILLIAMMETERS

MODEL 731		MODEL 431		MODEL 741		MODEL 141		** MODEL 441		MODEL 841	
Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A76 x 11	\$6.60	A74 x 11	\$6.45	A79 x 11	\$7.65	A78 x 11	\$7.65	A77 x 11	---	A80 x 11	\$7.20
A76 x 14	6.60	A74 x 14	6.45	A79 x 14	7.65	A78 x 14	7.65	A77 x 14	---	A80 x 14	7.20
A76 x 15	6.60	A74 x 15	6.45	A79 x 15	7.65	A78 x 15	7.65	A77 x 15	---	A80 x 15	7.20
A76 x 16	6.60	A74 x 16	6.45	A79 x 16	7.65	A78 x 16	7.65	A77 x 16	---	A80 x 16	7.20
A76 x 17	6.60	A74 x 17	6.45	A79 x 17	7.65	A78 x 17	7.65	A77 x 17	---	A80 x 17	7.20
A76 x 19	6.60	A74 x 19	6.45	A79 x 19	7.65	A78 x 19	7.65	A77 x 19	---	A80 x 19	7.20
A76 x 20	6.60	A74 x 20	6.45	A79 x 20	7.65	A78 x 20	7.65	A77 x 20	---	A80 x 20	7.20
A76 x 21	6.60	A74 x 21	6.45	A79 x 21	7.65	A78 x 21	7.65	A77 x 21	---	A80 x 21	7.20
A76 x 22	6.60	A74 x 22	6.45	A79 x 22	7.65	A78 x 22	7.65	A77 x 22	---	A80 x 22	7.20
A76 x 23	6.60	A74 x 23	6.45	A79 x 23	7.65	A78 x 23	7.65	A77 x 23	---	A80 x 23	7.20
A76 x 24	6.60	A74 x 24	6.45	A79 x 24	7.65	A78 x 24	7.65	A77 x 24	---	A80 x 24	7.20
A76 x 25	6.60	A74 x 25	6.45	A79 x 25	7.65	A78 x 25	7.65	A77 x 25	---	A80 x 25	7.20
A76 x 26	6.60	A74 x 26	6.45	A79 x 26	7.65	A78 x 26	7.65	A77 x 26	---	A80 x 26	7.20
A76 x 28	6.60	A74 x 28	6.45	A79 x 28	7.65	A78 x 28	7.65	A77 x 28	---	A80 x 28	7.20

## D. C. AMMETERS

A76 x 29	\$6.75	A74 x 29	\$6.60	A79 x 29	\$7.80	A78 x 29	\$7.80	A77 x 29	---	A80 x 29	\$7.35
A76 x 84	6.75	A74 x 84	6.60	A79 x 84	7.80	A78 x 84	7.80	A77 x 84	---	A80 x 84	7.35
A76 x 30	6.75	A74 x 30	6.60	A79 x 30	7.80	A78 x 30	7.80	A77 x 30	---	A80 x 30	7.35
A76 x 33	6.75	A74 x 33	6.60	A79 x 33	7.80	A78 x 33	7.80	A77 x 33	---	A80 x 33	7.35
A76 x 34	6.75	A74 x 34	6.60	A79 x 34	7.80	A78 x 34	7.80	A77 x 34	---	A80 x 34	7.35
A76 x 36	6.75	A74 x 36	6.60	A79 x 36	7.80	A78 x 36	7.80	A77 x 36	---	A80 x 36	7.35
A76 x 37	6.75	A74 x 37	6.60	A79 x 37	7.80	A78 x 37	7.80	A77 x 37	---	A80 x 37	7.35
A76 x 40	6.75	A74 x 40	6.60	A79 x 40	7.80	A78 x 40	7.80	A77 x 40	---	A80 x 40	7.35
A76 x 41	6.75	A74 x 41	6.60	A79 x 41	7.80	A78 x 41	7.80	A77 x 41	---	A80 x 41	7.35
A76 x 44	6.75	A74 x 44	6.60	A79 x 44	7.80	A78 x 44	7.80	A77 x 44	---	A80 x 44	7.35

## D. C. MICROAMMETERS

A76 x 1	\$12.60	A74 x 1	\$12.45	A79 x 1	\$13.35	A78 x 1	\$13.35	A77 x 1	---	A80 x 1	\$12.60
A76 x 2	10.35	A74 x 2	10.20	A79 x 2	11.10	A78 x 2	11.10	A77 x 2	---	A80 x 2	10.65
A76 x 4	9.00	A74 x 4	8.85	A79 x 4	10.65	A78 x 4	10.65	A77 x 4	---	A80 x 4	9.75
A76 x 9	8.40	A74 x 9	8.25	A79 x 9	10.05	A78 x 9	10.05	A77 x 9	---	A80 x 9	8.15

## D. C. VOLTMETERS—200 Ohms Per Volt

A76 x 59	\$6.75	A74 x 59	\$6.60	A79 x 59	\$7.80	A78 x 59	\$7.80	A77 x 59	---	A80 x 59	\$7.35
A76 x 60	6.75	A74 x 60	6.60	A79 x 60	7.80	A78 x 60	7.80	A77 x 60	---	A80 x 60	7.35
A76 x 61	6.75	A74 x 61	6.60	A79 x 61	7.80	A78 x 61	7.80	A77 x 61	---	A80 x 61	7.35
A76 x 62	6.75	A74 x 62	6.60	A79 x 62	7.80	A78 x 62	7.80	A77 x 62	---	A80 x 62	7.35
A76 x 64	6.75	A74 x 64	6.60	A79 x 64	7.80	A78 x 64	7.80	A77 x 64	---	A80 x 64	7.35
A76 x 67	6.75	A74 x 67	6.60	A79 x 67	7.80	A78 x 67	7.80	A77 x 67	---	A80 x 67	7.35
A76 x 70	6.75	A74 x 70	6.60	A79 x 70	7.80	A78 x 70	7.80	A77 x 70	---	A80 x 70	7.35
A76 x 71	7.95	A74 x 71	7.80	A79 x 71	8.55	A78 x 71	8.55	A77 x 71	---	A80 x 71	8.25
A76 x 74	7.95	A74 x 74	8.55	A79 x 74	9.30	A78 x 74	9.30	A77 x 74	---	A80 x 74	8.00

## D. C. VOLTMETERS—1000 Ohms Per Volt

A76 x 75	\$8.40	A74 x 75	\$8.25	A79 x 75	\$8.85	A78 x 75	\$8.85	A77 x 75	---	A80 x 75	\$8.55
A76 x 77	8.70	A74 x 77	8.55	A79 x 77	9.15	A78 x 77	9.15	A77 x 77	---	A80 x 77	8.85
A76 x 78	9.00	A74 x 78	8.85	A79 x 78	9.45	A78 x 78	9.45	A77 x 78	---	A80 x 78	9.15
A76 x 81	9.30	A74 x 81	9.15	A79 x 81	9.75	A78 x 81	9.75	A77 x 81	---	A80 x 81	9.45
A76 x 82	10.50	A74 x 82	10.35	A79 x 82	11.55	A78 x 82	11.55	A77 x 82	---	A80 x 82	10.95
A76 x 83	10.50	A74 x 83	14.10	A79 x 83	15.30	A78 x 83	15.00	A77 x 83	---	A80 x 83	14.70

CURRENT

## A. C. MILLIAMMETERS

MODEL 732		MODEL 432		MODEL 742		MODEL 142		** MODEL 442		MODEL 842	
Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
A94 x 1	\$6.45	A92 x 1	\$6.30	A97 x 1	\$7.50	A96 x 1	\$7.50	A95 x 1	---	A98 x 1	\$7.20
A94 x 25	6.45	A92 x 25	6.30	A97 x 25	7.50	A96 x 25	7.50	A95 x 25	---	A98 x 25	7.20
A94 x 2	6.45	A92 x 2	6.30	A97 x 2	7.50	A96 x 2	7.50	A95 x 2	---	A98 x 2	7.20
A94 x 3	6.45	A92 x 3	6.30	A97 x 3	7.50	A96 x 3	7.50	A95 x 3	---	A98 x 3	7.20
A94 x 4	6.45	A92 x 4	6.30	A97 x 4	7.50	A96 x 4	7.50	A95 x 4	---	A98 x 4	7.20
A94 x 26	6.45	A92 x 26	6.30	A97 x 26	7.50	A96 x 26	7.50	A95 x 26	---	A98 x 26	7.20
A94 x 5	6.45	A92 x 5	6.30	A97 x 5	7.50	A96 x 5	7.50	A95 x 5	---	A98 x 5	7.20

## A. C. AMMETERS

A94 x 27	\$6.45	A92 x 27	\$6.30	A97 x 27	\$7.50	A96 x 27	\$7.50	A95 x 27	---	A98 x 27	\$7.20
A94 x 7	6.45	A92 x 7	6.30	A97 x 7	7.50	A96 x 7	7.50	A95 x 7	---	A98 x 7	7.20
A94 x 8	6.45	A92 x 8	6.30	A97 x 8	7.50	A96 x 8	7.50	A95 x 8	---	A98 x 8	7.20
A94 x 28	6.45	A92 x 28	6.30	A97 x 28	7.50	A96 x 28	7.50	A95 x 28	---	A98 x 28	7.20
A94 x 29	6.45	A92 x 29	6.30	A97 x 29	7.50	A96 x 29	7.50	A95 x 29	---	A98 x 29	7.20
A94 x 9	6.45	A92 x 9	6.30	A97 x 9	7.50	A96 x 9	7.50	A95 x 9	---	A98 x 9	7.20
A94 x 10	6.45	A92 x 10	6.30	A97 x 10	7.50	A96 x 10	7.60	A95 x 10	---	A98 x 10	7.20
A94 x 11	6.45	A92 x 11	7.95	A97 x 11	8.60	A96 x 11	8.60	A95 x 11	---	A98 x 11	8.30

## A. C. VOLTMETERS

A94 x 33	\$6.90	A92 x 33	\$6.75	A97 x 33	\$7.65	A96 x 33	\$7.65	A95 x 33	---	A98 x 33	\$7.20
A94 x 34	6.90	A92 x 34	6.75	A97 x 34	7.65	A96 x 34	7.65	A95 x 34	---	A98 x 34	7.20
A94 x 16	6.90	A92 x 16	6.75	A97 x 16	7.65	A96 x 16	7.65	A95 x 16	---	A98 x 16	7.20
A94 x 17	6.90	A92 x 17	6.75	A97 x 17	7.65	A96 x 17	7.65	A95 x 17	---	A98 x 17	7.20
A94 x 18	6.90	A92 x 18	6.75	A97 x 18	7.65	A96 x 18	7.65	A95 x 18	---	A98 x 18	7.20
A94 x 35	6.90	A92 x 35	6.75	A97 x 35	7.65	A96 x 35	7.65	A95 x 35	---	A98 x 35	7.20
A94 x 20	6.90	A92 x 20	6.75	A97 x 20	7.65	A96 x 20	7.65	A95 x 20	---	A98 x 20	7.20
A94 x 21	6.90	A92 x 21	6.75	A97 x 21	7.65	A96 x 21	7.65	A95 x 21	---	A98 x 21	7.20
A94 x 22	7.95	A92 x 22	7.80	A97 x 22	8.40	A96 x 22	8.40	A95 x 22	---	A98 x 22	8.10
A94 x 23	6.70	A92 x 23	6.55	A97 x 23	8.00	A96 x 23	8.00	A95 x 23	---	A98 x 23	6.70
---	---	A92 x 24	8.65	A97 x 24	10.50	A96 x 24	10.50	A95 x 24	---	A98 x 24	10.30
---	---	A92 x 45	9.15	A97 x 38	10.60	A96 x 36	10.80	A95 x 36	---	A98 x 36	10.50

\*\* Models 441-442 prices on application.





# Burlington Improved

## PANEL INSTRUMENTS

### RUNNING TIME METERS

Model 538 3" Square Flush 0-9999.9 Hours .....	\$15.00
Model 438 3½" Round Flush 0-9999.9 Hours .....	13.00

120 or 240 volt (specify when ordering)

### POWER LEVEL INDICATORS VU METERS

Model 745 4¼" Rectangular Semi-flush .....	\$19.50
Model 535 3" Square Flush .....	18.00
Model 435 3½" Round Flush .....	18.00

Supplied with "A" or "B" Scale (specify)

Illumination for Model 745 add \$2.10 extra. Complete with bulbs.

### DB METERS

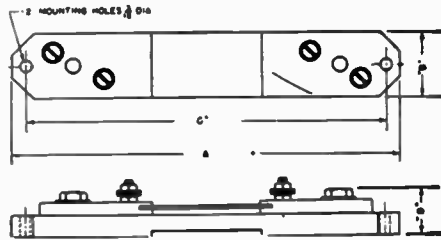
Model 425 2½" Round Flush .....	\$14.40
Model 525 2½" Square Flush .....	14.40
Model 435 3½" Round Flush .....	13.00
Model 535 3" Square Flush .....	15.00
Model 735 3½" Rectangular Semi-flush .....	15.15
Model 745 4¼" Rectangular Semi-flush .....	16.50

Illumination for Models 735-745 Add \$2.10 extra.

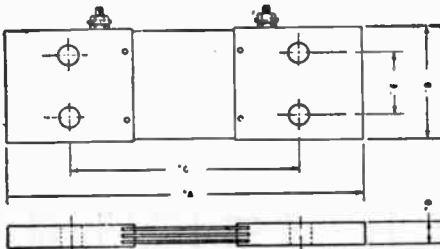
All other Models Add \$1.20 extra. Complete with bulbs.

### EXTERNAL SHUNTS

Range	Part No.	"A"	"B"	"C"	"D"	Price
25 amp.	A31 x 152	7½"	1¼"	7"	61/64"	\$4.20
30 amp.	A31 x 153	7½"	1¼"	7"	61/64"	4.20
50 amp.	A31 x 158	7½"	1¼"	7"	61/64"	4.20
60 amp.	A31 x 157	7½"	1¼"	7"	61/64"	4.20
75 amp.	A31 x 158	7½"	1¼"	7"	61/64"	4.20
100 amp.	A31 x 160	7½"	1¼"	7"	61/64"	4.20



25 to 100 Amp. Inclusive



150 to 1500 Amp. Inclusive

Range	Part No.	"A"	"B"	"C"	"D"	"E"	Mounting	Price
150 amp.	A31 x 163	5½"	1½"	4¼"	¼"	On CL	1-Hole Each	\$ 4.95
200 amp.	A31 x 164	5½"	2"	4¼"	¼"	On CL	End ¾" Dia.	4.95
300 amp.	A31 x 167	5½"	1½"	4¼"	¾"	On CL		4.95
400 amp.	A31 x 168	7"	2½"	4½"	¾"			6.45
500 amp.	A31 x 170	7"	2½"	4½"	¾"	1¼"	2-Holes Each	7.95
600 amp.	A31 x 171	8"	3"	5"	1"	2"	End ¾" Dia.	8.90
1000 amp.	A31 x 174	8½"	3"	6¾"	1½"	1½"		14.85
1200 amp.	A31 x 175	8½"	3"	6¾"	1½"	1½"		19.00
1500 amp.	A31 x 178	8½"	3"	6¾"	1½"	1½"		22.15

Shunts or other than 50MV drop or ranges not listed quoted on request. 4 foot leads are supplied.

### CURRENT TRANSFORMERS

### DONUT TYPE

RATIO	PART No.	PRIMARY TURNS	PRICE
50/5	A70 x 7	1	\$ 6.75
100/5	A70 x 21	1	6.75
150/5	A70 x 25	1	6.75
200/5	A70 x 27	1	6.75
250/5	A70 x 29	1	6.75
300/5	A70 x 31	1	6.75
400/5	A70 x 35	1	6.75
500/5	A70 x 38	1	6.75
600/5	A70 x 37	1	11.25
750/5	A70 x 38	1	11.25
1000/5	A70 x 49	1	11.25

If ranges or ratios other than those listed above are required, give full details as to range or ratio, length of leads, size etc., when ordering. 2 foot leads are standard.



TYPE NF-2C

# EMICO PRECISION INSTRUMENTS

FOR  
PANELS AND TEST SETS

Electro Mechanical Instrument Co.  
813 Chestnut Street, Perkasi, Pa.



TYPE RF-2C

EMICO panel and test meters are rugged and reliable instruments. Cases are of steel and finished in durable black. DC meters have the new HI-TORQUE magnetic movements and are accurate to well within 5%. AC meters are of the moving iron type and are also accurate to within 5%.

**MOUNTING**—All model NF-2C and RF-2C meters will fit into a 2 1/4" diameter hole and are mounted by means of a U. clamp.

**DESIGN**—EMICO meters are designed to give satisfactory service under the most severe conditions. They are styled to add to the prestige and appearance of electrical equipment.

**PRICES**—Prices listed are net and include all hardware and individual boxing.

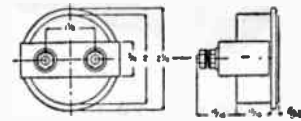
**CALIBRATION**—Since the instruments are calibrated in steel cases, their accuracy is not affected by panels made of magnetic materials of nominal thickness.

**GUARANTEED**—All EMICO instruments are guaranteed against defective material and workmanship for a period of one year after date of purchase, and will be repaired or replaced if sent to the factory postpaid with a 50c handling charge.

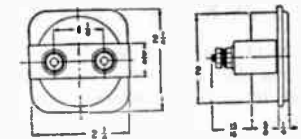
EMICO instruments are available in quantities to jobbers or manufacturers in the following sizes: NF-2", RF-2", RF-2 1/2", and RF-4 1/2" at 3% accuracy. We invite your inquiries on instruments for special application.

## DEALERS' PRICE LIST

DC AMMETERS		MODEL NF-2C	MODEL RF-2C
Range		Catalog Number	Catalog Number
0-1		2101	2201
0-5		2102	2202
0-10		2103	2203
0-20		2104	2204
0-30		2105	2205
1-0-1		2109	2209
3-0-3		2110	2210
6-0-6		2111	2211
10-0-		2112	2212
15-0-15		2113	2213
20-0-20		2114	2214
30-0-30		2115	2215
DC MILLIAMMETERS			
0-1		2120	2220
0-3		2121	2221
0-5		2125	2225
0-10		2126	2226
0-20		2127	2227
0-30		2128	2228
0-50		2129	2229
0-100		2130	2230
0-150		2130-A	2230-A
0-200		2130-B	2230-B
0-300		2131	2231
0-500		2132	2232
DC VOLTMETERS (LOW RESISTANCE)			
0-1		2134	2234
0-3		2135	2235
0-5		2136	2236
0-10		2136-A	2236-A
0-15		2136-B	2236-B
0-20		2137	2237
0-50		2138	2238
DC VOLTMETERS (HIGH RESISTANCE)			
(100 ohms/volt except 150 and 300 volt ranges are 200 ohms per volt)			
0-10		2140	2240
0-30		2141	2241
0-50		2142	2242
0-150		2143	2243
0-300		2144	2244
AC AMMETERS			
0-1		6101	6201
0-3		6102	6202
0-5		6103	6203
0-10		6104	6204
0-25		6105	6205
0-50		6106	6206
AC MILLIAMMETERS			
0-25		6125	6225
0-50		6126	6226
0-100		6127	6227
0-250		6128	6228
0-500		6129	6229
AC VOLTMETERS			
0-5		6135	6235
0-10		6136	6236
0-15		6137	6237
0-25		6137-A	6237-A
0-50		6138	6238
0-150		6139	6239
0-300		6140	6240



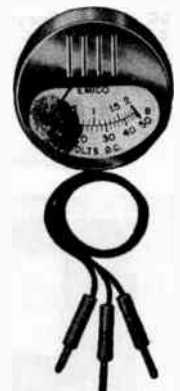
TYPE NF-2C



TYPE RF-2C

## EMICO HEARING AID BATTERY TESTER

MODEL 103A



Note These Features:

- Unbreakable Metal Case
- Beautifully Finished Case
- Powerful Mechanism
- Color-Fast Metal Dial
- Easily Read Dial
- Reliably Accurate
- Will Not Drain Batteries

Designed to Test  
All Types of  
2 Volt "A" Batteries  
and 22 1/2, 30 and 45 Volt "B" Batteries

Available also in  
0-9 and 0-90 Volt Range —  
Specify Model 103B

Write to Factory for Prices

# The "STAR" Line of QUALITY TEST EQUIPMENT

## A Precision TUBE CHECKER *at Minimum Cost*



**MODEL TE-1**

Separate switching is provided for each pin of each socket so that any of the heater voltages or the plate voltage can be applied. With this versatile arrangement all standard receiving tubes can be checked no matter what the internal connections.

**\$29<sup>95</sup>**

### FEATURES

- Tests all receiving type tubes including the new series of seven and nine pin tubes now being released for FM and Television.
- Individual pin switching provides the maximum of flexibility in testing.
- 3" square wide vision meter.
- Tests individually all sections of multi-section tubes.
- Features a check for line voltage variations.
- Tests for shorts between all tube elements.
- Compact size — 9" x 7" x 3 1/2".
- Weight — six pounds.
- For use on 50 to 60 cycle, 115 V., AC lines.
- All instruments shipped complete with up to date tube charts.

## STAR TESTER MODEL M-11

The Model M-11 has been designed as a basic all around multi-tester for use by the radio serviceman and allied industries. All essential ranges are covered very adequately with excellent overlapping.

**\$17<sup>95</sup>**

### FEATURES

- A large, wide vision, 4 1/2", 400-microampere meter for ease of reading on all ranges.
- 27 separate ranges for measurement.
- 1,000 ohm per volt sensitivity AC and DC.
- Precision resistors throughout.
- Light weight — 4 pounds.
- Compact size — 9" x 7" x 3 1/2".
- All instruments shipped complete with batteries, test leads and instructions for use.

### DESIGN DATA

- 5 AC Voltage Ranges:  
0 to 10/50/250/500/1000 Volts.
- 5 DC Voltage Ranges:  
0 to 10/50/250/500/1000 Volts.
- 5 Output Meter Ranges:  
0 to 10/50/250/500/1000 Volts.
- 4 DC Current Ranges:  
0 to 1/10/100/1000 Ma.
- 3 Resistance Ranges:  
0 to 5,000/500,000 Ohms.  
0 to 5 Megohms.
- 5 Decibel Ranges:  
Overall Range from -10 to +54 Db.



## 10,000-VOLT STAR TESTER MODEL M-204

The Model M-204 is the high sensitivity, high voltage companion to the M-11. This unit has been engineered to give the maximum possible flexibility in the testing of all AM, FM and Television circuits.

**\$29<sup>95</sup>**

### FEATURES

- A large, wide vision, 4 1/2", 50-microampere meter for ease of reading on all ranges.
- 31 separate ranges for measurement.
- 5 resistance ranges with continuous coverage from zero to 50 megohms. Midscale on first range is 50 ohms.
- 20,000 ohms per volt sensitivity DC.
- 1,000 ohms per volt sensitivity AC.
- 10,000 volts maximum DC.
- 2,500 volts maximum AC.
- Precision resistors throughout.
- All instruments shipped complete with batteries and instructions for use. Test Leads are not included.

### DESIGN DATA

- 6 AC Voltage Ranges:  
0 to 2.5/10/50/200/1000/2500 Volts.
- 6 DC Voltage Ranges:  
0 to 2.5/10/50/250/1000/10000 Volts.
- 5 Output Meter Ranges:  
0 to 2.5/10/50/200/1000 Volts.
- 4 DC Current Ranges:  
0 to 50 Microamperes.  
0 to 1/50/1000 Ma.
- 5 Resistance Ranges:  
Continuous Overlapping from 0 to 50 Megohms.  
R<sub>1</sub>, R<sub>10</sub>, R<sub>100</sub>, R<sub>1000</sub>, R<sub>10000</sub>.
- 5 Decibel Ranges:  
Overall Range from -10 to +54 Db.
- Test Leads:  
TL-10 1,000 Volt.....\$0.65 per pair, net  
TL-100 10,000 Volt.....\$2.95 per pair, net



**MODEL M-204**

**STAR MEASUREMENTS CO. • NEW YORK 56, N. Y.**

# EMC

## Gives More Measurement Value Per Dollar

# TEST EQUIPMENT



### THE E M C MODEL 300 VACUUM TUBE VOLT-OHM-CAPACITY METER

The new Model 300 Vacuum Tube Volt-Ohm-Capacity Meter is an unusually stable, extremely compact instrument, with all of the inherent quality of design and manufacture that is always built into all E M C test instruments.

Its price — amazingly low — was made possible through the development of a new efficient circuit by E M C engineers, which enabled great economies. Its large, accurate meter, mounted on a clearly defined, modern panel, makes operation a pleasure rather than a chore.

Sturdily cased in Hammertone metal, this instrument will withstand rough usage, and will give complete satisfaction under all conditions. The Model 300 is supplied as an open-face bench model, or as a portable model in oak carrying case with cover.

### SPECIFICATIONS

Uses 4½" meter.

DC Volts — 6 ranges: 0-3-10-30-100-300-1000 volts.

Input resistance 1 meg per volt on 0-3 and 0-10 ranges, 30 megohms input resistance on 0-30-100-300 and 1000 volts ranges.

1 megohm isolating resistor in probe.

AC Volts — 5 ranges: 0-10-30-100-300-1000 volts.

Approximately 1000 ohms per volt. Full wave tube rectification used.

Resistance — 6 ranges from 2 ohms to 1000 megohms.

Capacity — 4 ranges, from 25 micromicrofarads to 20 microfarads (.000025 mfd to 20 mfd).

Has zero center position available for lining up the discriminator of an FM radio.

DC volts and ohms multipliers accurate to 1%.

Open Face Model, complete with leads, Dealer Price..... **\$39.50**

Above in Kit Form..... **23.95**

Model 300P, above model, in portable case with cover. Dealer Price..... **44.50**

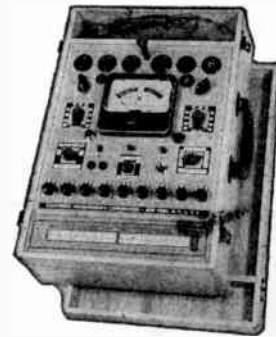
High Frequency Probe for above models, Model HFP..... **6.50**

30,000-Volt lead for above, Model HVL..... **10.25**

### E M C MUTUAL CONDUCTANCE TUBE TESTER — MODEL 201

#### Check These Features

- ✓ Checks mutual conductance on a calibrated micromho scale, as well as an a "Reject-Good" scale.
- ✓ Checks 5 element tubes as pentodes.
- ✓ Checks tubes for gas content.
- ✓ Sufficient plate current to check both emission and mutual conductance.
- ✓ Detects both shorted and open elements.
- ✓ Complete switching flexibility allows all present and future tubes to be tested regardless of location of elements on tube base.
- ✓ Tests tubes for radio frequency and other noise.
- ✓ Tests all tubes from .75 volts to 117 filament volts.
- ✓ Tests all loctal, octal, and miniature tubes.
- ✓ Tests cold cathode, magic-eye, voltage regulator tubes, ballast resistors.
- ✓ Instrument is fused, and fuse is easily replaceable from front of panel.
- ✓ Individual sockets for each tube base type eliminates possible errors.
- ✓ Checks individual sections of multi-purpose tubes.
- ✓ Attractive four-color panel with plenty of eye-appeal. Hard wrinkle finish for durability.
- ✓ Checks sub-miniature tubes.



#### E M C Series 201 Mutual Conductance TUBE TESTERS

Net Prices

Model R201 BC—4½" meter in sloping counter case with built-in chart.....**\$64.50**

Model R201 BP—4½" meter in hand-rubbed carrying case with built-in chart.. **68.50**

For 220 V. operation add \$8.00 to above prices.



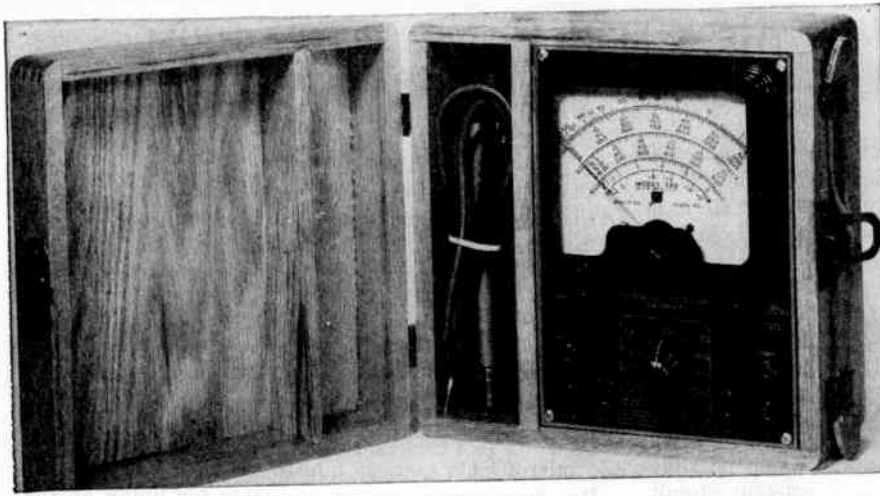
### ELECTRONIC MEASUREMENTS CORPORATION

423 BROOME STREET  
NEW YORK 13, N. Y.

# EMC

## Gives More Measurement Value Per Dollar

# TEST EQUIPMENT



### MODEL 120 20,000 ohms per volt

The ONLY 20,000 ohms per volt instrument that gives:

1. WIDEST resistance range (.2 ohm to 800 megs.).
2. HIGHEST AC voltage sensitivity (10,000 ohms per volt).
3. LOWEST PRICE—\$29.95, open face model; \$34.95 for Model 120-P (portable).

#### Other Features Include:

1. AC voltage frequency range 80 cycles to 1 megacycle.
2. Rectifier and battery replaceable without soldering iron.
3. No external source of power needed for AC voltage measurements.
4. Special precision voltage multipliers accurate to 1%.

#### Specifications:

- DC volts at 20,000 ohms per volt: 0-3v, 0-15v, 0-60v, 0-300v, 0-1500v, 0-6000v.
- AC volts at 10,000 ohms per volt: 0-6v, 0-30v, 0-120v, 0-6000v, 0-3000v, 0-6000v.
- DC current: 0-60 microamps, 0-6ma, 0-60ma, 0-600ma, 0-6 amps.
- Resistance: 0-8000, 0-800,000, 0-3 megs, 0-300 megs.
- Decibels: —4 to +11, +10 to +25, +22 to +37, +38 to +51, +50 to +65, +62 to +77.

Model 120 (Open Face) .....	<b>\$29.95</b>
Model 120-P (Portable Oak Case).....	<b>\$34.95</b>
Model 120 in Kit Form.....	<b>\$22.95</b>
Model 120-P in Kit Form.....	<b>\$26.95</b>

### MODEL 500 — R. F. Signal Generator

Note These High Quality Features:

1. Employs electrostatically shielded transformer for 115V 60 cycle operation.
2. ALL coils not in use are automatically shorted out.
3. Provision for external modulation.
4. Covers range from 150KC to 36 megacycles on fundamentals—over 100 megacycles on harmonics.
5. Attractive 2 color gray hammertone panel and case.
6. 400 cycle internal modulation available.
7. Uses a highly stable, Hartley-type oscillator circuit.

Model 500.....	<b>\$28.75</b>
Model 500K in Kit Form.....	<b>\$18.75</b>



### MODELS 101A & 101B — 1000 ohms per volt

An unusually attractive, Exceptionally Low-Priced volt-ohm-milliammeter. A rugged, flexible instrument, combining features not available in competitive models selling for more than double this price.

Model 101 Volometer is just the instrument whenever the type of measurement does not justify the use of expensive, complicated, highly sensitive equipment.

Model 101B, Open Face, as shown at left. Size: 5 3/8" x 8 3/8" x 2 3/4". Price .....	<b>\$20.95</b>
Model 101B, complete with test leads. Size: 7 1/8" x 8 3/8" x 8 3/8". In Portable Case. Price .....	<b>\$24.95</b>
Model 101A, Open Face, as shown at right. Size: 4 1/2" x 7 1/2" x 3 3/4". Price .....	<b>\$17.50</b>
Model 101A, complete with test leads. Size: 6 1/4" x 7 3/4" x 3 3/4". In Portable Case. Price.....	<b>\$21.50</b>

#### Specifications:

- 5 DC Voltage Ranges (approx. 1000 ohms per v.): 0 to 6-60-300-600-3000 volts.
- 4 AC Voltage Ranges: 0 to 12-120-600-1200 volts.
- 3 DC Current Ranges: 0 to 6-60-600 milliamperes.
- 4 Resistance Ranges: 0 to 200-2000-200,000 ohms; 20 megohms.



## ELECTRONIC MEASUREMENTS CORPORATION

423 BROOME STREET  
NEW YORK 13, N. Y.

# EMC

Gives More Measurement  
Value Per Dollar

# TEST EQUIPMENT

## The EMC ECONOMY LINE!



### MODEL 102 POCKET VOLOMETER\* (1000 OHMS PER VOLT METER)

**Check these Features:**

3" SQUARE METER—1 MIL D'ARSONVAL TYPE METER, 2% ACCURATE.

3 AC CURRENT RANGES.

ROUND CORNERED, BAKELITE, MOLDED CASE.

SAME ZERO ADJUSTMENT FOR BOTH RESISTANCE RANGES.

**Specifications:**

5 AC Voltage Ranges: 0 to 12-120-600-1200-3000 volts.

5 DC Voltage Ranges: 0 to 6-60-300-600-3000 volts.

4 DC Current Ranges: 0 to 6-30-120 ma., 0-1.2 amps.

3 AC Current Ranges: 0 to 30-150-600 ma.

2 Resistance Ranges: 0 to 1000 ohms, 0-1 megohms.

Weight: 1 lb. 5 oz.  
Size: 8 3/4" x 6 1/4" x 2" deep.

Model 102.....\$13.90

### MODEL 103 VOLOMETER\* (1000 OHMS PER VOLT METER)

**Check these Features:**

4 1/2" SQUARE METER—1 MIL D'ARSONVAL TYPE METER, 2% ACCURATE.

3 AC CURRENT RANGES.

ROUND CORNERED, BAKELITE, MOLDED CASE.

SAME ZERO ADJUSTMENT FOR BOTH RESISTANCE RANGES.

**Specifications:**

5 DB Ranges: -4 to +64 db.

5 AC Voltage Ranges: 0 to 12-120-600-1200-3000 volts.

5 DC Voltage Ranges: 0 to 6-60-300-600-3000 volts.

4 DC Current Ranges: 0 to 6-30-120 ma., 0-1.2 amps.

3 AC Current Ranges: 0 to 30-150-600 ma.

2 Resistance Ranges: 0 to 1000 ohms, 0-1 megohms.

Weight: 2 lbs. 3 oz.  
Size: 5 1/4" x 6 3/4" x 2 3/4"



Model 103...\$17.50

Model 103-S,  
same as above but  
with plastic  
carrying case \$17.95



Model 104

\$24.95

### MODEL 104 VOLOMETER\* (20,000 OHMS PER VOLT METER)

**Check these Features:**

4 1/2" SQUARE METER—50 MICROAMPERES; ALNICO MAGNET.

ROUND CORNERED, BAKELITE, MOLDED CASE WITH CARRYING STRAP.

3 AC CURRENT RANGES (to 3 amps.).

3 RESISTANCE RANGES (to 20 megohms).

**Specifications:**

5 DC Voltage Ranges (20,000 ohms/volt): 0 to 6-60-300-600-3000 volts.

5 AC Voltage Ranges (1,000 ohms/volt): 0 to 6-60-300-600-3000 volts.

3 Resistance Ranges: 0-20 K, 0-200 K, 0-20 megs.

3 AC Current Ranges: 0 to 30-300 ma., 0-3 amps.

3 DC Current Ranges: 0 to 6-60-600 ma.

5 DB Ranges: -4 to +67 db.

Weight: 2 lbs. 5 oz.  
Size: 5 3/4" x 6 3/4" x 2 3/4"

\*Reg. Trade Mark for Volt-Ohm-Milliammeter



ELECTRONIC MEASUREMENTS  
CORPORATION

423 BROOME STREET  
NEW YORK 13, N. Y.

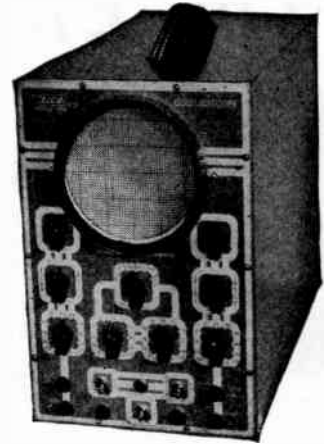


# TEST EQUIPMENT

## MODEL 425-K NEW 5" OSCILLOSCOPE KIT Push-Pull • Wide-Range • High Sensitivity

All-new laboratory precision scope has Push-Pull deflection and .05 to 1 volt per inch sensitivity. Wide range, flat from 5 cps to 500 kc. with full gain setting, useful to 2½ mc. Wide-range, multivibrator, sweep circuit from 15 cps to 75,000 cps. Direct connection to plates of CRT available at rear of cabinet, Z axis intensity modulation feature included. Size: 8½" x 17" x 13" high.

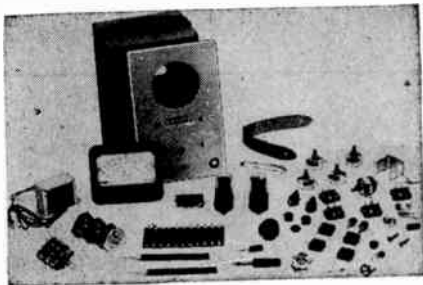
Complete with 3-6SN7, 2-6J5, 2-5Y3, 5BP1 CRT. 110-120 v., 60 cycles AC. Nothing else to buy! Shipping weight: 29 lbs.



COMPLETE KIT ..... **\$39.95**  
MODEL 425. Factory Wired..... **\$69.95**

## EICO MODEL 221-K VACUUM TUBE VOLTMETER THE MOST USEFUL TOOL ON YOUR RADIO BENCH

Tops in work-bench versatility—15 different ranges! AC and DC ranges: 0/5/10/100/500/1000 volts. Electronic ohmmeter ranges from .2 ohm to 1000 megs in 5 steps. New features include Zero Center for TV discriminator alignment. 26 Meg. DC input impedance. Accurate 4½" meter cannot burn out. Double triode balanced bridge circuit assures guaranteed performance. Will measure up to 30,000 V. and 200 mc when used with our HVP-1 or P-75 probes. Sturdy portable steel case with etched rub-proof panel. 110-130 v. AC, 50-60 cycles. Size: 9½" x 6" x 5". Shipping weight: 10 lbs.



COMPLETE KIT ..... **\$23.95**  
MODEL 221. Factory Wired and Tested..... **\$49.95**

**"Build 'em in one evening  
— they last a lifetime!"**

You can save 25 to 52% by building your own laboratory precision EICO test instruments! Famous EICO standards of quality remain the same. Anyone can build them, professional or beginner. Each kit contains a simple, foolproof schematic and pictorial diagram. It's no trick at all to have your instrument in working order in one evening. Thousands of servicemen, amateurs and experimenters are profiting NOW with EICO kits.

### EASY-TO-FOLLOW



**SCHEMATIC  
& PICTORIAL  
DIAGRAMS**

Included with each kit. It's easy to assemble these precision instruments in only one evening!

Sold through jobbers coast to coast. All prices 5% higher on West Coast.

**ELECTRONIC INSTRUMENT COMPANY, INC. • BROOKLYN 12, N. Y.**

**EICO**

# TEST EQUIPMENT & KITS

*"Build 'em in one evening — they last a lifetime!"*

## MODEL 320-K SIGNAL GENERATOR KIT

For FM, AM alignment and to provide TV marker frequencies. Highly stable Hartley oscillator has range of 150 kc. to 102 mc. with fundamentals to 34 mc. Colpitts audio oscillator supplies pure 400-cycle sine wave voltage to test distortion in audio equipment, bridge measurements, etc. Size: 10" x 8" x 4 $\frac{3}{4}$ ". 110-120 v., 60 cycles AC. Vernier tuning condenser. Three-color etched rubproof hammertone panel with sturdy steel case.

COMPLETE with Tubes..... **\$19.95**  
FACTORY WIRED AND ALIGNED Model 320..... **\$29.95**



## MODEL 145-K MULTI-SIGNAL TRACER KIT

Versatile, high gain—high frequency instrument. Self contained test speaker permits tracing of RF, IF, FM, audio and video circuits. Has provision for visual tracing with VTVM, enabling actual stage-by-stage gain comparison. May also be used as a small P.A. or intercom. system. Response is well over 200 mc. Three-color hammertone panel. 110-125 V. AC. Size: 10" x 8" x 4 $\frac{3}{4}$ ". Comes complete with tubes and diode probe in kit form.

COMPLETE KIT ..... **\$18.95**  
MODEL 145. Ready to Operate..... **\$28.95**



## 360-K TV, FM SWEEP SIGNAL GENERATOR KIT

Crystal marker oscillator with variable amplitude. Covers all TV and FM alignment frequencies between 500 kc. and 228 mc. Sweep width variable from 0-30 mc., with mechanical inductive sweep. Extremely wide sweep width allows gain comparison of adjacent RF TV channels. Provides for injection of external signal generator marker. Phasing control included. Vernier dial calibrated in frequencies. Tube complement: 1-6X5GT, 1-12-AU7, 2-6C4. Colorful etched rubproof, hammertone panel in sturdy steel case. Size: 10" x 8" x 6 $\frac{3}{4}$ ". 110-120 v., 60 cycles AC. Shipping weight: 12 lbs.

COMPLETE KIT with tubes (less crystal)..... **\$29.95**  
MODEL 360. FACTORY WIRED AND TESTED..... **\$39.95**  
5 MC Crystals available for above, each..... **\$3.95**



## MODEL 625-K TUBE TESTER KIT

In first rate solid construction, in trigger fast service, and in protection against obsolescence, this brand new Tube Checker assures you of all of the fine qualities and performance of instruments priced three to four times its cost. Tests all conventional tubes including 4, 5, 6, large 7, small 7, octal, loctal, noval, hytron, VR and magic eye, plus pilot bulbs.

Has many exclusive features. COMPLETE KIT ..... **\$29.95**  
Also available factory wired.



*Sold through jobbers coast to coast. All prices 5% higher on West Coast.*

**ELECTRONIC INSTRUMENT COMPANY, INC. • BROOKLYN 12, N. Y.**





# TEST EQUIPMENT

*"Build 'em in one evening — they last a lifetime!"*

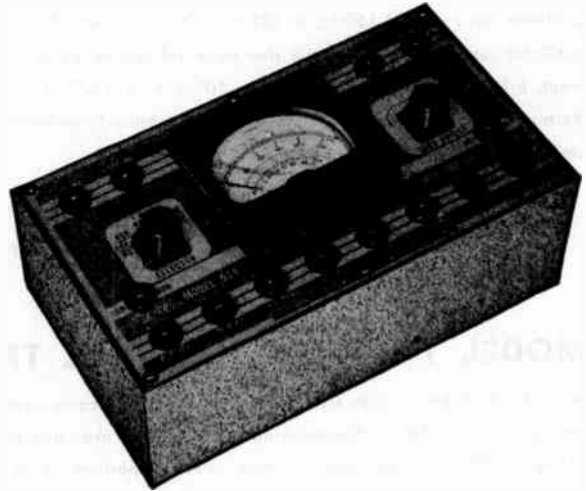
## MODEL 511-K VOLT - OHM - MILLIAMETER

**A MUST FOR EVERY SERVICEMAN! . . .**

Small, handy, all around meter used by repairmen a thousand times a day. Large 3" meter, attractive, etched panel. Simple to assemble.

### Ranges:

- DC—0/5/50/250/500/2500 volts.
- AC—0/10/100/500/1000 volts.
- Output—0/10/100/500/1000 volts.
- DC MA.—0/1/10.
- DC Amps.—0/1/10.
- Ohmmeter—0/500/100,000 ohms/1 meg.
- Db Meter—-8 to +55 Db.



**A PERFECT KIT FOR BEGINNERS...**

COMPLETE KIT ..... **\$14.95**  
 MODEL 511. Ready to Use ..... **\$17.95**

## MODEL HVP-1 HIGH - VOLTAGE PROBE

Measures up to 30,000 volts. Special Helical-wound Ceramic HV Multiplier Resistor adaptable to most VTVM's and all 20,000 ohms per volt scales. Lucite head, plywood bakelite handle, large flashguards for additional safety.

Completely assembled and ready to use.

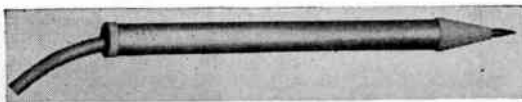


**NOT A KIT!**

F.O.B. Brooklyn

**\$6.95**

## EICO MODEL P-75K H.F. PROBE



Models P-75K and P-76K — Germanium crystal probe for visual R.F. signal tracing, and measurements to over 200 megacycles. Can be used with Model 221 (P-75K), Oscilloscope (P-76K).

IN KIT FORM Only .....

**\$3.75**

ASSEMBLED AT FACTORY...

**\$7.50**

## New! . . . MODEL C-5 5MC CRYSTAL



Adaptable to all standard sockets and circuits. Accuracy is  $\pm .05\%$ . Sold in conjunction with EICO MODEL 360 TV-FM Sweep Generator and other Generators and Oscillators.

NEW!

F.O.B. Brooklyn.....

**\$3.95**

*Sold through jobbers coast to coast. All prices 5% higher on West Coast.*

**ELECTRONIC INSTRUMENT COMPANY, INC. • BROOKLYN 12, N. Y.**

**The DIAL LIGHT COMPANY of AMERICA**  
Foremost Manufacturer of Pilot Lights

**PILOT LIGHT ASSEMBLIES**

for

**T-3<sup>1</sup>/<sub>4</sub> NEON LAMP • NE-51**

**11/16" MOUNTING HOLE**

**BUILT-IN RESISTOR**

(Patent No. 2,421,321)



NE-51

For 110 and 220 volts

The new NE-51 lamp is especially useful for pilot lights to be operated on commercial voltages. It has a distinctive orange-red glow and consumes very little current.

**MULTI-VUE CAP**

In addition to the advantages given by the provision of the built-in resistor, these assemblies offer another feature that is especially important in obtaining effective indication with the NE-51 lamp. The "Multi-vue" cap shown at the right gives a high degree of visibility by directing an increased amount of light toward the eye when the indicator is viewed from any angle. When it is desirable to view the electrodes directly, the clear caps shown below are very effective. For concentrating the light into a beam the metal lens holders are equipped with convex lenses as shown.

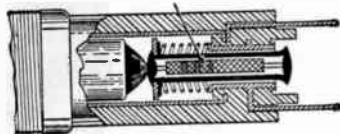
**CATALOGUE NUMBERS**

- 521308-991 Multivue cap, Screw terminals (Fig. 1)
- 531308-991 Multivue cap, Screw terminals (Fig. 2)
- 91408-931 Long clear cap, Soldering terminals (Fig. 4)
- 95408-931 Clear cap, Soldering terminals (Fig. 3)
- 81408-111 Screw-in cap, Convex lens, Soldering terminals (Fig. 20)
- 80408-831 Screw cap, Dome plastic lens, Soldering terminals (Fig. 21)
- 801308-831 Screw cap, Dome plastic lens, Screw terminals
- 51408-111 Screw cap, Convex lens, Soldering terminals (Fig. 22)
- 511308-111 Screw cap, Convex lens, Screw terminals

**COLOR**—The final figure 1 in the listed numbers indicates RED LENS COLOR. If other color is desired, change final figure to one from table below:

- Green-2\*, Amber-3, Blue-4\*, White-5, Yellow-6, Clear-7
- \*not recommended with neon lamps.*

**BUILT-IN RESISTOR**



PATENTED  
No. 2,421,321

External resistors will be furnished which will permit use of these pilot lights on voltages higher than 220 volts.

This series of pilot light assemblies is unique and has several exclusive features. The resistors are permanently built into the high quality DIALCO designed socket.

This socket is constructed with heavy molded bakelite insulation in which the terminals are securely anchored. The insulated socket is mounted in a threaded bushing equipped with nut and shakeproof washer for mounting on a panel of any usual thickness.



All of these assemblies are listed by Underwriters' Laboratories, Inc.

**Equipped with BINDING SCREWS**

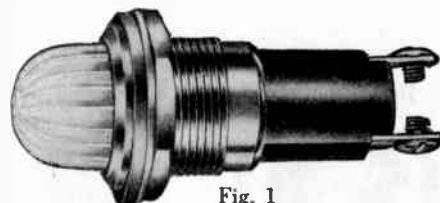


Fig. 1  
Multivue caps

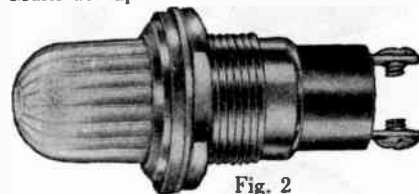


Fig. 2

**Equipped with SOLDERING TERMINALS**

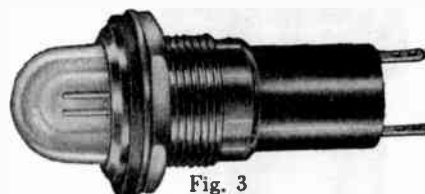


Fig. 3

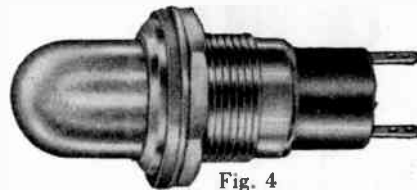


Fig. 4

**The DIAL LIGHT COMPANY of AMERICA**

Foremost Manufacturer of Pilot Lights  
NEW YORK 3, N. Y.

# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights

NEW YORK 3, N. Y.

## CAPS

All illustrations are approximately actual size

### FRICTION

Convex lens



Fig. 5

### BAYONET

Convex lens



Fig. 6

### SCREW

Torpedo lens



Fig. 7

Large convex lens



Fig. 8

### SCREW

Dome plastic lens



Fig. 9

Faceted lens



Fig. 10

Convex lens



Fig. 11

Large torpedo lens



Fig. 12

## ASSEMBLIES FOR 1 INCH MOUNTING HOLE

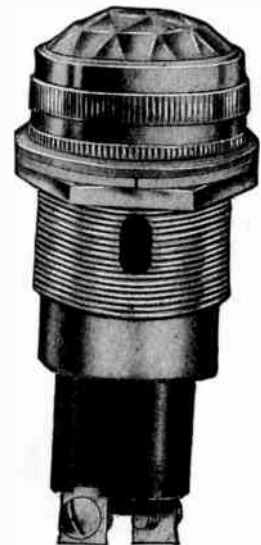
### DOUBLE CONTACT BAYONET



Screw terminals Fig. 15



Soldering terminals Fig. 17

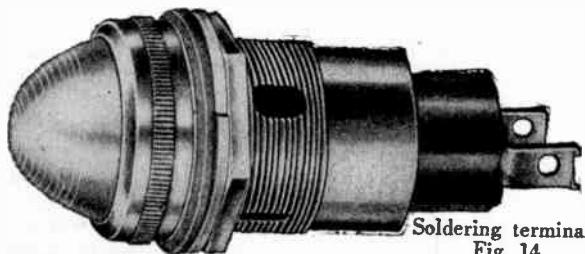


Screw terminals Fig. 16

### CANDELABRA SCREW



Screw terminals Fig. 13



Soldering terminals Fig. 14

# The DIAL LIGHT COMPANY of AMERICA

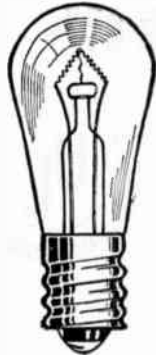
Foremost Manufacturer of Pilot Lights

NEW YORK 3, N. Y.

## CATALOG NUMBERS FOR ENCLOSED ASSEMBLIES

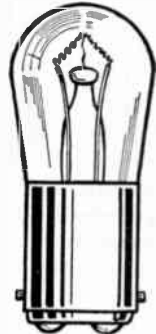
Mount in one inch clearance hole

**UNDERWRITERS' LISTED**



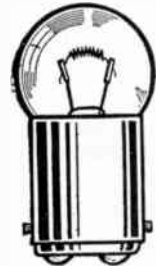
### For S-6 Lamp with Candelabra Screw Base

- 51901-111 Screw cap, Convex lens, frosted back (Fig. 11) Screw terminals (Fig. 13)
- 61901-111 Screw cap, Large convex lens, frosted back (Fig. 8) Screw terminals (Fig. 13)
- 51901-431 Screw cap, Faceted lens (Fig. 10) Screw terminals (Fig. 13)
- 19901-531 Screw cap, Large torpedo lens (Fig. 12) Screw terminals (Fig. 13)
- 51101-111 Screw cap, Convex lens, frosted back (Fig. 11) Soldering lugs (Fig. 14)
- 41901-111 Bayonet cap Convex lens (Fig. 6) Screw terminals (Fig. 13)
- 31901-111 Friction cap Convex lens (Fig. 5) Screw terminals (Fig. 13)
- 47901 Light Shield cap (Fig. 19) Binding Screw terminals (Fig. 13)
- 71101-111 Mechanical dimmer (Fig. 18) Soldering terminals (Fig. 14)
- 78101-111 Polaroid dimmer (Fig. 18) Soldering terminals (Fig. 14)



### For S-6 Lamp with Double Contact Bayonet Base

- 513202-111 Screw cap, Convex lens, frosted back (Fig. 11) Screw terminals (Fig. 16)
- 613202-111 Screw cap, Large convex lens, frosted back (Fig. 8) Screw terminals (Fig. 16)
- 513202-111 Screw cap, Faceted lens (Fig. 10) Screw terminals (Fig. 16)
- 803202-531 Screw cap, Torpedo lens (Fig. 7) Screw terminals (Fig. 16)
- 413202-111 Bayonet cap Convex lens, frosted back (Fig. 6) Screw terminals (Fig. 16)
- 313202-111 Friction cap Convex lens, frosted back (Fig. 5) Screw terminals (Fig. 16)



### For G-6 Lamp with Double Contact Bayonet Base

- 51704-111 Screw cap, Convex lens, frosted back (Fig. 11) Screw terminals (Fig. 15)
- 51704-431 Screw cap, Faceted lens (Fig. 10) Screw terminals (Fig. 15)
- 80704-531 Screw cap, Torpedo lens (Fig. 7) Screw terminals (Fig. 15)
- 80704-841 Screw cap, Dome plastic lens, matted back (Fig. 9) Screw terminals (Fig. 15)
- 51204-111 Screw cap, Convex lens, frosted back (Fig. 11) Soldering terminals (Fig. 17)
- 41204-111 Bayonet cap Convex lens (Fig. 6) Soldering terminals (Fig. 17)
- 31204-111 Friction cap Convex lens (Fig. 5) Soldering terminals (Fig. 17)



### For NE-15 Neon Glow Lamp, Candelabra Screw Base

- 51914-131 Screw cap, Convex lens (Fig. 11) Binding screw terminals (Fig. 13)
- 80914-841 Screw cap, Dome lens (Fig. 9) Binding screw terminals (Fig. 13)
- 41914-131 Bayonet cap Convex lens (Fig. 6) Binding screw terminals (Fig. 13)
- 31914-131 Friction cap Convex lens (Fig. 5) Binding screw terminals (Fig. 13)
- 51114-131 Screw cap, Convex lens (Fig. 11) Soldering terminals (Fig. 14)
- 80114-531 Screw cap, Torpedo lens (Fig. 7) Soldering terminals (Fig. 14)

**COLOR**—The final figure 1 in the above number indicates RED LENS COLOR. If other color is desired, change final figure to one from table below.

Green-2, Amber-3, Blue-4, White-5, Yellow-6, Clear-7

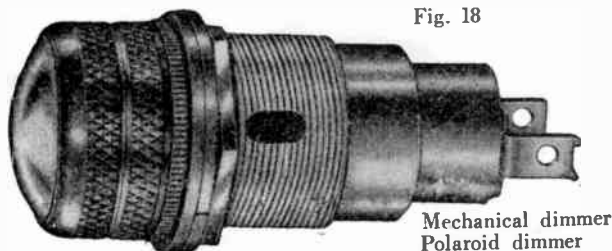


Fig. 18

Mechanical dimmer  
Polaroid dimmer

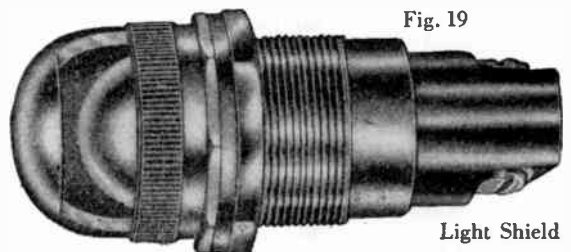


Fig. 19

Light Shield

# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights  
NEW YORK 3, N. Y.

## PILOT LIGHT ASSEMBLIES



### ASSEMBLIES FOR T-3¼ LAMPS

MINIATURE BAYONET BASE

(for low voltages)

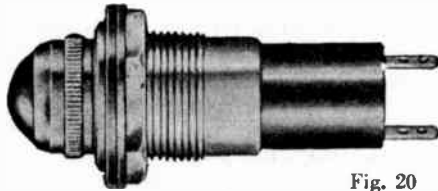


Fig. 20

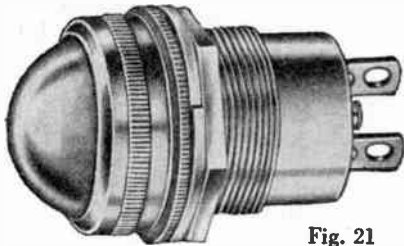


Fig. 21

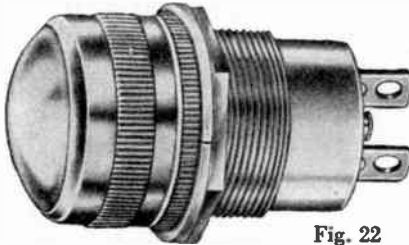


Fig. 22

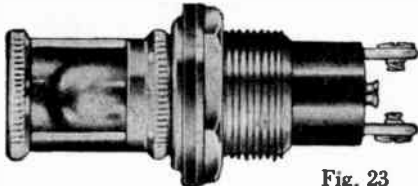


Fig. 23

### CATALOGUE NUMBERS

- 521310-991 Multivue cap, Screw terminals (Fig. 1)
- 531310-991 Multivue cap, Screw terminals (Fig. 2)
- 91410-931 Long clear cap, Soldering terminals (Fig. 4)
- 95410-931 Clear cap, Soldering terminals (Fig. 3)
- 81410-111 Screw-in cap, Convex lens, Soldering terminals (Fig. 20)
- 80410-831 Screw cap, Dome plastic lens, Soldering terminals (Fig. 21)
- 801310-831 Screw cap, Dome plastic lens, Screw terminals
- 51410-111 Screw cap, Convex lens, Soldering terminals (Fig. 22)
- 511310-111 Screw cap, Convex lens, Screw terminals
- 211310 Light shield cap Screw terminals (Fig. 23)
- 93410-111 Polaroid dimmer cap, Convex lens, Soldering terminals (Fig. 25)
- 98410-111 Dimmer cap, Convex lens, Soldering terminals (Fig. 24)



**COLOR**—The final figure 1 in the listed numbers indicates RED LENS COLOR. If other color is desired, change final figure to one from table below:

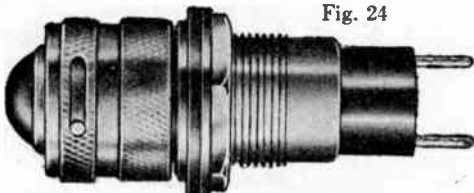
Green-2, Amber-3, Blue-4, White-5, Yellow-6, Clear-7

Smaller assemblies as illustrated in Figs. 20, 23, 24 and 25 mount in 11/16" clearance hole. Figs. 21 and 22 require 1" clearance hole.

### MECHANICAL and POLAROID DIMMERS

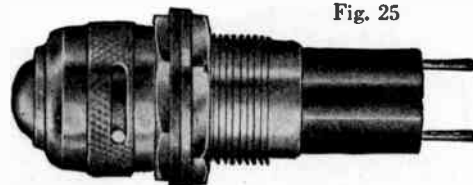
mechanical

Fig. 24



polaroid

Fig. 25



Any of the mechanical dimmers can be supplied in either the "Complete Blackout" or the regulation type.

# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights  
NEW YORK 3, N. Y.

## PILOT LIGHT ASSEMBLIES

A SELECTION OF OPEN TYPES  
For T-3 $\frac{1}{4}$  Low voltage Incandescent Lamps



Miniature Screw Base



FIG. 26

Typical assemblies for bayonet base lamp.  
Available also for screw type, see listing below.



Miniature Bayonet Base

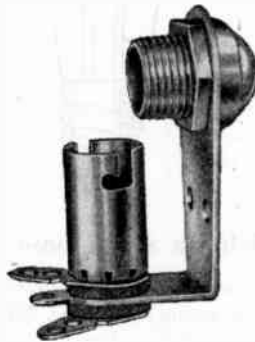


FIG. 27

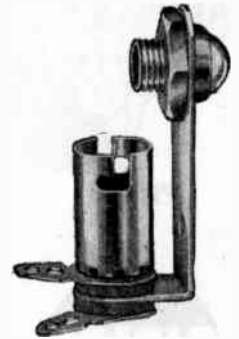


FIG. 28



FIG. 29

Octagon lock nut and bracket on these two units welded into one-piece construction.

### CATALOGUE NUMBERS

#### Assemblies for T-3 $\frac{1}{4}$ miniature bayonet base lamps

No. 810B-431	Faceted	$\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Fig. 26
No. 710-121	Convex	$\frac{1}{2}$ " lens.	For $\frac{7}{16}$ " mounting hole.	Fig. 27
No. 755-621	Convex	$\frac{11}{32}$ " lens.	For $\frac{9}{32}$ " mounting hole.	Fig. 28
No. 857B-431	Faceted	$\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Fig. 29
No. 67B-111	Convex	$\frac{3}{4}$ " lens.	For $\frac{13}{16}$ " mounting hole.	Fig. 30

#### Assemblies for T-3 $\frac{1}{4}$ miniature screw base lamps

No. 810M-431	Faceted	$\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Similar to Fig. 26
No. 510-121	Convex	$\frac{1}{2}$ " lens.	For $\frac{7}{16}$ " mounting hole.	Similar to Fig. 27
No. 555-621	Convex	$\frac{11}{32}$ " lens.	For $\frac{9}{32}$ " mounting hole.	Similar to Fig. 28
No. 855-431	Faceted	$\frac{1}{2}$ " lens.	For $\frac{1}{16}$ " mounting hole.	Similar to Fig. 29
No. 66M-111	Convex	$\frac{3}{4}$ " lens.	For $\frac{13}{16}$ " mounting hole.	Similar to Fig. 30

**COLOR**—The final figure 1 in the listed numbers indicates RED LENS COLOR. If other color is desired, change final figure to one from table below:

Green-2, Amber-3, Blue-4, White-5, Yellow-6, Clear-7

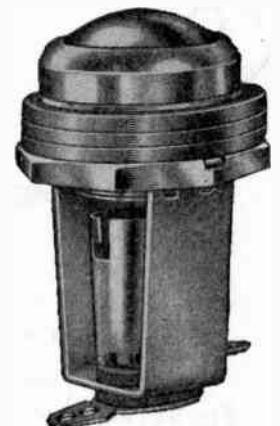


FIG. 30

# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights

NEW YORK 3, N. Y.

## PILOT LIGHT ASSEMBLIES

### A SELECTION OF OPEN TYPES

For Candelabra Screw Base Lamps

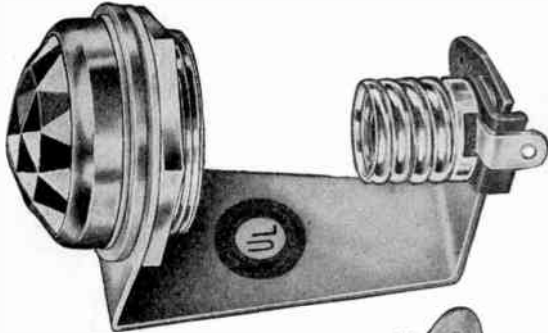


FIG. 31

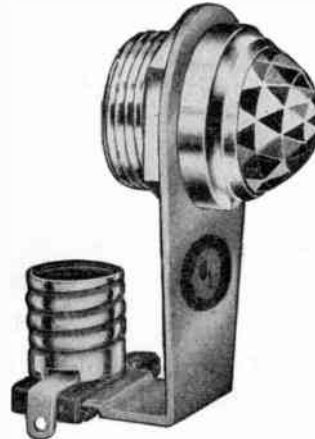


FIG. 33

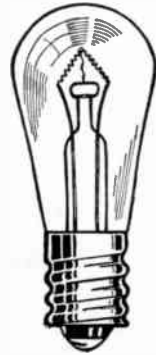


FIG. 32

For S-6 Incandescent Lamps, candelabra screw base

- No. 10-18-14-431 Faceted  $\frac{1}{2}$ " Lens (for  $\frac{7}{16}$ " mounting hole) (Fig. 32)
- No. 25-18-15-431 Faceted  $\frac{3}{8}$ " Lens (for  $\frac{11}{16}$ " mounting hole) (Fig. 33)
- No. 31-18-16-431 Faceted 1" Lens (for 1" mounting hole) (Fig. 31)

All of the above assemblies are listed by Underwriters' Laboratories, Inc.

**COLOR**—The final figure 1 in the listed numbers indicates RED LENS COLOR. If other color is desired, change final figure to one from table below:

Green-2, Amber-3, Blue-4, White-5, Yellow-6, Clear-7

*Octagon lock nut and bracket on these two units welded into one-piece construction.*



FIG. 34

For G-6 Low voltage lamps, candelabra screw base

- No. 610-121 Convex  $\frac{1}{2}$ " lens Fig. 34 (for  $\frac{7}{16}$ " mounting hole)

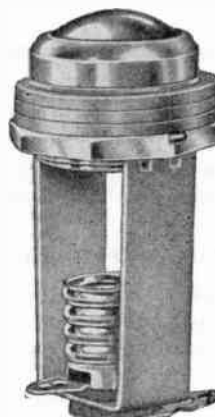


FIG. 36

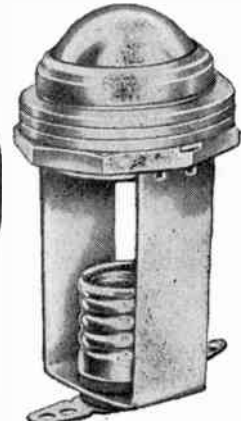


FIG. 35

For NE-45 Neon Glow Lamps, candelabra screw base

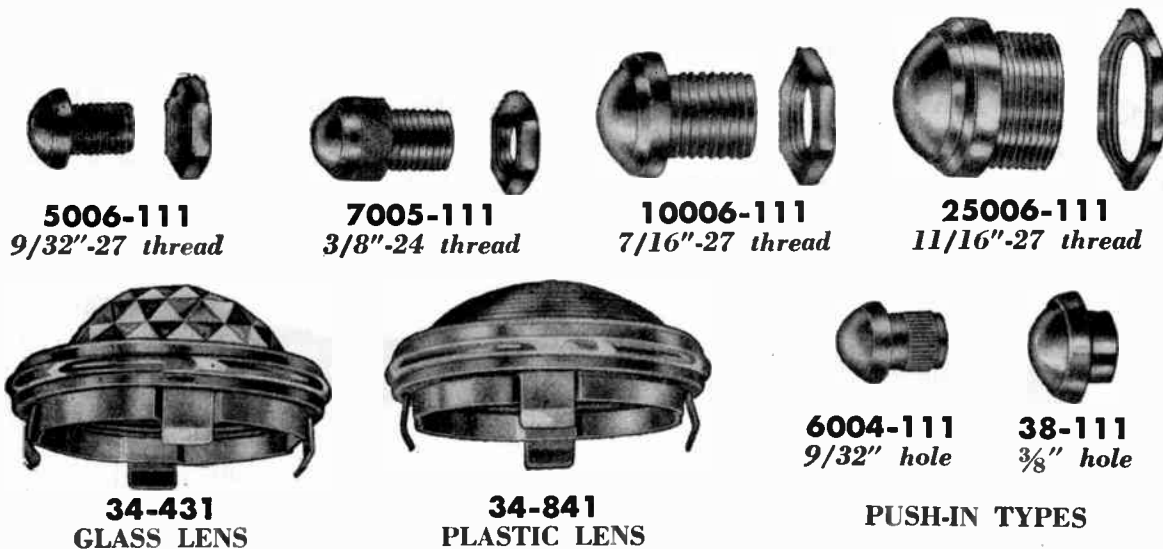
- No. 67BN-831 Dome Plastic Lens ( $\frac{3}{4}$ " diam.) Fig. 35
- No. 66N-131 Convex Glass Lens ( $\frac{3}{4}$ " diam.) Fig. 36 (Both mount in  $\frac{13}{16}$ " hole. Cap removable)

# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights  
NEW YORK 3, N. Y.

## Lens Holders with Lenses for Panel Mounting

Screw Types Are Complete With Nut for Shank

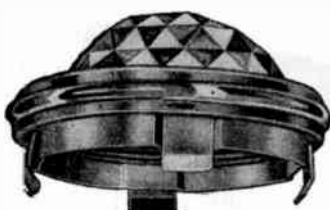


**5006-111**  
9/32"-27 thread

**7005-111**  
3/8"-24 thread

**10006-111**  
7/16"-27 thread

**25006-111**  
11/16"-27 thread



**34-431**  
GLASS LENS



**34-841**  
PLASTIC LENS



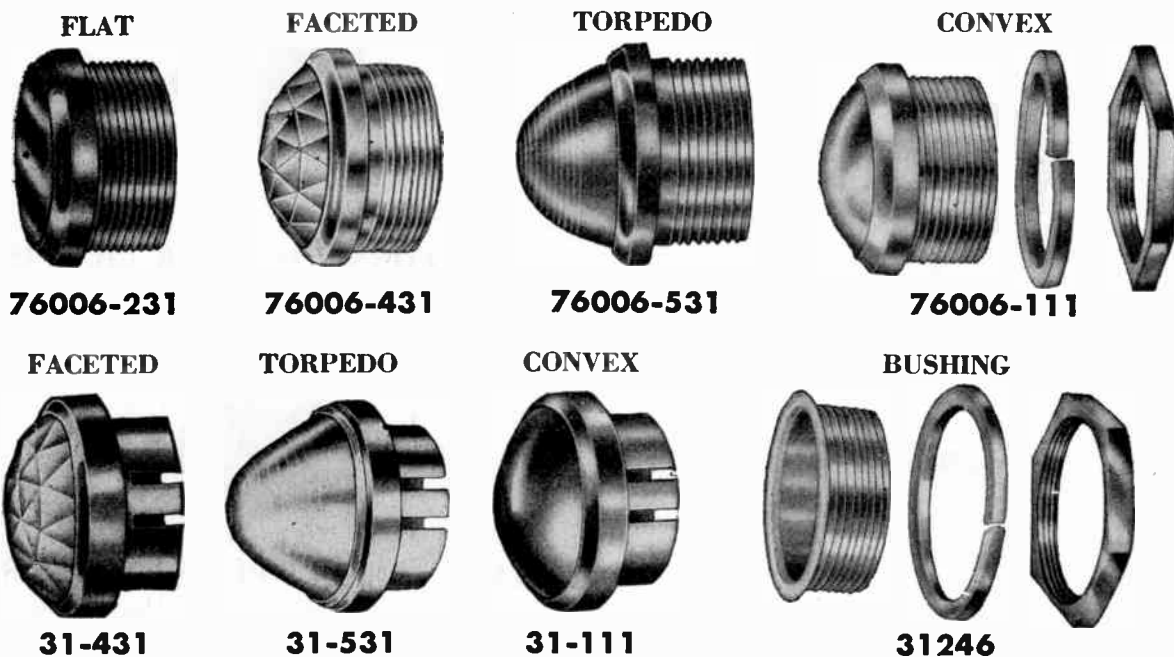
**6004-111**  
9/32" hole



**38-111**  
3/8" hole

PUSH-IN TYPES

*These holders snap into 1 1/2" hole*



**FLAT**  
**76006-231**

**FACETED**  
**76006-431**

**TORPEDO**  
**76006-531**

**CONVEX**  
**76006-111**

**FACETED**  
**31-431**

**TORPEDO**  
**31-531**

**CONVEX**  
**31-111**

**BUSHING**  
**31246**

The above two groups mount in 1" clearance hole. The upper series lock to the panel and are tamper proof. The lower series permit lamp replacement from the front of the panel.

**LENS COLOR**—The final figure 1 in the listed numbers indicates RED LENS COLOR. If other color is desired, change final figure to one from table below:

Green-2, Amber-3, Blue-4, White-5, Yellow-6, Clear-7



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# The DIAL LIGHT COMPANY of AMERICA

Foremost Manufacturer of Pilot Lights  
NEW YORK 3, N. Y.

---

## CONNECTORS FOR SINGLE CONDUCTOR CABLE FOR MICROPHONES - SPEAKERS - PICK-UPS - JACKS

*(using cable shield for second conductor)*

The fittings shown here are designed for use with standard metal shielded single conductor cable up to  $\frac{1}{4}$ " diameter. These connectors are heavily constructed from solid brass and all exposed parts are chrome plated and highly polished.

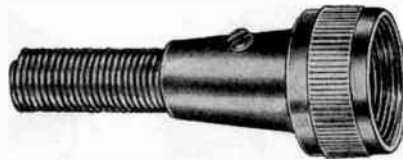
The cable end connectors are provided with rugged wire spring protectors which prevent sharp bends at the connection. The protector is soldered to the cable sheath and secured in the connector by a set screw so that all strain is relieved from the conductor.



No. 101

### MALE CONNECTOR FOR CABLE

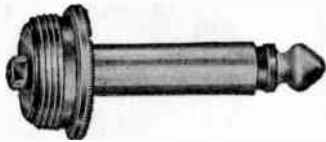
With spring protector to prevent sharp bending of cable. Solders to cable sheath — secured by set screw.



No. 100

### FEMALE CONNECTOR FOR CABLE

With spring protector to prevent sharp bending of cable. Solders to cable sheath — secured by set screw.



No. 102

### PLUG WITH MALE CONNECTOR

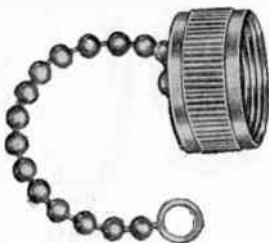
Fits standard jacks



No. 51

### MALE CONNECTOR FOR CHASSIS

Has sprung center contact which grounds before cable connection is broken preventing open circuit howls.



No. 103

### CAP AND CHAIN

To protect unused male connectors. Chain secured by screw prevents loss when removed to make connection.



No. 50

### MALE CONNECTOR FOR CHASSIS

Shell grounds to panel — or may be insulated by washers. Fit  $\frac{3}{8}$ " — 24 threaded hole or may be secured by nut.

No. 50 P

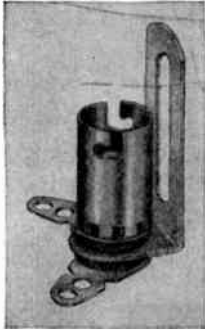
### MALE CONNECTOR FOR CHASSIS *(Similar to No. 50 above)*

Designed for force fit in hole in panel. Requires no nut to secure in place.

# SOCKETS BRACKET MOUNTED



## MINIATURE BAYONET



No. 7 Series



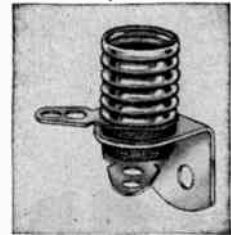
No. 2 Series  
FIBRE TUBE

Wire  
Leads



No. 3 Series  
MOLDED BAKELITE

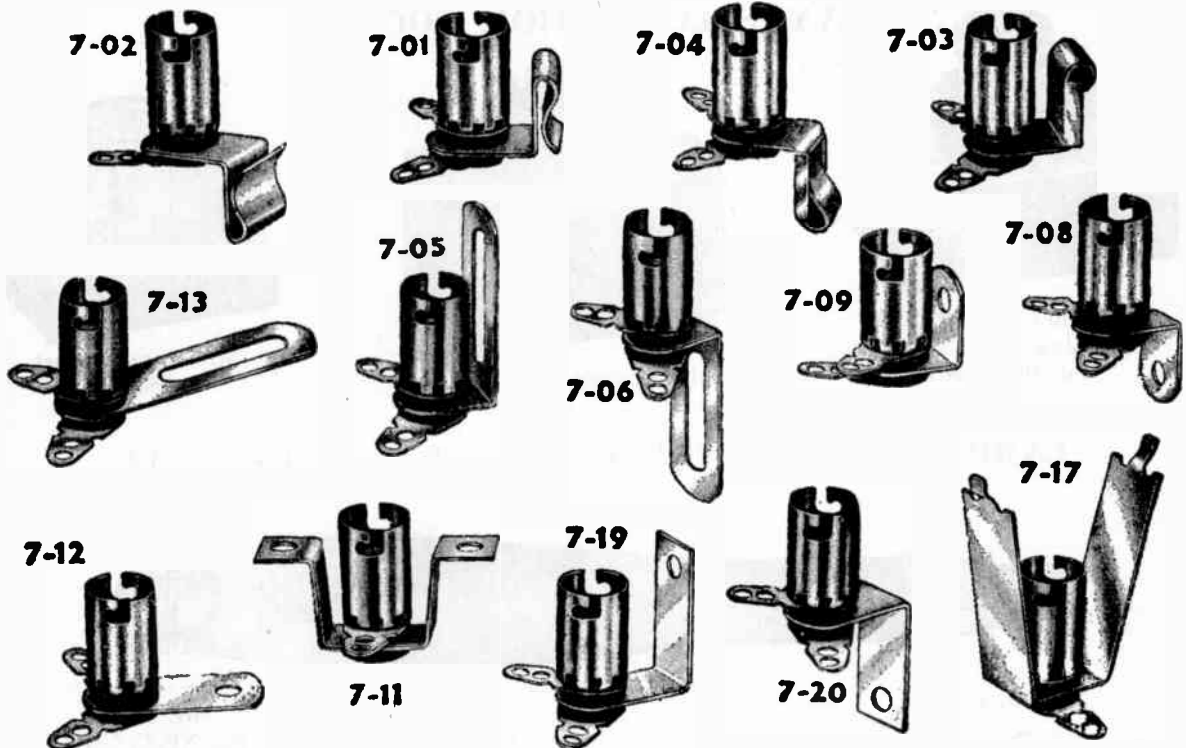
## MINIATURE SCREW



No. 5 Series

- | Socket suffix | Bracket Description   |
|---------------|---|
| —01           | —Plain clip, upturned   |
| —02           | —Plain clip, downturned   |
| —03           | —Clip with ears, upturned   |
| —04           | —Clip with ears, downturned   |
| —05           | —Right angle, upturned, slotted. Slot— $\frac{7}{8}$ " x $\frac{3}{16}$ "   |
| —06           | —Right angle, downturned, slotted. Slot— $\frac{7}{8}$ " x $\frac{3}{16}$ " |
| —07           | —Plain socket, no bracket   |
| —08           | —Right angle, downturned, short. Hole Size— $\frac{5}{32}$ "                |
| —09           | —Right angle, upturned, short. Hole Size— $\frac{5}{32}$ "                  |

- | Socket suffix | Bracket Description  |
|---------------|--|
| —11           | —Square U-shaped. Hole Size— $\frac{5}{32}$ "                            |
| —12           | —Horizontal (no bend), short. Hole Size— $\frac{5}{32}$ "                |
| —13           | —Horizontal (no bend), slotted. Slot— $\frac{7}{8}$ " x $\frac{3}{16}$ " |
| —14           | —Vee with locking tongue, short— $1\frac{1}{4}$ "                        |
| —15           | —Vee with locking tongue, short— $1\frac{1}{4}$ "                        |
| —16           | —Vee with locking tongue, intermediate— $1\frac{5}{16}$ "                |
| —17           | —Vee with locking tongue, long— $1\frac{3}{8}$ "                         |
| —18           | —Vee with locking tongue, long— $1\frac{1}{2}$ "                         |
| —19           | —Right angle, upturned, long. Hole Size— $\frac{9}{64}$ "                |
| —20           | —Right angle, downturned, long. Hole Size— $\frac{9}{64}$ "              |





# SOCKETS

BRACKET MOUNTED

75 Watts, 125 Volts

UNDERWRITERS'



LISTED

## No. 4 Series Wire Leads

Insulated with heavy molded Bakelite. Square shoulder locks into square hole in bracket—all securely held by large tubular rivet.

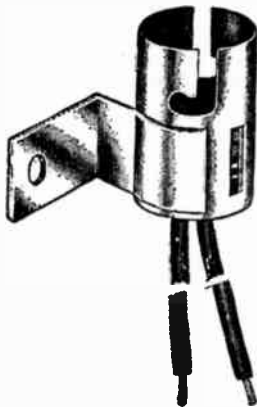


IDEAL FOR S-6  
and C-7 LAMPS

## No. 18 Series



Soldering Terminals  
(locked in position)



## No. 12 Series — Double Contact Bayonet Ceramic Insulating Disk

The new "12" series socket is constructed with a high quality ceramic disk supporting the socket contacts. Recesses in the disk receive the lead wires so that no live metal is exposed.

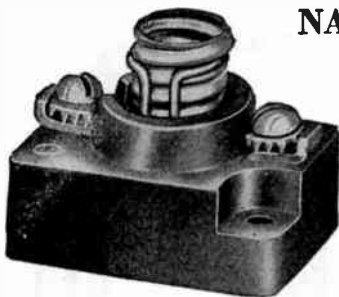
### Wire Leads

The standard flexible leads are of plastic insulated approved wire, 18 gauge. Usual length is 8 inches; longer leads will be supplied when specified.

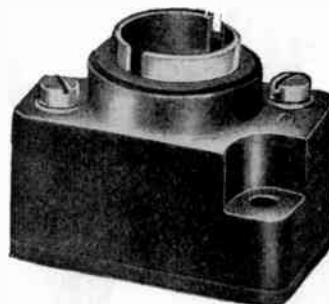
## No. 12 Series CERAMIC DISK

### Many Bracket Types

## NAVY SPECIFICATION SOCKETS



Candelabra screw 9S2036  
Candelabra screw 9S5038  
(not illustrated)



Double Contact bayonet 9S4634



Miniature bayonet  
9S4931

## LAMP INSTALLER

The DIALCO lamp installer shown below is a useful tool in installing lamps and in servicing pilot lights.

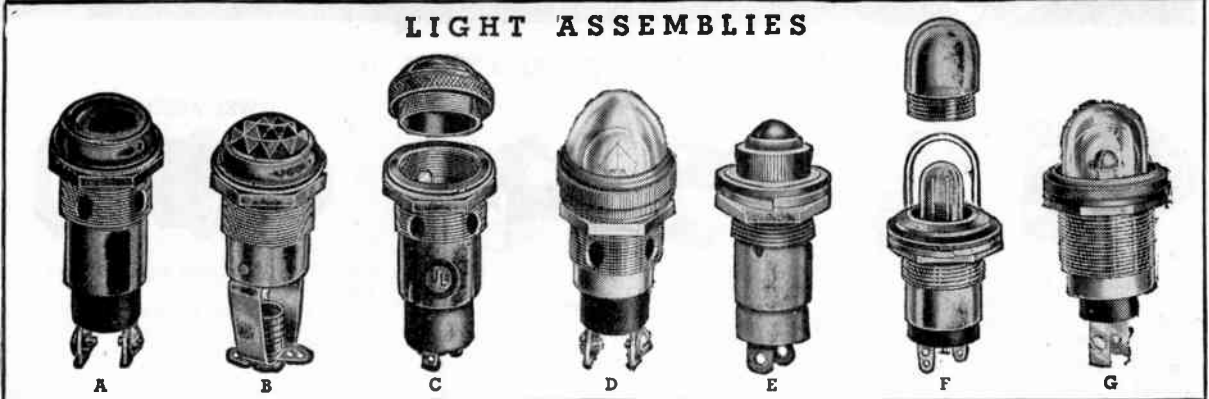


No. L-73

No. L-45  
For NE-45 Neon



## LIGHT ASSEMBLIES



JOHNSON Indicator Light Assemblies are outstanding examples of sound engineering design, excellent material and careful workmanship. Their use is your assurance of complete satisfaction.

The listings on these two pages include only those standard units in greatest demand but many other types are readily available. Special assemblies can be furnished in production quantities.

Cat. No.	List Price	Illus.	Mounting Hole Size	Length Behind Panel <sup>1</sup>	Bulb Shape	Lamp Base	Jewels			Terminals		Insulation	Underwriter Approved	Color
							Type	Size	Holder	No.	Type			
147-800	\$1.05	B	1"	2 3/8"	G3 1/2, T3 3/4	Min. Screw	Faceted	1"	Friction	2	Solder	Fiber		SPECIFY COLOR: RED, GREEN, AMBER, BLUE, OPAL, CLEAR. FOR NEON DO NOT USE BLUE, GREEN, OPAL
147-801	1.05	B	1"	2 3/8"	G3 1/2, T3 3/4	Min. Screw	Smooth	1"	Friction	2	Solder	Fiber		
147-802	1.10	B	1"	2 3/8"	S6	Cand. Screw	Faceted	1"	Friction	2	Solder	Fiber		
147-803	1.10	B	1"	2 3/8"	S6	Cand. Screw	Smooth	1"	Friction	2	Solder	Fiber		
147-804	1.10	B	1"	2 3/8"	G3 1/2, T3 3/4	Min. Bay.	Faceted	1"	Friction	2	Solder	Fiber		
147-805	1.10	B	1"	2 3/8"	G3 1/2, T3 3/4	Min. Bay.	Smooth	1"	Friction	2	Solder	Fiber		
147-1000	1.40	A	1"	2 3/8"	S6	Cand. Screw	Faceted	1"	Friction	2	Solder	Porcelain	Yes	
147-1001	1.40	A	1"	2 3/8"	S6	Cand. Screw	Smooth	1"	Friction	2	Solder	Porcelain	Yes	
147-1002	1.50	A	1"	2 3/8"	S6	Cand. Screw	Colored Disc <sup>6</sup>	1"	Friction	2	Solder	Porcelain	Yes	
147-1003	1.40	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Faceted	1"	Friction	2	Solder	Porcelain	Yes	
147-1004	1.40	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Smooth	1"	Friction	2	Solder	Porcelain	Yes	
147-1005	1.50	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Colored Disc <sup>6</sup>	1"	Friction	2	Solder	Porcelain	Yes	
147-1032	1.65	A	1"	2 3/8"	S6	Cand. Screw	Faceted	1"	Friction	2	Screw	Phenolic	Yes	
147-1033	1.65	A	1"	2 3/8"	S6	Cand. Screw	Smooth	1"	Friction	2	Screw	Phenolic	Yes	
147-1034	1.75	A	1"	2 3/8"	S6	Cand. Screw	Colored Disc <sup>6</sup>	1"	Friction	2	Screw	Phenolic	Yes	
147-1035	1.65	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Faceted	1"	Friction	2	Screw	Phenolic	Yes	
147-1036	1.65	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Smooth	1"	Friction	2	Screw	Phenolic	Yes	
147-1037	1.75	A	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Colored Disc <sup>6</sup>	1"	Friction	2	Screw	Phenolic	Yes	
147-1050	1.75	A	1"	2 1/2"	G6	S. C. Cand. Bay.	Faceted	1"	Friction	1	Screw	H. Rubber		
147-1051	1.75	A	1"	2 1/2"	G6	S. C. Cand. Bay.	Smooth	1"	Friction	1	Screw	H. Rubber		
147-1052	1.85	A	1"	2 1/2"	G6	S. C. Cand. Bay.	Colored Disc <sup>6</sup>	1"	Friction	1	Screw	H. Rubber		
147-1053	1.75	A	1"	2 1/2"	G6	D. C. Cand. Bay.	Faceted	1"	Friction	2	Screw	H. Rubber	Yes	
147-1054	1.75	A	1"	2 1/2"	G6	D. C. Cand. Bay.	Smooth	1"	Friction	2	Screw	H. Rubber	Yes	
147-1055	1.85	A	1"	2 1/2"	G6	D. C. Cand. Bay.	Colored Disc <sup>6</sup>	1"	Friction	2	Screw	H. Rubber	Yes	
147-1056	1.75	A	1"	2 1/2"	G6, NE48	D. C. Cand. Bay. <sup>1</sup>	Faceted	1"	Friction	2	Screw	H. Rubber	Yes	
147-1057	1.75	A	1"	2 1/2"	G6, NE48	D. C. Cand. Bay. <sup>1</sup>	Smooth	1"	Friction	2	Screw	H. Rubber	Yes	
147-1058	1.85	A	1"	2 1/2"	G6, NE48	D. C. Cand. Bay. <sup>1</sup>	Colored Disc <sup>6</sup>	1"	Friction	2	Screw	H. Rubber	Yes	
147-1076	2.00	A	1"	2 3/8"	G6, NE48	D. C. Cand. Bay. <sup>2</sup>	Faceted	1"	Friction	2	Screw	H. Rubber	Yes	
147-1077	2.00	A	1"	2 3/8"	G6, NE48	D. C. Cand. Bay. <sup>2</sup>	Smooth	1"	Friction	2	Screw	H. Rubber	Yes	
147-1078	2.10	A	1"	2 3/8"	G6, NE48	D. C. Cand. Bay. <sup>2</sup>	Colored Disc <sup>6</sup>	1"	Friction	2	Screw	H. Rubber	Yes	
147-1110	1.15	E	1 1/8"	1 3/8"	T3 3/4	Min. Bay.	Faceted	1 1/2"	Threaded	2	Solder	Phenolic		
147-1111	1.15	E	1 1/8"	1 3/8"	T3 3/4	Min. Bay.	Smooth	1 1/2"	Threaded	2	Solder	Phenolic		
147-1112	1.15	E	1 1/8"	1 3/8"	G3 1/2	Min. Bay.	Faceted	1 1/2"	Threaded	2	Solder	Phenolic		
147-1113	1.15	E	1 1/8"	1 3/8"	G3 1/2	Min. Bay.	Smooth	1 1/2"	Threaded	2	Solder	Phenolic		
147-1142	1.10	F	1 1/8"	1 3/8"	T3 3/4	Min. Bay. <sup>3</sup>	Lucite	5/8"	Threaded	2	Solder	Phenolic	Yes	
147-1143	1.25	F	1 1/8"	1 3/8"	T3 3/4, NES1	Min. Bay. <sup>3</sup>	Lucite	5/8"	Threaded	2	Solder	Phenolic	Yes	
147-1144	1.25	F	1 1/8"	1 3/8"	T3 3/4, NES1	Min. Bay. <sup>4</sup>	Lucite	5/8"	Threaded	2	Solder	Phenolic	Yes	
147-1200	1.65	C	1"	2 3/8"	S6	Cand. Screw	Faceted	1"	Threaded	2	Solder	Porcelain	Yes	
147-1201	1.65	C	1"	2 3/8"	S6	Cand. Screw	Smooth	1"	Threaded	2	Solder	Porcelain	Yes	
147-1202	1.75	C	1"	2 3/8"	S6	Cand. Screw	Colored Disc <sup>6</sup>	1"	Threaded	2	Solder	Porcelain	Yes	
147-1209	1.90	C	1"	2 3/8"	S6	Cand. Screw	Faceted	1"	Threaded	2	Screw	Phenolic	Yes	
147-1210	1.90	C	1"	2 3/8"	S6	Cand. Screw	Smooth	1"	Threaded	2	Screw	Phenolic	Yes	
147-1211	2.00	C	1"	2 3/8"	S6	Cand. Screw	Colored Disc <sup>6</sup>	1"	Threaded	2	Screw	Phenolic	Yes	
147-1212	1.90	C	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Faceted	1"	Threaded	2	Screw	Phenolic	Yes	
147-1213	1.90	C	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Smooth	1"	Threaded	2	Screw	Phenolic	Yes	
147-1214	2.00	C	1"	2 3/8"	T4 1/2, NE45	Cand. Screw	Colored Disc <sup>6</sup>	1"	Threaded	2	Screw	Phenolic	Yes	
147-1217	1.90	G	1"	1 1/2"	T4 1/2, NE45	Cand. Screw	Lucite	1"	Threaded	2	Screw	Phenolic	Yes	
147-1218	1.60	G	1"	1 1/2"	T3 3/4, NES1	Min. Bay. <sup>5</sup>	Lucite	1"	Threaded	2	Solder	Phenolic	Yes	
147-1219	2.10	G	1"	2 3/8"	T4 1/2, G6, NE48	D. C. Cand. Bay. <sup>1</sup>	Lucite	1"	Threaded	2	Screw	H. Rubber	Yes	
147-1220	2.25	G	1"	2 3/8"	T4 1/2, G6, NE48	D. C. Cand. Bay. <sup>1</sup>	Lucite	1"	Threaded	2	Screw	H. Rubber	Yes	
147-1600	2.00	D	1"	2 3/8"	S6	Cand. Screw	Glass	1 1/8"	Threaded	2	Screw	Phenolic	Yes	
147-1604	2.00	D	1"	1 1/2"	G6	S. C. Cand. Bay.	Glass	1 3/8"	Threaded	1	Screw	H. Rubber		
147-1605	2.00	D	1"	1 1/2"	G6	D. C. Cand. Bay.	Glass	1 3/8"	Threaded	2	Screw	H. Rubber	Yes	

(1) Requires 30,000 ohm external resistor with NE48.  
 (2) Has built in 30,000 ohm resistor for NE48.  
 (3) Has built in 200,000 ohm resistor for NE51.  
 (4) Has built in 100,000 ohm resistor for NE51, brighter glow but decreased life.  
 (5) Requires 200,000 ohm external resistor for NE51.  
 (6) See Colored Disc explanation at right.  
 (7) Max. length from front of panel.  
 (8) Do not use with bulb over 3 watts.

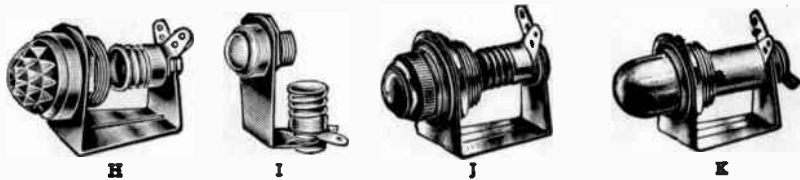
COLORED DISCS—Where this designation (6) appears, a colored plastic disc is placed behind a clear sandblasted (frosted) smooth jewel, to conceal color until lighted. Also prevents external light from giving appearance of bulb being lighted.

In addition, lettering, numerals, or insignia may be printed on a plastic disc back of the jewel, and arranged to be visible either continuously or only after lamp is lighted.



# E. F. JOHNSON Company WASECA, MINNESOTA

## BRACKET TYPE PILOT LIGHTS AND JEWEL ASSEMBLIES



Colors, all types: Red, Green, Amber, Blue, Opal, Clear.

One-inch jewel, polished chrome bezel, with mounting sleeve to fit 1-inch hole, fiber washer and nut.

Cat. No.	List Price
147-110—Faceted Jewel	\$0.70
147-111—Smooth Jewel	.70
147-112—Colored Disc	.80

Cat. No.	List Price	Illustration	Mounting Hole Size	Lgth. Behind Panel	Bulb (1) Shape	Base	Jewel		Color
							Type	Size	
147-100	\$0.80	H	1"	1 1/2"	G3 1/2, T3 1/4	Min. Scr.	Faceted (4)	1"	S
147-101	.80	H	1"	1 1/2"	G3 1/2, T3 1/4	Min. Scr.	Smooth (4)	1"	P
147-103	.85	H	1"	2 1/8"	S6	Cand. Scr.	Faceted (4)	1"	E
147-104	.85	H	1"	2 1/8"	S6	Cand. Scr.	Smooth (4)	1"	C
147-106	.85	H	1"	1 1/2"	G3 1/2, T3 1/4	Min. Scr.	Faceted (4)	1"	I
147-107	.85	H	1"	1 1/2"	G3 1/2, T3 1/4	Min. Scr.	Smooth (4)	1"	F
147-200	.80	I	1 1/8"	1 1/4"	G3 1/2	Min. Scr.	Faceted	3/8"	Y
147-201	.80	I	1 1/8"	1 1/4"	G3 1/2	Min. Scr.	Smooth	3/8"	C
147-203	.65	I	1 1/8"	1 1/4"	S6	Cand. Scr.	Faceted	3/8"	O
147-204	.65	I	1 1/8"	1 1/4"	S6	Cand. Scr.	Smooth	3/8"	L
147-208	.85	I	1 1/8"	1"	G3 1/2	Min. Bay.	Faceted	3/8"	O
147-207	.85	I	1 1/8"	1"	G3 1/2	Min. Bay.	Smooth	3/8"	R
147-300	.40	I	7/8"	1 1/4"	G3 1/2	Min. Scr.	Faceted	1/2"	C
147-301	.40	I	7/8"	1 1/4"	G3 1/2	Min. Scr.	Smooth	1/2"	Clear
147-303	.45	I	7/8"	1 1/4"	S6	Cand. Scr.	Faceted	1/2"	Red
147-304	.45	I	7/8"	1 1/4"	S6	Cand. Scr.	Smooth	1/2"	Green
147-306	.45	I	7/8"	1"	G3 1/2	Min. Bay.	Faceted	1/2"	Amber
147-307	.45	I	7/8"	1"	G3 1/2	Min. Bay.	Smooth	1/2"	Blue
147-400	.55	J	1 1/8"	1 1/4"	G3 1/2, T3 1/4	Min. Scr.	Faceted (4)	1/2"	Opal
147-401	.55	J	1 1/8"	1 1/4"	G3 1/2, T3 1/4	Min. Scr.	Smooth (4)	1/2"	
147-403	.60	J	1 1/8"	1 1/4"	G3 1/2, T3 1/4	Min. Bay.	Faceted (4)	1/2"	
147-404	.60	J	1 1/8"	1 1/4"	G3 1/2, T3 1/4	Min. Bay.	Smooth (4)	1/2"	
147-406	.55	K	1 1/8"	1 1/4"	T3 1/4	Min. Bay.	Lucite (4)	3/8"	
147-407	.70	K	1 1/8"	1 1/4"	T3 1/4, NE51	Min. Bay. (2)	Lucite (4)	3/8"	
147-408	.70	K	1 1/8"	1 1/4"	T3 1/4, NE51	Min. Bay. (3)	Lucite (4)	3/8"	
147-500	.33	I	3/8"	1 1/4"	G-3 1/2	Min. Scr.	Faceted	3/8"	
147-501	.33	I	3/8"	1 1/4"	G-3 1/2	Min. Scr.	Smooth	3/8"	For Neon
147-503	.37	I	3/8"	1 1/4"	G-3 1/2	Min. Bay.	Faceted	3/8"	DO NOT
147-504	.37	I	3/8"	1 1/4"	G-3 1/2	Min. Bay.	Smooth	3/8"	Use:
147-700	.80	H	1 1/8"	1 1/4"	G-3 1/2	Min. Scr.	Faceted	3/8"	Blue
147-701	.80	H	1 1/8"	1 1/4"	G-3 1/2	Min. Scr.	Smooth	3/8"	Green
147-703	.85	H	1 1/8"	1 1/2"	G-3 1/2	Min. Bay.	Faceted	3/8"	Opal
147-704	.85	H	1 1/8"	1 1/2"	G-3 1/2	Min. Bay.	Smooth	3/8"	

3/8-inch jewel in polished chrome holder, fits 1/2-inch mounting hole.

147-210—Faceted Jewel	\$0.40
147-211—Smooth Jewel	.40

1/2-inch jewel, nickel-plated holder and nut, fits 1/4-inch mounting hole.

147-310—Faceted Jewel	\$0.25
147-311—Smooth Jewel	.25

3/8-inch jewel, nickel-plated holder and nut, fits 3/8-inch mounting hole.

147-510—Faceted Jewel	\$0.20
147-511—Smooth Jewel	.20

1/2-inch jewel, nickel-plated, threaded holder and mounting sleeve to fit 1/4-inch hole.

147-410—Faceted Jewel	\$0.40
147-411—Smooth Jewel	.40

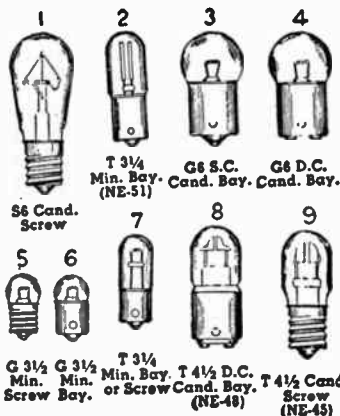
### SPECIAL TYPES

JOHNSON manufactures a complete line of bracket-type pilot lights and jewel assemblies. Illustrated are only a few of the more popular types. JOHNSON can readily fill your requirements for any type, regardless of specifications.

- (1) See bulb and base illustrations below.
  - (2) With 200,000-ohm built-in resistor for NE51.
  - (3) With 100,000-ohm resistor. Brighter glow, reduced lamp life.
  - (4) Bulb removable from front of panel.
- \* See page G-11 for explanation.

### BULB SPECIFICATIONS

Bulbs used on all pilot lights may be identified from these illustrations, but are not included in prices.



### PANEL LIGHT

For front panel illumination. Has polished nickel hood, easily removable for lamp replacement; can be rotated to any position. Fits 1/2" mounting hole. Made for miniature bayonet or screw base, T 3/4 or G 3 1/2, bulbs.



Cat. No.	List Price
147-330—Miniature Screw Base	\$0.80
147-329—Miniature Bayonet Base	.80

### VARIABLE LIGHT INTENSITY

Pilot lights similar to 147-400, -800, -1110, -1200 can be furnished with either polarized or shutter type variable light intensity jewel holders. Information on request.

### DIAL LIGHT BRACKETS

Brackets insulated on all types. Many other styles and combinations can be furnished from available tools, also with wire leads.



147-610	147-611	147-640	147-641	147-630	147-631	147-800	147-820	147-801	147-821
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Cat. No.	Socket	List Price
147-600	Min. Screw (Bracket Down)	\$0.13
147-601	Min. Screw (Bracket Up)	.13
147-610	Min. Bay. (Bracket Down)	.16
147-611	Min. Bay. (Bracket Up)	.16
147-620	Cand. Screw (Bracket Down)	.15
147-621	Cand. Screw (Bracket Up)	.15
147-630	Min. Bay. (Bracket Down)	.17
147-631	Min. Bay. (Bracket Up)	.17
147-640	Min. Screw (Bracket Down)	.14
147-641	Min. Screw (Bracket Up)	.14

**DO NOT FAIL TO SPECIFY COLOR OF JEWELS. PRICES DO NOT INCLUDE BULBS.**

# GENERAL ELECTRIC

## RADIO DIAL LAMPS

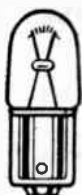
Designed and engineered for the job

**B**ECAUSE of the vibration conditions under which General Electric radio dial lights must operate, General Electric devotes special care to their design and manufacture. Filaments are designed to vibrate without damage and are secured by a shake-proof joint.

General Electric research is constantly at work to assure the quality and serviceability of G-E radio dial lamps. Shock tests, vibration tests and base torsion tests are used in the laboratory to make certain your customers will get good service from the General Electric lamps you install.

Features like these make it worthwhile for you to sell and install G-E miniature lamps:

1. Dependable, trouble-free performance.
2. High level of maintained light output.
3. Low current consumption.
4. Long life.
5. Profitable to handle.
6. Preferred by both dealers and customers.



T-3/4  
Miniature  
Bayonet



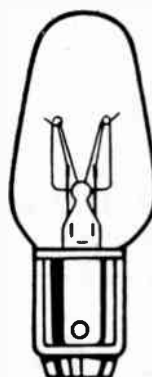
T-3/4  
Miniature  
Screw



G-3 1/2  
Miniature  
Bayonet



G-4 1/2  
Miniature  
Bayonet



C-7  
Double-Contact  
Bayonet



C-7  
Candelabra  
Screw

### SPECIFICATIONS AND PRICES

Lamp Number	40	41	42	43	*44	45	*46	*47	48	49	51	55	*1490	10C7	10C7DC
Volts	6-8	2.5	3.2	2.5	6-8	3.2	6-8	6-8	2	2	6-8	6-8	3.2	115-25	115-25
Amps	0.15	0.50	0.35	0.50	0.25	0.35	0.25	0.15	0.08	0.08	Max.0.25	Max.0.45	0.16	10 watts	10 watts
#Bulb	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	T-3/4	G-3 1/2	G-4 1/2	T-3/4	C-7	C-7
Base	Min. Screw	Min. Screw	Min. Screw	Min. Bay.	Min. Bay.	Min. Bay.	Min. Screw	Min. Bay.	Min. Screw	Min. Bay.	Min. Bay.	Min. Bay.	Min. Bay.	Cand. Screw	D.C. Bay.
Bead Color	Brown	White		White	Blue		Blue	Brown	Pink						
Price	\$0.10T	\$0.10T	\$0.12T	\$0.10T	\$0.10T	\$0.12T	\$0.10T	\$0.10T	\$0.15T	\$0.15T	\$0.08V	\$0.08V	\$0.11T	\$0.15T	\$0.16T

# Bulbs are designated by a letter to indicate shape and a figure to indicate the approximate diameter in eighths of an inch.  
\* Most popular types.

T After price indicates Federal Excise Tax will be billed as a separate item at 6.3% of list price.  
V After price indicates Federal Excise Tax will be billed as a separate item at 1.6% of list price.

## GENERAL ELECTRIC

### LAMP DEPARTMENT DISTRICT OFFICES

Pittsburgh 22, Pa.  
New York 22, N.Y.  
Cleveland 14, O.  
Charlotte 2, N. C.  
Baltimore 1, Md.  
Chicago 4, Ill.  
New Haven 10, Conn.  
Philadelphia 2, Pa.  
Tampa 2, Florida  
Indianapolis 4, Ind.  
Davenport, Iowa

535 Smithfield Street  
570 Lexington Avenue  
215 Euclid Avenue  
516 Johnston Building  
101 N. Charles Street  
230 So. Clark Street  
185 Church Street  
1405 Locust Street  
409 East Cass Street  
1115 Circle Tower  
301 Davenport Bank Bldg.

Detroit 2, Mich.  
Kansas City, Mo.  
St. Louis 1, Mo.  
Albany 7, N. Y.  
Boston 10, Mass.  
Newark 2, N. J.  
Buffalo 2, N. Y.  
Minneapolis 13, Minn.  
Portland 9, Oregon  
Cincinnati 2, Ohio

820 Fisher Building  
200 E. 16th Ave., N. Kas. City 16  
710 N. Twelfth Blvd.  
8 Elk Street  
50 High Street  
Room 606, 744 Broad Street  
1 West Genesee Street  
500 Stinson Boulevard  
1238 N.W. Glisan Street  
36 East Fourth Street  
General Office: Nela Park, Cleveland 12, Ohio. Glenville 1-6600

Oakland 7, Calif.  
Seattle 4, Wash.  
Denver 2, Colo.  
Memphis 7, Tenn.  
Atlanta 3, Ga.  
Los Angeles 13, Cal.  
Dallas 2, Tex.  
Houston 2, Texas  
Richmond 19, Va.  
Milwaukee 3, Wisc.

1614 Campbell Street  
202 Hage Building  
1863 Wazee Street  
1179 Morehead Street  
187 Spring Street, N.W.  
601 West Fifth Street  
1801 N. Lamar Street  
1811 Nat'l Standard Bldg.  
7th and Main Street  
161 W. Wisconsin Ave.

# BUSS Fuses

## FUSETRON DUAL-ELEMENT Fuses and Fuse Holders

for Protection of Radios, Instruments and Electronic Equipment

### FAST ACTING FUSES for PROTECTION OF INSTRUMENTS, Etc.



Formerly called 8AG.  
Dimension  $\frac{1}{4}$  x 1 inch, Glass tube.

Provide high speed action necessary to protect sensitive instruments.

Test specification—carry 100%, open at 200% in 5 seconds.

Voltage	Symbol	Amperes	List Price
250 or less	MJB	$\frac{1}{2}$ 00	\$0.70
"	MJB	$\frac{1}{2}$ 00	.30
"	MJB	$\frac{1}{100}$ or $\frac{1}{32}$	.20



Formerly called 8AG.  
Dimension  $\frac{1}{4}$  x 1 inch, Glass tube.

Provide high speed action necessary to protect instruments.

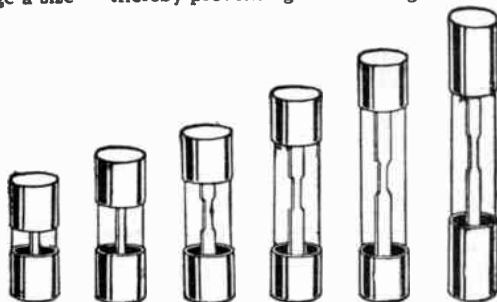
Test specification—carry 100%, open at 200% in 5 seconds.  
AGX are listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	MJW	$\frac{1}{16}$ or $\frac{1}{8}$	\$0.15
"	AGX	$\frac{1}{8}$	.15
"	AGX	$\frac{1}{4}$ , $\frac{3}{8}$ or $\frac{1}{2}$	.12
125 or less	AGX	$\frac{3}{4}$	.12
"	AGX	1, $1\frac{1}{2}$ or 2	.10

The MJW fuses are special low resistance fuses.

### BUSS FUSES — SFE STANDARD

All cuts actual size. Fuses of different amperages are of different lengths — to make it impossible to insert too large a size — thereby preventing over-fusing.



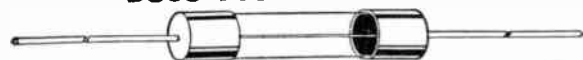
SFE 4 SFE 6 SFE 9 SFE 14 SFE 20 SFE 30

Glass tube — diameter  $\frac{1}{4}$  inch. Length as per table below.

Test specification—carry 100%, open at 125% in  $\frac{1}{2}$  hour.  
Listed as approved by Underwriters' Laboratories.  
Made according to specifications of Society of Automotive Engineers.

Voltage	Symbol & Amperes	Length inches	Pounds per 100	List Price
32 or less	SFE 4	$\frac{5}{8}$	.70	\$0.05
"	SFE 6	$\frac{3}{4}$	.71	.05
"	SFE 9	$\frac{7}{8}$	.72	.04
"	SFE 14	$1\frac{1}{16}$	.77	.04
"	SFE 20	$1\frac{1}{4}$	.83	.035
"	SFE 30	$1\frac{1}{8}$	1.05	.06

### BUSS PIG-TAIL FUSES



$\frac{1}{4}$  x  $1\frac{1}{4}$  inch Glass tube fuse with  $1\frac{3}{4}$  inch leads of No. 20 tinned copper wire. Symbol GJV.

$\frac{1}{4}$  x  $1\frac{1}{8}$  inch Paper tube fuse with  $1\frac{3}{4}$  inch leads of No. 20 tinned copper wire. Symbol GJC.

Test specifications — carry 110%, open at 135% in 1 hour.  
Listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	GJV	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ or $\frac{3}{4}$	\$0.20
"	GJV	1, $1\frac{1}{2}$ , 2 or 3	.15
"	GJC	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ or $\frac{3}{4}$	.20
"	GJC	1, $1\frac{1}{2}$ , 2 or 3	.15

### BUSS GLASS TUBE FUSES, $\frac{1}{4}$ x $1\frac{1}{4}$ inch



AGC and MTH 4, 5 and 6



MTH 8

Formerly called 3AG.  
Test specification—carry 110%, open at 135% in 1 hour.  
Listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	AGC	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ or $\frac{3}{4}$	\$0.15
"	AGC	1, $1\frac{1}{2}$ , 2 or 3	.07
"	MTH	4, 5 or 6	.10
"	MTH	8	.15



Formerly called 3AG

Test specification—carry 110%, open at 135% in 1 hour.

Voltage	Symbol	Amperes	List Price
32 or less	AGC	5, 6 or $7\frac{1}{2}$	\$0.05
"	AGC	10 or 15,	.04
"	AGC	25 or 30	.05

20 ampere size is an SFE 20 fuse.  
Sizes larger than 30 ampere are not recommended as clips or fuse holders would not permit fuse to carry such high currents. If surges or starting currents make heavier fuse necessary, use MDL Fusetron dual-element fuses.

### BUSS CERAMIC TUBE FUSES

$\frac{1}{4}$  x  $1\frac{1}{4}$  inch



Formerly called 3AB

Test specification—carry 110%, open at 135% in 1 hour.  
Listed as approved by Underwriters' Laboratories, 15 amps and less.

Voltage	Symbol	Amperes	List Price
250 or less	ABC	10, 12, 15 or 20	\$0.15

### FUSETRON FUSES, $\frac{1}{4}$ x $1\frac{1}{4}$ inch



Glass tube — Dual-Element type

#### A FUSE WITH A LONG TIME-LAG

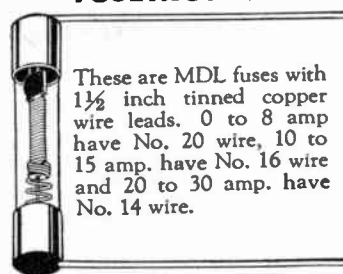
These fuses avoid needless blows from starting currents or surges. They have a fuse link which operates only on very high overloads or short-circuits — they have a thermal cutout which functions on low overloads — the thermal cutout cannot operate quickly at any load, hence long time-lag is obtained. Yet protection is afforded against short-circuits or continued overloads.

Test specification—carry 110%, open at 135% in 1 hour.  
Approximate blowing time: at 200% load 25 seconds  
at 300% " 8 "  
at 500% " 3 "

125 and 250 volt sizes listed as approved by Underwriters' Laboratories.

Voltage	Symbol	Amperes	List Price
250 or less	MDL	$\frac{1}{100}$ , $\frac{1}{32}$ , $\frac{1}{16}$ , $\frac{1}{10}$ , $1\frac{1}{100}$ , $\frac{3}{10}$ , $\frac{1}{10}$ , $\frac{1}{2}$ , $\frac{3}{10}$ , $\frac{1}{10}$ or 1	\$0.25
125 or less	MDL	$1\frac{1}{4}$ , $1\frac{1}{10}$ , 2, $2\frac{1}{2}$ , $2\frac{3}{10}$ or $3\frac{1}{10}$	.20
32 or less	MDL	4, 5, $6\frac{1}{4}$ , 8, 10, 15, 20, 25 or 30	.20

### FUSETRON PIG-TAIL FUSES



Symbol MDV

These are MDL fuses with  $1\frac{1}{2}$  inch tinned copper wire leads. 0 to 8 amp have No. 20 wire, 10 to 15 amp. have No. 16 wire and 20 to 30 amp. have No. 14 wire.

For sizes and all other information see MDL fuses above.

Amperes	List Price
$\frac{1}{100}$ to 1	\$0.30
$1\frac{1}{4}$ to 2	.25
$2\frac{1}{2}$ to 30	.23

# BUSS Fuses

## FUSETRON DUAL-ELEMENT Fuses and Fuse Holders

for Protection of Radios, Instruments and Electronic Equipment

### BUSS FUSE CLIPS for 1/4 inch Fuses

(SFE 4, 6, 9, 14, 20, AGX, AGC, ABC, MDL, MJB, MTH fuses)



Spring bronze clips are made of Herculoy — a bronze of distinctly superior quality for spring clips. This metal gives clips great gripping strength and ability to retain spring under adverse conditions.

Beryllium copper clips combine low electrical resistance with great gripping strength. This means maximum electrical conductivity and results in cooler operation of clips and fuse.

Size of mounting hole; .130 to .135 inch.  
Center of hole to back-stop; .125 to .135 inch;  
Min. length of contact surface; 3/32 inch  
Maximum height; 1 1/32 inch  
Maximum width; 1 1/32 inch

- 4548 Spring bronze clip, Nickel plated.  
4592 Beryllium copper clip, Silver plated.

List Price  
\$0.02  
.05

### BUSS CLIP ASSEMBLIES for 1/4 inch Fuses

(SFE 4, 6, 9, 14, 20, AGX, AGC, ABC, MDL, MJB, MJW, MTH fuses)

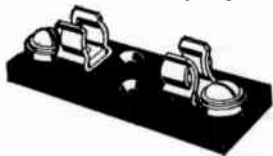


Clips as described above. Brass terminal. 3/16 inch 6-32 washer head terminal screw. 1/4 inch 4-40 flat head iron mounting screw.

- 4431 includes No. 4548 spring bronze clip, terminal screw, terminal and mounting screw. List Price \$0.10  
4432 includes No. 4592 beryllium copper clip, terminal screw, terminal and mounting screw. List Price \$0.13

### BUSS FUSE BLOCKS

Bakelite base blocks 3/16 inch thick. Countersunk mounting holes for No. 6 flat head screws. Brass No. 6 terminal screws. No. 4548 spring bronze clips.



Full base, Screw terminal Blocks

For Fuses	One Pole	List Price	Two Pole	List Price	Three Pole	List Price
SFE4	4511	\$0.35	4521	\$0.70	4531	\$1.00
SFE6	4516	.35	4526	.70	4536	1.00
SFE9	4517	.35	4527	.70	4537	1.00
SFE14, AGX, MJB	4514	.35	4524	.70	4534	1.00
SFE20, ABC, AGC, MDL, MTH	4512	.35	4522	.70	4532	1.00



Small base, Solder Terminal Blocks

For Fuses	One Pole	List Price	Two Pole	List Price	Three Pole	List Price
SFE14, AGX, MJB	4520	\$0.15	4485	\$0.30	4403	\$0.45
SFE20, ABC, AGC, MDL, MTH	4405	.15	4408	.30	4411	.45

### Other standard fuse blocks and special fuse blocks

If blocks shown do not fit your requirements ask for information on other standard types and sizes.

If special fuse block is required, send description or sketch, showing type of fuse to be used, number of circuits, type of terminals, etc. We welcome such inquiries.

### BUSS FUSE HOLDERS

Make it convenient to mount fuse on any equipment. Changing or inspection of fuse is easy and quick. Holder has removable knob. Fuse projects beyond body of holder and is not held tight on other end when knob is removed.

Fuse and contacts are protected from dirt and fumes. Good contact on fuse is made certain by strong coil spring pressure. Poor contact heating that often causes fuse to blow needlessly is eliminated.

Holder bodies are made of black bakelite. All current carrying parts are of brass or copper. Terminals and all contact parts are bright alloy plated.

### PANEL MOUNTED HOLDERS for 1/4 inch Fuses



Holders are inserted through hole in panel and are locked in place by nut on holder. They can be used on panels up to 5/16 inch thick.

Bayonet type knob requires only quarter turn to remove fuse. No screw driver is needed.

Side terminal is held mechanically as well as by solder. Heat of soldering wire to it will not cause it to loosen or come off.

Vibration will not cause failure of terminals as they are designed to stand severe service.

Neoprene washer and steel locking nut (zinc plated, chromate dipped) furnished with each holder.

Wire hole in terminals; .115 inch.

Normal current carrying capacity; 15 amperes.

Listed as approved by Underwriters' Laboratories.

Symbol	Description	List Price
HJM	for 1/4 x 1 inch fuses (AGX, MJB, MJW, SFE 14)	\$0.40
HKP	for 1/4 x 1 1/4 inch fuses (ABC, AGC, SFE20, MDL, MTH)	.40

### IN-THE-LINE HOLDERS for 1/4 inch fuses

These holders are for mounting fuse in wire. Holders consist of body and bayonet type knob — two contacts ready to be staked on ends of wire — a pressure spring that is used under contact in base of holder.

Holders can also be mounted in panel up to 5/16 inch thick by means of a No. 9969 Spring nut (Nut not furnished). Flat spot on holder permits it to be locked against rotation.

Normal current carrying capacity: 15 amperes.

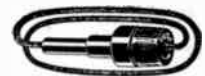
Symbol	Description	List Price
HDI	for 1/4 x 1 inch fuses (AGX, MJB, MJW, SFE 14)	\$0.20
	Takes No. 18 or smaller wires.	
HDJ-A	for 1/4 x 1 1/4 inch fuses (ABC, AGC, MDL, MTH, SFE 20)	.20
	Takes No. 18 or smaller wires.	
HDJ-B	for 1/4 x 1 1/4 inch fuses (as above)	.20
	Takes No. 14 or 16 wires.	
No. 9969	Spring nut for panel mounting above holders.	.04

### Holder-and-Fuse Assemblies

Assembly consists of holder, fuse and 19 inch loop of No. 14 wire already staked and soldered to terminals.

Offer simplest way to install protection. Wire can be cut to give leads of desired length. A spring nut, furnished with holder, can be used to mount holder on panel up to 3/32 inch thick.

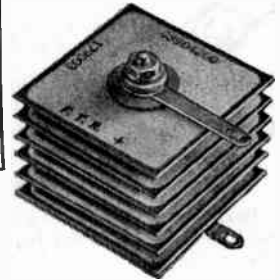
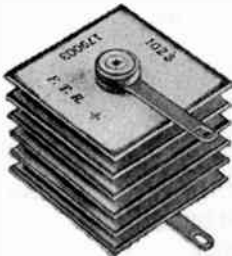
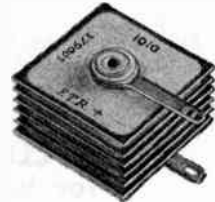
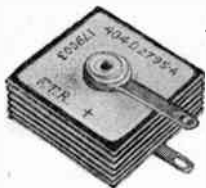
Symbol	Description	List Price
HRJ	Complete with SFE 20 fuse	\$0.40
HRI	Complete with SFE 14 fuse	.40
HRH	Complete with SFE 9 fuse	.40





# Federal Miniature Selenium Rectifiers

The revolutionary rectifier with unlimited use in radio • television • electronics



Cat. No.	Federal Code No.	Output MA-DC	Input (RMS)		In-verse Volts	Peak MA	Plate Size	Application	Sugg'd Retail Price, Each
			Volts	MA					
1002	402D3452A	65	130	160	380	750	1" Sq.	B+ AC-DC (5 tube)	\$1.10
1003	402D3150A	75	130	220	380	900	1" Sq.	B+ 3-way Radios	1.30
1004	403D2825A	100	130	325	380	1200	1 3/4" Sq.	B+ Radios, Television	1.60
1005	403D2787A	150	130	425	380	1200	1 3/4" Sq.	B+ Radios, Television	1.95
1006	404D2795A	200	130	550	380	2000	1 3/4" Sq.	B+ Television	2.25
1010	404D3450	250	130	625	380	2000	1 3/4" Sq.	B+ Television	2.50
1023	1023	350	130	900	380	3000	1 3/4" Sq.	B+ Television	3.58
1021	439D4200	450	130	1150	380	4000	2" Sq.	B+ Television	4.40
1014	403D2889A	100	160	325	440	1200	1 3/4" Max.	Vibrator	2.30
1022	439D4300	450	160	1150	440	4000	2" Sq.	B+ Television	4.85
1007	402D3239A	75	160*	220	440	900	1" Sq.	Vibrator Doubler	2.85
1008	403D3240A	100	160*	325	440	1200	1 1/4" Sq.	Vibrator Doubler	3.85
1009	404D3241A	200	160*	550	440	2000	1 1/2" Sq.	Vibrator Doubler	5.00
1015	402D3550	150	25	270	35	1800	1" Sq.	Bridge Rectifier	1.85
1016	403D3551	300	25	540	35	2400	1 1/4" Sq.	Bridge Rectifier	1.90
1017	404D3552	600	25	1080	35	4000	1 1/2" Sq.	Bridge Rectifier	2.25
1013	4D2814AS	700	18†	.....	.....	.....	1 1/2" Sq.	Battery Charger	.80
1018	104D2843S	2000	18‡	.....	.....	.....	4 1/2" lg. (Mtg. Pt.)	Battery Charger	3.10
1001	402D3151	75	20	220	55	900	1" Sq. (Mtg. Pt.)	Bias Rectifier	.70
1019	N.T.C. Resistor (Resistance: Cold, 1400 ohms, Hot, 200 ohms)								.28

\* These rectifiers have two sections—characteristics given apply to one section only; if both sections are used half-wave, voltage input is 320 volts.

† The characteristics given for this rectifier are based on its use in a half-wave rectifier circuit with a 3-cell battery load.

‡ The characteristics given for this rectifier are based on its use in a full-wave rectifier circuit with a 3-cell battery load.



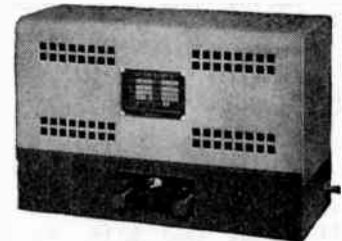
Federal's Miniature Selenium Rectifier Handbook—48 pages of valuable design and application data on America's most complete line of miniature selenium rectifiers.

Retail Price, each **25¢**

## Federal Selenium Rectifier Equipment

Efficient, Economical Conversion of AC to DC For Battery Charging, Shop and Laboratory Use

Federal Type	Output (DC)		Input	Application	Suggested Retail Price, Each
	Volts	Amps.			
FTR 3246-BS	6	10	115 volts, 60 cycles single phase	"A" Eliminator	\$74.50
FTR 3377-AS	115	.77	115 volts, 60 cycles single phase	Power Supply	\$18.50



FTR 3246-BS



FTR 3377-AS

Federal Telephone and Radio Corporation



America's Oldest and Largest Manufacturer of Selenium Rectifiers

# LITTELFUSE

"Quicker than a Short Circuit"

## 3 AG "LITTELFUSES"



¼" x 1¼"

Standard Package—100

Blow Time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200%	0-2 minutes

**311000 Series Littelfuses**—Quick to medium-blowing fuses—for use in radios, auto-radios, amplifiers, etc. Straight-type fuse element—positioned to center of fuse—makes open link always in the visible portion of fuse.

Catalog No.	Amp. rating	Max. volt.	Ohms res.	List Price, each
311005.	5	32	.028	\$0.05
31107.5	7½	32	.02	.05
311010.	10	32	.011	.04
311015.	15	32	.008	.04
311020.	20	32	.006	.035
311030.	30	32	.005	.05

**312000 Series Littelfuses**—Quick-acting fuses—for low time-lag applications similar to the 311000 fuse series above. Protective-coated elements, on fuses to 3 amperes, prevent oxidation and promote clean break on fusion. Diagonal element alignment of this fuse assures accurate alignment and calibration, even when the fuse element is expanded by heat.

Catalog No.	Amp. rating	Max. volt.	Ohms res.	List Price each
312.062	1/16	250	5.400	\$0.15
312.125	1/8	250	6.35	.15
312.250	1/4	250	3.275	.15
312.375	3/8	250	2.38	.15
312.500	1/2	250	1.39	.15
312.750	3/4	250	.89	.15
312001.	1	250	.23	.07
31201.5	1½	250	.146	.07
312002.	2	250	.073	.07
312003.	3	250	.052	.07
312004.	4	250	.049	.10
312005.	5	250	.029	.10
312006.	6	250	.025	.10
312008.	8	125	.....	.15

Approved by Underwriters' Laboratories.

## 3 AG "SLO-BLO" "LITTELFUSES"



¼" x 1¼"

Standard package—100

Blow time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200	60 seconds max. 5 seconds min.

**313000 Series Littelfuses**—Slo-Blo fuses with high time-lag to withstand heavy surges—quick on shorts. Designed for circuits with equipment having high inductive or capacitive surges, such as magnets, solenoids, etc., and for circuits with heavy starting currents, such as motors and lamp circuits. Anti-fatigue construction (compound element, with spring and resistor) makes these fuses ideal for intermittent-duty circuits on vibrators, control circuits, hi-tension electric fences, small magnets, coils, etc. "Pioneered by Littelfuse."

Catalog No.	Former No.	Amp. rating	Max. volt.	List Price, each
313.010	1259	1/100	125	\$0.25
313.032	1261	1/32	125	.25
313.062	1262	1/16	125	.25
313.100	.....	1/10	125	.25
313.150	.....	15/100	125	.25
313.200	.....	2/10	125	.25
313.250	1264	1/4	125	.25
313.300	.....	3/10	125	.25
313.400	.....	4/10	125	.25
313.500	1266	1/2	125	.25
313.600	.....	6/10	125	.25
313.800	.....	8/10	125	.25
313001.	1268	1	125	.25
3131.25	.....	1½	125	.20
31301.6	.....	1-6/10	125	.20
313002.	1042-C	2	125	.20
31302.5	.....	2½	125	.20
31303.2	.....	3-2/10	125	.20
313004.	.....	4	125	.20
313005.	1080-C	5	125	.20
3136.25	.....	6¼	32	.20
313008.	.....	8	32	.20
313010.	1081-C	10	32	.20
313015.	1082-C	15	32	.20
313020.	1083-C	20	32	.20

Approved by Underwriters' Laboratories through 5 amps.

## 3 AB "TINY MIGHTY" "LITTELFUSES"



¼" x 1¼"

Standard package—100.

Blow Time	Percentage of rating	Blow Time
	110%	Life
	135%	0-1 hour
	200%	0-2 minutes

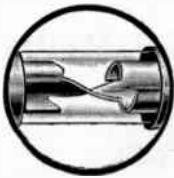
**314000 Series Littelfuses**—The smallest Underwriters' Laboratory approved fuses in ratings this high. Steatite enclosed, arc-quenching, powder filled fuses. Shatter-proofed against quick shorts. Medium time lag. Recommended for use with amplifiers, rectifiers, battery charging equipment, small generators, control panels, amusement devices, communication and electronic equipment, radios, signal apparatus, small motor circuits, etc. Take less space than N.E.C. fuses—"Pioneered by Littelfuse."

Catalog No.	Amp. rating	Max. volt.	Ohms res.	List Price, each
314008.	8	250	.021	\$0.15
314010.	10	250	.014	.15
314012.	12	250	.013	.15
314015.	15	250	.012	.15
314020.	20	250	.0007	.15

Approved by Underwriters' Laboratories through 15 amps.

# LITTELFUSE

"Quicker than a Short Circuit"



4 AG Aircraft Fuse showing reinforced twisted element



Bakelite-enclosed 4 AB Fuse

## AIRCRAFT LITTELFUSES—ANTI-VIBRATION TYPE

Especially designed for Aircraft Service. Characteristics: High Mechanical Strength—Resistance to Fatigue—Long Vibration Life

**CONSTRUCTION:** Glass-enclosed. Littelfuse Locked Cap Assembly (no cements) prevents loosening of caps. High visibility transparent label for amperage. Elements mechanically depolarized by twisting at 90° (see illustrations) are braced against extreme vibration. "Gooseneck" non-crystallizing fuse element takes up expansion and contraction. Ratings 5 amps. or less use Spring and Link. Service life six times simple wire. The 4 AG and 5 AG sizes are supplied for Aircraft Services for their strength and greater carrying capacity than 3 AG fuses.

**BAKELITE-ENCLOSED:** 4 AB and 5 AB fuses recommended where severe overloads might shatter glass.

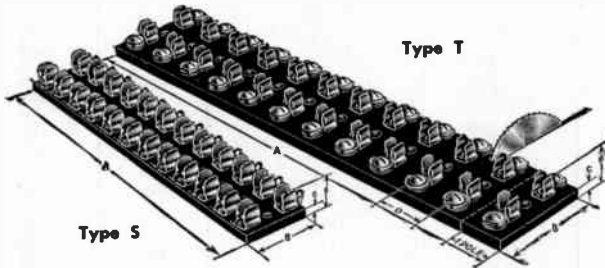
**CURRENT RATING:** Rated to NEC specifications to carry 10% overload indefinitely, to blow on 35% overload within 1 hr., and 100% overload within 2 min.

**VOLTAGE RATING:** Voltage at which fuses will break without arcing over, or bursting under short circuit conditions.

**VIBRATION FACTOR:** Minimum hours these fuses endure our Magnetic Vibrator operating 120 cycles a second, while carrying the rated current. Acceleration is 10 times the worst field conditions.

Vibration Factor	4AG "LITTELFUSES" 1 1/4" x 1/8" Dia. Unit Wt.—3.5 Gms.						4AB "LITTELFUSES" 1 1/4" x 1/8" Dia. Unit Wt.—3.75 Gms.						5AG "LITTELFUSES" 1 1/4" x 1/8" Dia. Unit Wt.—3.5 Gms.						
	Cat. No.	Former No.	Amp. Rating	Max. Volt.	Ohms Res.	Price, Each	Cat. No.	Former No.	Amp. Rating	Max. Volt.	Ohms Res.	Price, Each	Cat. No.	Former No.	Amp. Rating	Max. Volt.	Ohms Res.	Price, Each	
100+	"Sto-Blo"						414001.	1091B	1	250	.39	\$0.25	"Sto-Blo"	513001.	1160C	1	250	.88	\$0.25
100+	413001.	1091C	1	250	.71	\$0.25	414002.	1092B	2	250	.16	.25	513002.	1161C	2	250	.24	.25	
100+	413002.	1092C	2	250	.094	.25	414003.	1093B	3	250	.055	.25	513003.	1162C	3	250	.18	.25	
500+	413003.	1093C	3	250	.059	.25	414005.	1094B	5	115*	.041	.25	513005.	1163C	5	32	.05	.25	
500+	413005.	1094C	5	32	.023	.25	414010.	1095B	10	115*	.016	.25							
500+	Aircraft						414015.	1096B	15	115*	.012	.25	511010.	1164	10	32'	.039	.15	
500+	411010.	1095	10	32	.016	.13	414020.	1097B	20	32	.008	.25	511015.	1165	15	32	.013	.15	
500+	411015.	1096	15	32	.010	.13	414025.	1098B	25	32	.007	.25	511020.	1166	20	32	.013	.15	
500+	411020.	1097	20	32	.008	.13	414030.	1099B	30	32	.007	.25	511025.	1442	25	32	.030	.15	
500+	411025.	1098	25	32	.007	.13	414035.	1099B	35	32	.006	.25	511030.	1167	30	32	.013	.15	
500+	411030.	1099	30	32	.007	.13	414040.	1100B	40	32	.006	.25	511035.	1472	35	32	.008	.15	
500+	411035.	—	35	32	.006	.18						511040.	1168	40	32	.010	.15		
500+	411040.	1100	40	32	.004	.20						511050.	1169	50	32	.009	.18		
500+												511060.	1222	60	32	.010	.18		

\* Good for power supplies up to 25 KVA at 115V—400 cycles.



Type S

Type T

## NEW FUSE MOUNTING PANELS

Open type fuse panels, stocked in 12-pole units as shown—we cut them to 1, 2, 3, 4 or more poles as ordered, or you may cut them in your plant (1/8" allowance for saw cut).

Fuse Type	Mtg. Type	Dim. "B"	Dim. "C"	Dim. "D"	Dim. "E"
8AG	S	1 3/8"	3 1/8"	5 3/8"	2 1/8"
3AG	S	1 1/8"	2 7/8"	4 7/8"	1 7/8"
3AG	T	2 3/8"	1 7/8"	2 7/8"	1 1/8"
4AG	T	2 3/8"	1 7/8"	2 7/8"	1 1/8"
5AG	T	2 3/8"	1 7/8"	2 7/8"	1 1/8"

**Mountings with Solder Terminals—Type "S".** Phosphor-Bronze, bright-dipped finish "Lug-Clips" are firmly anchored to black Bakelite base—have non-turning anchors. For 8AG and 3AG size fuses.

**Mountings with Screw Terminals—Type "T".** Spaced to U/L requirements for equipment circuit protection. Nickel plated brass screw terminals, nickel plated fuse clips. Type 356 (3AG) and type 556 (5AG or Midget) have cupped wire-retaining washers under terminal screws as required by U/L. Type 456 (4AG) has lock washers or terminals.

### FOR 4AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price, Each
456001	1	2 1/8"	\$0.40
456002	2	1 1/2"	.75
456003	3	2 1/8"	1.10
456004	4	3 1/8"	1.45
456005	5	4 1/8"	1.80
456006	6	5 1/8"	2.15
456007	7	6 1/8"	2.50
456008	8	7 1/8"	2.85
456009	9	8 1/8"	3.20
456010	10	9 1/8"	3.55
456011	11	9 7/8"	3.90
456012	12	10 3/8"	4.25

### FOR 3AG FUSES—TYPE "S"

Catalog No.	No. Poles	Dim. "A"	List Price, Each
357001	1	1 3/8"	\$0.15
357002	2	1 1/8"	.30
357003	3	1 3/8"	.45
357004	4	2 3/8"	.60
357005	5	3	.75
357006	6	3 3/8"	.90
357007	7	4 1/8"	1.05
357008	8	4 3/8"	1.20
357009	9	5 1/8"	1.35
357010	10	6 1/8"	1.50
357011	11	6 3/8"	1.65
357012	12	7 3/8"	1.80

### FOR 3AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price, Each
356001	1	2 1/8"	\$0.35
356002	2	1 1/2"	0.70
356003	3	2 1/8"	1.05
356004	4	3 1/8"	1.40
356005	5	4 1/8"	1.75
356006	6	5 1/8"	2.10
356007	7	6 1/8"	2.45
356008	8	7 1/8"	2.80
356009	9	8 1/8"	3.15
356010	10	9 1/8"	3.50
356011	11	9 7/8"	3.85
356012	12	10 3/8"	4.20

### FOR 5AG FUSES—TYPE "T"

Catalog No.	No. Poles	Dim. "A"	List Price, Each
556001	1	2 1/8"	\$0.50
556002	2	1 1/2"	.95
556003	3	2 1/8"	1.40
556004	4	3 1/8"	1.85
556005	5	4 1/8"	2.30
556006	6	5 1/8"	2.75
556007	7	6 1/8"	3.20
556008	8	7 1/8"	3.65
556009	9	8 1/8"	4.10
556010	10	9 1/8"	4.55
556011	11	10 1/8"	5.00
556012	12	11 1/8"	5.45

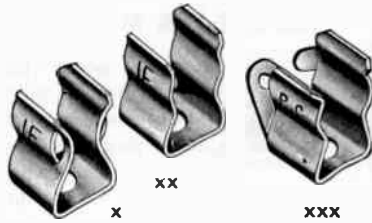
### FOR 8AG FUSES—TYPE "S"

Catalog No.	No. Poles	Dim. "A"	List Price, Each
387001	1	1 3/8"	\$0.15
387002	2	1 1/8"	.30
387003	3	1 3/8"	.45
387004	4	2 3/8"	.60
387005	5	3	.75
387006	6	3 3/8"	.90
387007	7	4 1/8"	1.05
387008	8	4 3/8"	1.20
387009	9	5 1/8"	1.35
387010	10	6 1/8"	1.50
387011	11	6 3/8"	1.65
387012	12	7 3/8"	1.80

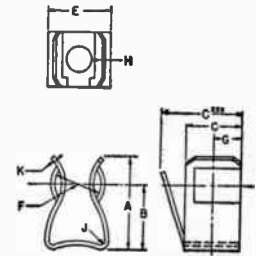
# LITTELFUSE

"Quicker than a Short Circuit"

## LITTELFUSE BERYLLIUM COPPER AND PHOSPHOR BRONZE FUSE CLIPS



Littelfuse fuse clips are available in three standard styles: "X," with "ears" or fuse stops; "XX," earless; and "XXX," "Lug-Clips," a new Littelfuse clip having a lug or solder terminal made as an integral part of the clip. All styles are furnished in either Phosphor-Bronze or Beryllium Copper.



Catalog Number	Former Number	Fuse Adaptation	Type	DIMENSIONS							Unit Wt. grams	Std. Pkg. 100 Wt.—lbs.	List Price Each
				A	B	C	E	F	G	H			

### BERYLLIUM COPPER CLIPS

#### SILVER PLATED—WITH FUSE STOP "EARS"

121001	1216B	SFE, 3AG & 8AG Fuses	X	29/64	3/8	5/16	11/32	1/4	5/16	.131	1	1	\$0.05
123001	1217B	4AG & 4AB Fuses	X	9/32	7/8	15/32	.385	5/8	5/8	.171	1.6	1	.08
125001	1218B	5AG, Hi-Voltage-Midget	X	9/32	7/8	7/8	15/32	15/32	7/8	.196	3	2	.18
127001	1219	N.E.C.-30 Fuses	X	13/32	7/8	19/32	5/8	5/8	3/4	.203	5.5	2	.16
129001	1221	Standard Hi-Voltage	X	17/32	15/16	.750	7/8	15/16	5/8	.265	14.5	4	.40

#### SILVER PLATED—EARLESS TYPE

121002	1417	SFE, 3AG & AB, & 8AG	XX	29/64	3/8	5/16	11/32	1/4	5/16	.131	1	1	.05
123002	1437	4AG & 4AB	XX	9/32	7/8	15/32	.385	5/8	5/8	.171	1.6	1	.08
125002		5AG, Hi-Voltage-Midget	XX	9/32	7/8	7/8	15/32	15/32	7/8	.196	3	2	.15
127002	1475	N.E.C.-30 Fuses	XX	13/32	7/8	19/32	5/8	5/8	3/4	.203	5.5	2	.16
129002	1476	Standard Hi-Voltage	XX	17/32	15/16	.750	7/8	15/16	5/8	.265	14.5	4	.40

#### SILVER PLATED—"LUG-CLIP"—SOLDER TERMINAL ATTACHED

121004	New	SFE, 3AG, AB, & 8AG	XXX	29/64	3/8	27/64	11/32	1/4	5/16	.131	1.2	1	.08
123004	New	4AG Fuses	XXX	9/32	7/8	19/32	.385	5/8	5/8	.171	1.7	1	.12
125004	New	5AG & Midget Fuse	XXX	9/32	7/8	7/8	15/32	15/32	7/8	.196	3.5	2	.20

### PHOSPHOR BRONZE CLIPS

#### BURNISHED NICKEL PLATE—WITH FUSE STOP "EARS"

101001	1011B	SFE, 3AG & AB, & 8AG	X	29/64	3/8	5/16	11/32	1/4	5/16	.131	1	1	.02
103001	1319	4AG & 4AB	X	9/32	7/8	15/32	.385	5/8	5/8	.173	1.7	1	.04
105001	2048	5AG, Hi-Voltage-Midget	X	9/32	7/8	7/8	15/32	15/32	7/8	.196	3.2	2	.05
107001	5048	N.E.C.-30 Fuses	X	13/32	7/8	19/32	5/8	5/8	3/4	.203	5.8	2	.06
109001	1463	Standard Hi-Voltage	X	17/32	15/16	.750	7/8	15/16	5/8	.265	15.6	4	.16

#### BURNISHED NICKEL PLATE—EARLESS TYPE

101002	125-2	1AG, 3AG & AB, 7AG & 8AG	XX	29/64	3/8	5/16	11/32	1/4	5/16	.131	1	1	.02
104002		4AG & 4AB	XX	9/32	7/8	15/32	.385	5/8	5/8	.173	1.7	1	.04
105002	2049B	5AG, Hi-Voltage-Midget	XX	9/32	7/8	7/8	15/32	15/32	7/8	.196	3.2	2	.05
107002	SP-178	N.E.C. Bantam Fuses	XX	13/32	7/8	19/32	5/8	5/8	3/4	.203	5.8	2	.06

#### BRIGHT-DIP PHOSPHOR BRONZE—"LUG CLIP" SOLDER TERMINAL ATTACHED

101003		1AG, 3AG & AB, 7AG & 8AG	XXX	29/64	3/8	27/64	11/32	1/4	5/16	.131	1.2	1	.03
103003		4AG & 4AB	XXX	9/32	7/8	19/32	.385	5/8	5/8	.171	1.7	1	.05
105003		5AG, Hi-Voltage-Midget	XXX	9/32	7/8	7/8	15/32	15/32	7/8	.196	3.5	2	.08



Finger Operated Knob



341001

### "LITTELFUSE"

#### FUSE EXTRACTOR POSTS

Quicker, safer method for mounting and changing fuses. Held in end of removable knob, fuse is easily replaced by unscrewing knob. Available with finger-operated knob, screw driver slot knob, and finger operated with keep chain.

Catalog No.	Former No.	Descr.—Knob, How Operated	Mtg. Hole	Length Under Panel	Wt. Grams	List Price Each
341001	1075S	3AG—Screw Driver	.495" dia.*	2 1/8"	15.0	\$0.45
342001	1075F	3AG—Finger	.495" dia.*	2 1/8"	14.3	.45
371001	1087S	8AG—Screw Driver	.495" dia.*	2 1/8"	15.3	.45
372001	1087F	8AG—Finger	.495" dia.*	2 1/8"	14.3	.45
442002	1212D	4AG—Finger, Pressurized	5/8" dia.—Rd.	2 1/8"	45.3	3.00
442001	1212B	4AG—Finger	.623 dia.†	2 1/8"	24	.70

\*With flat .224" from C.L.

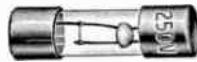
†With flat .250" from C.L.

# LITTELFUSE

"Quicker than a Short Circuit"

## 8AG INSTRUMENT high speed LITTELFUSES

Locked Cap Assembly and other exclusive Littelfuse features for protection of delicate test equipment, galvanometers, microammeters, milliammeters, voltmeters, etc. Glass-enclosed: 1 x 1/4" dia., accurately rated, high speed action, short time lag. Voltage ratings up to 250 V., AC or DC. For higher voltages use fuses in series.



Catalog No.	Former No.	Amp. Rating	Max. Volt.	Ohms Res. @ 5 m.a.	APPLICATIONS			List Price Ea.
					Volt-meters Ohms P.V.	All Magnetic Movement Milliammeters	Thermo-couples	
361.002		1/500	250	3,470.	Over 1000	Galvanometers	0-0.1 to 0-0.5	\$0.70
361.005	1000	1/200	250	480.	Over 1000	Galvanometers	Up to 0-5	0.30
361.010	1001	1/100	250	263.4	1000	Up to 0-1	0-5 to 0-10	.20
361.031	1002	1/50	250	40.0	500-100	0-1 to 0-10	0-10 to 0-25	.20
361.062	1003	1/25	250	5.0	100-500	0-10 to 0-25	0-25 to 0-80	.15
361.125	1004	1/10	250	2.0	20-100	0-25 to 0-75	0-75 to 0-150	.15
361.250	1005	1/5	250	3.5	10-20	0-75 to 0-150	0-115 to 0-200	.15
361.375	1006	1/2	250	3.0	5-10	0-150 to 0-250	0-200 to 0-300	.15
361.500	1007	1/2	250	2.0	3-5	0-250 to 0-350	0-300 to 0-400	.15
361.750	1007-A	1/2	250	2.0		0-350 to 0-500	0-400 to 0-600	.15
361001.	1008	1	250	.24		0-500 to 0-750	0-600 to 0-1000	.10
36101.5	1008-A	1 1/2	250	.13		0-750 to 0-1000	0-1000 to 0-1500	.10
361002.	1009	2	250	.10		0-1000 to 0-1500	0-1500 to 0-2000	.10
361003.		3	32	.043		0-1500 to 0-2000	0-2000 to 0-3000	.10
361005.		5	32	.030		0-2000 to 0-4000	0-3000 to 0-3000	.10

## BAKELITE IN-LINE FUSE RETAINER

Designed to hang in the cable or mount in the chassis, the inline fuse retainer molded of high impact bakelite is primarily for low-voltage applications: car radios, heaters, spot lights, clocks, etc.

More compact, better insulated than old metal types. Spring locked, bayonet type knob opens with a push and twist of the finger tips. Double wall thicknesses of high impact bakelite at critical body angles give crack resistance strength.

Circuit breaks when knob is removed. Shock safe fuse examination and replacement. Body is tapered for ease in installing push-on nuts when mounting in panel. This permits tight locked chassis installation through panel. Simpler construction and assembly makes for greater ease and economy in installation and service.

The following engineering features are of particular interest when considering advantages of this unit at critical points:

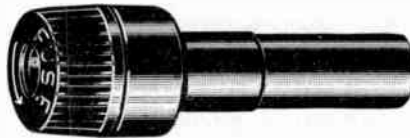
155000 Series—For all low-voltage applications, particularly car radios, heaters, light circuits, etc.

- 155004 For 4-amp SFE and 1AG fuses
- 155006 For 6-amp SFE fuses
- 155009 For 9-amp SFE and 7AG fuses
- 155014 For 14-amp SFE and 8AG fuses
- 155020 For 20-amp SFE and 3AG fuses

The disassembled unit consists of the bakelite body receptacle, bakelite knob with metal insert, one spring, two knife-edge rivet contacts.

155000 Series—Assembled with an 8" loop of wire lead:

- 155004A For 4-amp SFE and 1AG fuses
- 155006A For 6-amp SFE fuses
- 155009A For 9-amp SFE and 7AG fuses
- 155014A For 14-amp SFE and 8AG fuses
- 155020A For 20-amp SFE and 3AG fuses

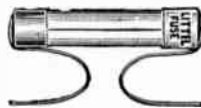


Prices List  
**.18 ea.**

Prices List  
**.30 ea.**

Catalog Number	Description	List Price Each
<b>3AG SLO-BLO PIGTAIL FUSES</b>		
315.150	15/100 amp. (125 volt)	\$ .30
315.200	2/10 amp. (125 volt)	.30
315.250*	1/4 amp. (125 volt)	.30
315.500	1/2 amp. (125 volt)	.30
315002.	2 amp. (125 volt)	.25
315003.	3 amp. (125 volt)	.25
315004.	4 amp. (32 volt)	.25
315005.	5 amp. (32 volt)	.25
<b>3AG PIGTAIL FUSES</b>		
318.125	1/4 amp. (250 volts)	.20
318.250*	1/2 amp. (250 volt)	.20
318.375	3/4 amp. (250 volt)	.20
318.500	1 amp. (250 volt)	.20
<b>8AG T.V. FUSES (No Pigtail)</b>		
362.250*	1/4 amp. (250 volt)	.15
362.375*	1/2 amp. (250 volt)	.15
<b>SFE PIGTAIL FUSES</b>		
310131.	20 amp. (32 volt)	.085

\*Most commonly used by large volume set manufacturers. All above fuses approved by Underwriters' Laboratories except 310131, 315004 and 315005.



Fuses listed to the left are the pigtail fuses which are being used by original set manufacturers as of March, 1950. Pigtail fuses in other amperages will be made available on demand.

## METER BACK MOUNTING



Cat. No. 383002 (1059)—Mounts directly on meter binding post. Will not touch other posts on smallest standard meter. Linen bakelite base, 1" x 1 1/4". Length over screw terminal, 1 1/2". Std. Pkg. 20. Wgt. 1/2 lb. List Price Each .....\$0.20

## FUSE MOUNTINGS (3AG)

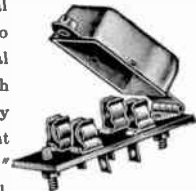
### Hinged Cover Type

(Meets Underwriters' Requirements)

Cover fibre-lined. Metal shielded cover hinged to bakelite base. Terminal mounting extends through insulated base. Nut lightly staked to cover to prevent loss. Requires 1 1/2" x 1 1/4" knockout hole in panel.

Two, 6-32 x 1/8" mounting studs at 2 1/2" centers. Base 2 1/2" x 1 1/4". 3/8" high above panel. Std. Pkg. 20.

Cat. No. List Price Each  
351009 (1237A)—Double Pole .....\$0.75  
351005 (1379)—Single Pole ..... .50



## NEON TESTERS

Low Voltage tester (illustrated) for 5 to 50 V AC or DC. For automotive, heating and vent., telephone, aircraft, battery service, radio service (low volt. filament circuits, "A" batteries), for testing polarity. Ten-inch leads with alligator clips.



No. 202002 Low Volt. Tattelite tester (5420).

(List Price, Each \$1.50)



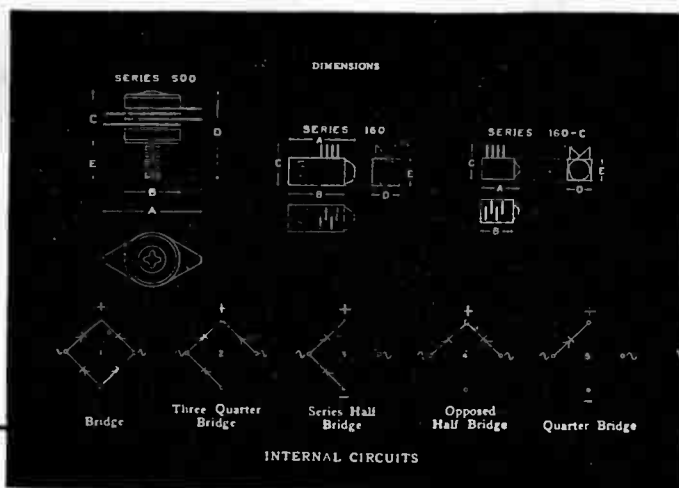
High Voltage "Tattelite" tester (not shown) 60-500V AC, 90-500V DC. Molded casings, insulated test prods—unusually sensitive. For testing live lines, polarity, for detecting blown fuses, open circuits, grounded wires, approximate voltage (110, 220, 440, etc.). Detailed instructions.

No. 201008 High Volt. Tattelite tester (5076)

List Price, Each \$1.00

# Conant Instrument Rectifiers

"STANDARD SINCE 1933"



Series	Type	Body Color	Internal Circuit	Mounting	Number of Terminals	Weight (Grams)	Dimensions (Inches)					Net Price
							A	B	C	D	E	
SERIES 500	M	YELLOW	1	6-32 STUD	4	12.718	.890	.500	.485	.800	.315	\$2.10
	TH	BROWN	2	6-32 STUD	4	11.833	.890	.500	.479	.800	.321	1.86
	HS	BLACK	3	6-32 STUD	3	10.631	.890	.500	.445	.800	.355	1.53
	T	RED	4	6-32 STUD	3	10.631	.890	.500	.445	.800	.355	1.53
	H	GREEN	5	6-32 STUD	2	9.072	.890	.500	.400	.675	.275	1.20
SERIES 160	B	YELLOW	1	#2 SCREW	4	2.531	.690	.590	.375	.250	.250	2.10
	BTH	BROWN	2	#2 SCREW	4	2.183	.690	.590	.375	.250	.250	1.86
	BHS	BLACK	3	#2 SCREW	3	1.824	.690	.590	.375	.250	.250	1.53
	BT	RED	4	#2 SCREW	3	1.824	.690	.590	.375	.250	.250	1.53
	BH	GREEN	5	#2 SCREW	2	1.477	.690	.590	.375	.250	.250	1.20
SERIES 160-C	B-C	YELLOW	1	FUSE CLIP	4	1.743	.345	.297	.310	.220	.200	2.10
	BTH-C	BROWN	2	FUSE CLIP	4	1.650	.345	.297	.310	.220	.200	1.86
	BHS-C	BLACK	3	FUSE CLIP	3	1.385	.345	.297	.310	.220	.200	1.53
	BT-C	RED	4	FUSE CLIP	3	1.385	.345	.297	.310	.220	.200	1.53
	BH-C	GREEN	5	FUSE CLIP	2	1.293	.345	.297	.310	.220	.200	1.20



- ★ Highest rectification efficiency for greatest instrument sensitivity.
- ★ Exceptional stability insures permanent instrument calibration.
- ★ Exclusive Conant Complete Color Code simplifies identification of type and terminal polarity.
- ★ Lead wires WELDED to terminals.
- ★ Sealed against moisture to insure permanent characteristics.
- ★ The only rectifiers with a NO-TIME LIMIT guarantee.
- ★ Manufactured by the exclusive Conant process from domestically produced materials only.
- ★ Life tests in continuous operation since June 1, 1934 prove Conant rectifiers do not deteriorate with age or continued normal service.
- ★ Sold by leading radio jobbers everywhere. Consult your local jobber, or your nearest Conant Representative.

**SERIES 500 UNITS** are for general applications requiring greater output current for meters, relays or other apparatus requiring more than 1 milliampere. Recommended for all such applications at commercial and the lower audio frequencies. Will also operate up to 1,000,000 c.p.s. in special applications wherein accuracy of readings is not essential.

**SERIES 160 and 160-C** are for applications requiring good frequency response over the entire commercial and audio range and especially when the meter, relay or other apparatus requires less than 1 milliampere for operation. In some special applications these units may be operated at frequencies up to 75,000,000 c.p.s. with special circuit treatment.

**SPECIAL TYPES** are available in both series 500 and 160-C. When requesting a quotation on a special type include a sketch of the rectifier required or a circuit dia-

gram showing source and frequency of the input voltage, resistance and kind of load, required load current and the ambient temperatures.

**SERIES 500** Disc diameter .600 inch. Area each disc .15 square inch. Furnished with 3" braided, tinned copper leads. Finished in synthetic lacquer-enamel.

**SERIES 160** Disc diameter .160 inch. Area each disc .02 square inch. Furnished with 3" stranded, tinned thermoplastic covered copper leads. Molded phenolic case. Assembly sealed with specially developed moisture-proof compound.

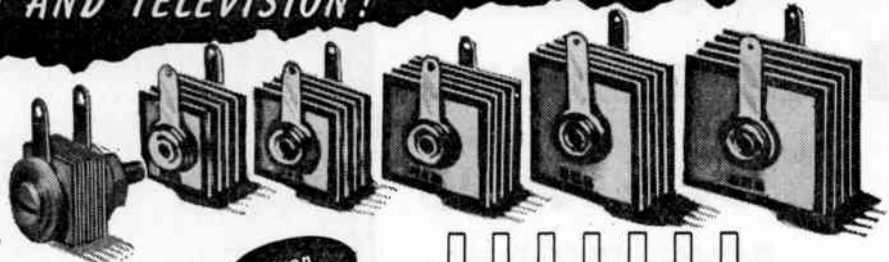
**SERIES 160-C** Disc diameter .160 inch. Disc area, lead wire and length and moisture-proof seal are identical with Series 160. Dimensions of the case have been reduced to the most compact size. These units may be mounted in a standard midget fuse clip.



*Instrument Rectifiers*  
**LABORATORIES**

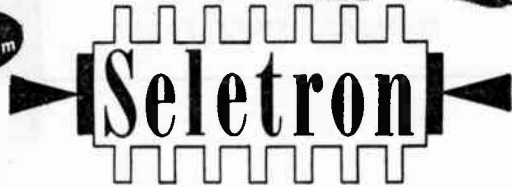
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Bendix Bldg., 1206 Maple Ave.,  
Los Angeles 15, Calif.  
Export Div., 75 West St., New York 6, N. Y.  
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OVER 2,000,000 MINIATURES IN SERVICE IN  
RADIO AND TELEVISION!



Miniatues

Built on  
Aluminum

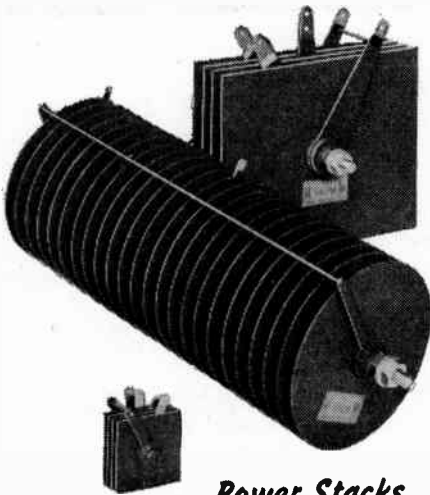


Reg. Trade Mark

## SELETRON RECTIFIERS

SELETRON Selenium Rectifiers are finding use in wider and wider fields of application ranging from half wave stacks for bias supply such as 8Y1 listed at the left, to multiple assemblies capable of delivering many kilowatts. Typical examples of such SELETRON power use are installations operating elevators in more than fifty office buildings in New York and Chicago, an assembly of 48 volts and 10,000 amperes for electrolysis of water, and the spectacular Eveready searchlight on New York's Great White Way.

MODEL NO.	PLATE SIZE	STACK THICKNESS	MAX. INPUT VOLTAGE R.M.S.	MAX. PEAK INVERSE VOLTAGE	MAX. D.C. OUTPUT CURRENT	LIST PRICE
1M1	1" sq.	3/8"	25	75	100 MA.	\$0.65
8Y1	1/2" sq.	1 1/8"	130	380	20 MA.	0.90
16Y1	1/2" sq.	1"	260	760	20 MA.	1.80
5M4	1" sq.	1 1/8"	130	380	75 MA.	1.30
5M1	1" sq.	7/8"	130	380	100 MA.	1.60
5P1	1 1/2" sq.	7/8"	130	380	150 MA.	1.90
6P2	1 1/2" sq.	1 1/8"	156	456	150 MA.	2.07
5R1	1 1/2" x 1 1/4"	7/8"	130	380	200 MA.	2.25
5Q1	1 1/2" sq.	1 1/8"	130	380	250 MA.	2.54
6Q1	1 1/2" sq.	1 1/8"	156	456	250 MA.	2.85
6Q2	1 1/2" sq.	1 1/8"	156	456	250 MA.	2.90
5Q51	1 1/2" x 2"	1 1/8"	130	380	350 MA.	3.28
6Q52	1 1/2" x 2"	1 3/8"	156	456	350 MA.	3.50
5S1	2" sq.	1 1/8"	130	380	500 MA.	3.75
6S2	2" sq.	1 3/8"	156	456	500 MA.	4.40



Power Stacks

### INDUSTRIAL TYPE SELETRON RECTIFIERS STOCKED BY JOBBERS Single Phase Bridge—Resistive-Inductive Load

D.C. OUTPUT @ 35° C.	MAX. INPUT		SELETRON CODE NO.	RECTIFIERS LIST EACH	BRACKETS LIST EACH
	MAX. AMPS.	APPROX. VOLTS			
0.9	17	24	Q1B1S1B	\$ 2.78	.15
1.6	18	24	D1B1S1B	4.49	.20
3.1	17	24	E1B1S1B	5.59	.20
5.2	17	24	F1B1S1B	7.48	.25
10.0	17	24	H1B1S1B	9.48	.40
16.0	18	24	H1B2S1B	18.22	.40
24.0	18	24	H1B3S1B	26.40	.40
0.45	35	48	WP2B1S1B	4.74	.15
0.9	35	48	WQ2B1S1B	5.46	.15
1.2	36	48	D2B1S1B	8.01	.20
1.6	35	48	WD2B1S1B	8.50	.20
3.1	35	48	WE2B1S1B	10.67	.20
5.2	34	48	WF2B1S1B	14.86	.25
10.0	34	48	WH2B1S1B	19.09	.40
16.0	35	48	H2B2S1B	34.32	.40
24.0	35	48	H2B3S1B	49.63	.40
0.9	105	144	WQ6B1S1B	13.46	.15
1.2	108	144	D6B1S1B	19.27	.20
2.4	106	144	E6B1S1B	24.29	.20
5.2	103	144	WF6B1S1B	39.67	.25
0.9	122	168	WQ7B1S1B	15.24	.15
1.2	126	168	D7B1S1B	21.87	.20
2.4	123	168	E7B1S1B	28.34	.20
5.2	120	168	WF7B1S1B	45.67	.25

Our Engineering Department will be glad to aid you in the solution of your rectifier problems without obligation. Write for booklet on SELETRON Selenium Rectifiers — Address Dept. US-3.

**RR SELETRON DIVISION RR**  
**RADIO RECEPTOR COMPANY, Inc.**  
Since 1922 in Radio and Electronics

Sales Department: 251 West 19th St., New York 11, N. Y.  
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# ● ELECTROX<sup>®</sup>

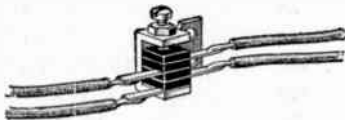
## Low-Capacity

# RECTIFIER UNITS

Used by most leading test set manufacturers as original components in their equipment.

\*Trade Mark Reg. U. S. Pat. Off.

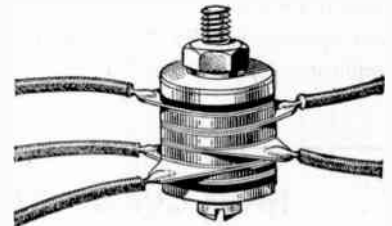
Full and half wave, low-capacity copper oxide rectifiers for instruments, test sets and similar applications. ElectroX Rectifiers are made by a pioneer manufacturer of high-quality, dry disc rectifiers. Each type is specially adapted to meet the individual requirements of the user; each unit is individually inspected, tested, and guaranteed right. For dependability, get genuine ElectroX Rectifiers!



TYPE A-4  
CAT. NO. 5020



TYPE B-2  
CAT. NO. 5047  
CAT. NO. 5049

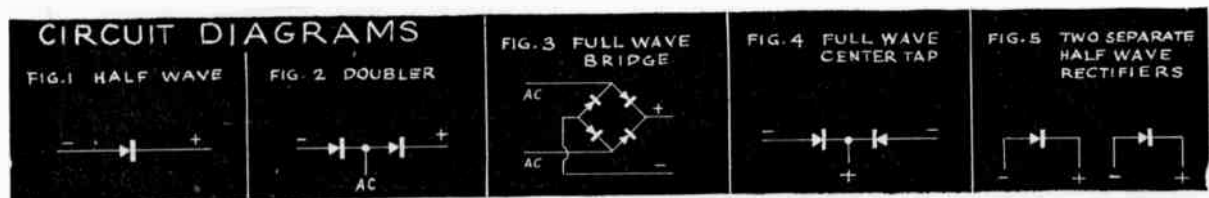


TYPE C-4  
CAT. NO. 5017

Max. Continuous Rating			Circuit Diagram Fig.	Element Diam. Inches	No. of Elements	Connections	Lead Length Inches	Type	Cat. No.
D.C. M.A.	D.C. Volts	A.C. Rms. Volts							
1	1	1.5	3	1/8	4	4 leads	4	AA-4	5064
5	3	4	3	1/8†	4	4 leads	3	A-4	5020
13		3	1	1/8	1	2 leads	3	B-1	5048
13		4	4	1/8	2	3 leads	3	B-2	5047
13		3*	2	1/8	2	3 leads	3	B-2	5049
20	3	4	3	1/8	4	5 leads	3	B-4	5016
32		3	1	3/8	1	2 lugs		C-1	5011
32		3*	2	3/8	2	3 leads		C-2	5057
32		3*	5	3/8	2	4 lugs		C-2	5010
64	3	4.1	3	3/8	4	5 lugs		C-4	5014
64	3	4.1	3	3/8	4	5 leads	3	C-4	5017

\*3 volts A.C. per element.

†3/8" square.



**SCHAUER MANUFACTURING CORP. • Cincinnati, Ohio**  
Makers, since 1930, of high-quality, dry disc rectifiers



# BRADLEY RECTIFIERS

UNIFORM IN RATING • VACUUM PROCESSED

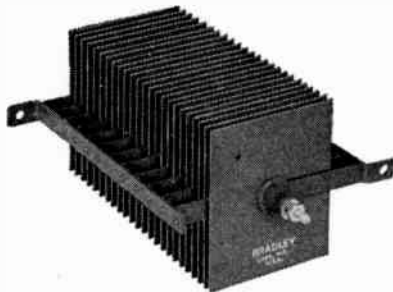
## BRADLEY SELENIUM RECTIFIERS

Bradley manufactures selenium rectifiers for operation from a few microamperes to many thousands of amperes and from fractions of volt to thousands of volts.

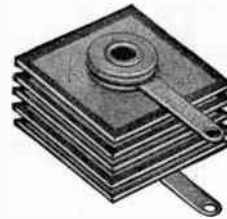
Our exclusive vacuum process insures low cost rectifiers with uniformity of rating. Power conversion is predictable, accurate and efficient.

On any rectification application involving special problems, consult Bradley. Our engineers can quickly specify the right rectifier for your requirements.

### HIGH CURRENT USES



**SE11X Series**  
These large power stacks provide good efficiency and stability. Plate sizes up to 5" x 6". Rated up to thousands of amperes.



### RS SERIES

BRADLEY RS MINIATURE RECTIFIERS replace most rectifier tubes in radio, television, amplifier and other DC power requirements. Rated 130 Max. RMS volts input, 380 volts peak inverse Max.

#### JOBBER STOCK SIZES

Model Number	Output Ma. DC	Maximum Plate Size
RS 65	65	1" x 1"
RS 75	75	1" x 1"
RS 100	100	1 <sup>3</sup> / <sub>16</sub> " x 1 <sup>3</sup> / <sub>16</sub> "
RS 150	150	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>2</sub> "
RS 200	200	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>2</sub> "
RS 250	250	1 <sup>1</sup> / <sub>2</sub> " x 1 <sup>1</sup> / <sub>2</sub> "

### HIGH VOLTAGE USES



#### SEB Series

These rectifiers are designed to provide maximum rating and efficiency with minimum size. One model — SEBL, rated 1.5 ma — is smallest completely sealed rectifier in class.

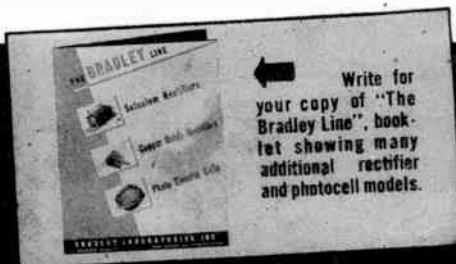
### COPPER OXIDE INSTRUMENT RECTIFIERS



BRADLEY COPPER OXIDE INSTRUMENT RECTIFIERS have vacuum-processed gold contacts for maximum efficiency and minimum temperature error. Precision made to meet the most rigid matching and balancing requirements, yet low in cost. Universal type rectifier shown for all replacements or AC meter conversions. Rated up to 12 volts AC, 5 ma DC.

### PHOTOELECTRIC CELLS

Bradley Lux-tron® photocells convert light directly into electric energy without external power source. They are versatile, rugged, true to rating, simple to install. Wide range of models, sizes and shapes.



Write for your copy of "The Bradley Line", booklet showing many additional rectifier and photocell models.

**BRADLEY**  
**LABORATORIES, INC.**  
82 MEADOW STREET, NEW HAVEN 10, CONN.

# SELENIUM RECTIFIERS • PHOTO-ELECTRIC CELLS

## FOR UNSURPASSED PERFORMANCE

### MINIATURE RECTIFIERS



130 Volts  
R.M.S.

Peak Inverse  
Volts: 380

**FOR ELECTRONIC APPLICATIONS UP TO  
1,000 MILLIAMPERES**

*As easily installed as a Resistor or Condenser*

**ONLY 2 SOLDERING OPERATIONS REQUIRED**

Approximate Voltage Drop: 5 volts

#### RATINGS AVAILABLE

Type No.	RS65	RS75	RS100	RS150	RS200	RS250
Current (ma)	65	75	100	150	200	250

Type No.	RS300	RS350	RS400	RS500	RS1000
Current (ma)	300	350	400	500	1000

SEND FOR TECHNICAL AND DESCRIPTIVE  
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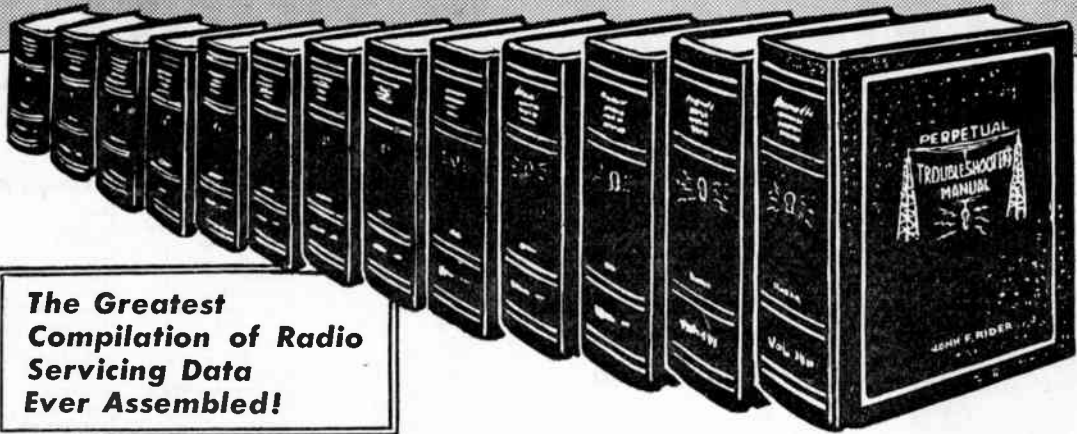
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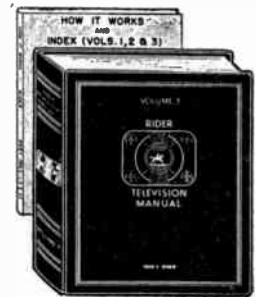
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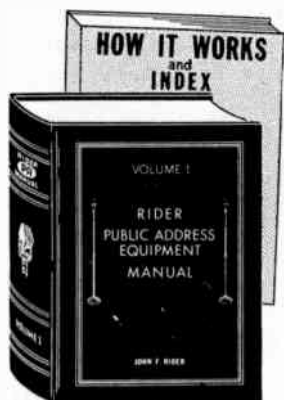
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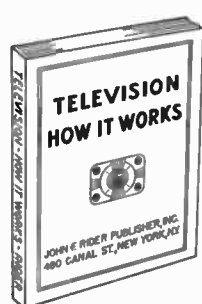
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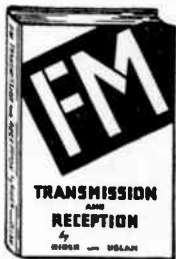
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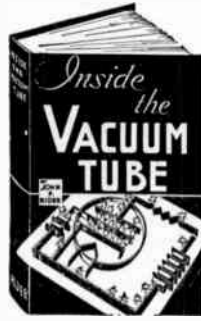


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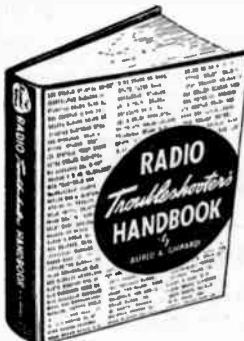
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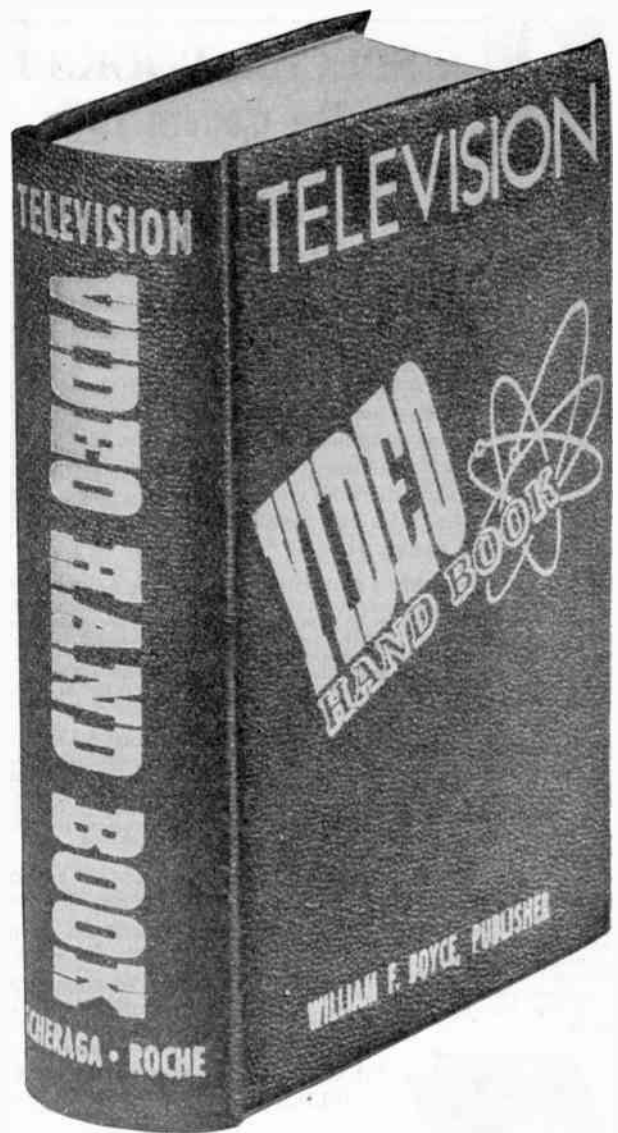
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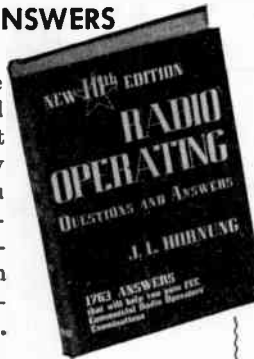
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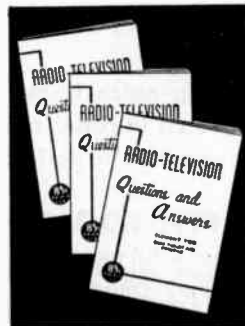
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Gives characteristics and socket connection diagrams for all RCA receiving tubes—Rectifiers, Detectors, Oscillators, Converters, Mixers, Voltage and Power Amplifiers, and Kinescopes. Also includes identification of miniature and metal types; discontinued types are keyed for the benefit of radio servicemen. 24 pages. Price: 10 cents each.



1275-D

## "POWER AND GAS TUBES FOR RADIO AND INDUSTRY." (PG-101A)

Twenty colorful pages of tabulated technical data, base diagrams, photographs, and "thumb-nail" sketches of the current RCA line of power and gas tubes for communication and industrial use. Includes more than 150 RCA Vacuum Power Tubes, Voltage Regulators, Rectifiers, Thyratrons, and Ignitrons in easy-to-read tabular form. Price: 15 cents each.

PG-101A



## "PHOTOTUBES, CATHODE-RAY TUBES, AND SPECIAL TUBES." (CRPS-102)

Sixteen colorful pages of tabulated technical data, base diamations and descriptions of more than 100 RCA Gas, Vacuum, and Multiplier Phototubes; Cathode-Ray Tubes; Camera Tubes; Monoscopes; Low-Microphonic tubes and other small tubes for special applications. Spectral response curves are given for all phototubes. Price: 10 cents each.



CRPS-102

## "QUICK REFERENCE CHART, MINIATURE TUBES." (MNT-30B)

Four-page folder containing descriptions, dimensions, ratings, socket connection diagrams, uses, and other detailed technical information on 64 RCA miniature tubes. Listed are Rectifiers, Diode Detectors, Triode Amplifiers, Diode-Triode Amplifiers, Pentode Voltage Amplifiers, Pentode Power Amplifiers, Beam Power Amplifiers, Pentagrid Converters, Thyratrons, and Voltage Regulators. Free.

MNT-30B



## "RCA TUBE HANDBOOK." (HB-3)

The "bible" of the industry. Over 2000 pages of data on uses, ratings, characteristics, operating conditions, dimensions, terminal connections and curves for RCA Receiving and Transmitting Tubes, Cathode-Ray Tubes and Phototubes, Thyratrons, Ignitrons and Special types. Supplied in three, deluxe, loose-leaf binders. Available on subscription basis. For details see Bulletin HBF-1-47. Handbook price: \$10.00 each.



HB-3

## "RADIOTRON DESIGNER'S HANDBOOK"

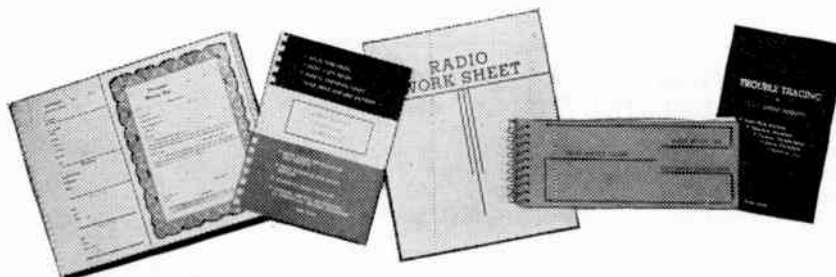
Edited by F. Langsford Smith of Amalgamated Wireless Valve Company Pty Ltd. in Australia. Of value to anyone interested in fundamental principles of practical circuit design. Discusses audio- and radio-frequency applications, rectification, filtering and hum, components, tests and measurements, tube characteristics, general theory and miscellaneous data. Copiously illustrated. 356 pages. Price: \$1.25 each.



RCA Technical Publications are available at your local RCA Distributor's or from Commercial Engineering, RCA Tube Department, Harrison, N. J. Prices shown apply in USA and are subject to change without notice.



**VALUABLE DEALER AIDS IN BUILDING CUSTOMER GOOD-WILL!**



**TELEVISION SERVICE PLAN**

Spiral bound book of 100 television installation and service contracts for use by the television dealer or installer. Two-part form contains set owner's certificate with terms and conditions of the contract simply written. Second part remains in book and contains spaces for customer data such as name, address, etc. Details of each installation and spaces for eight service calls. Each contract and stub individually numbered. Contracts are printed in attractive brown with durable maroon cover. Costs of service throughout the contract period can be readily determined at any time during the period and complete control over every contract is assured. Numbered series starts at 101 and runs through 1100 in groups of 100 numbers.

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**RADIO SERVICE STANDARD RATE BOOK  
3rd Edition**

The standard of fair dealing in the radio service industry. Complete pricing information and code of ethics designed to turn out a clean repair job at a fair price. The book contains six sections, edge-indexed, covers the major types of radios and record players. Average charges for specific repairs are shown in great detail and serve as an accurate means of comparison. Average prices of standard parts are shown to aid in estimating. Thorough coverage of crystal cartridges . . . 73 types pictured and 199 types listed with their prices, output voltage, needle pressure and correct modern replacement. Other features are Tube Substitution Chart, Portable Battery Cross Reference, Dial Belt Cross Reference and Ballast Substitution Chart. Book contains 50 pages with attractive enamel cover and is plastic spiral bound.

"RADIO SERVICE STANDARD RATE BOOK"  
per copy.....\$1.00

**RADIO WORK SHEET**

Pad of 50 sheets on which complete details of each repair job are shown so that set owner sees what he is paying for. 38 possible checks, adjustments and repairs are shown in check-off form. Spaces provided to show parts used and services rendered. Squared space provided for dealer rubber stamp. The "Work Sheet" is a valuable aid in building customer confidence and in turning out a clean repair job with no hidden charges.

"RADIO WORK SHEET".....per pad.....\$.60

**TROUBLE TRACING IN AC-DC RADIO RECEIVERS**

Fifty pages packed with essential and fundamental servicing information. Simply written, so that anyone with little radio experience can readily understand. Simple alignment procedures for superhets as well as T.R.F. Fifty case histories with their solutions as well as complete individual parts analysis are given. Written by Dick Wiseman (W9SD1), Chicago service expert and technical consultant with over 18 years' service experience.

"TROUBLE TRACING IN AC-DC RADIO  
RECEIVERS".....per copy.....\$1.00

**RADIO SERVICE RECORD**

A convenient means of keeping a permanent record of all service details on your customer's set. Complete, simple forms consisting of 3-part job tickets numbered and bound with 100 tickets to one book. Steel spiral binding permits book to be opened flat, and allows 4" x 6" size portion of ticket with customer informations to be left in book permanently for ready reference. Eliminates necessity of filing, although 4" x 6" portion is scored so that it may be removed from book and filed, if desired. 3-part ticket—part one portion is customer's receipt containing number of job and on which your rubber stamp imprint should be made. The 2nd part of the ticket is numbered and has 1/4" punched hole to be slipped on the volume control shaft of set. Part 3 is permanent 4"x 6" card containing the details of the repair, such as: customer's name, address, etc., make, model of set and itemized details of repair. Numbered series — 100 numbers to a book. Numbered books currently available — 1001-1100, 1101-1200, 1201-1300, 1301-1400, 1401-1500, 1501-1600, 1601-1700, 1701-1800, 1801-1900, 1901-2000, 2001-2100, 2101-2200, 2201-2300, 2301-2400, 2401-2500, 2501-2600, 2601-2700, 2701-2800, 2901-3000. Good grade of paper used — takes ink without blotting. Size 8 1/2" x 4" x 1 1/4".

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## MALLORY RADIO SERVICE ENCYCLOPEDIA (6th EDITION)

● It's the book you insisted on . . . the most complete Mallory Radio Encyclopedia ever published. You'll find over 600 pages of pre-war and post-war service data, up-to-date in every detail. And you'll find it all in *one handy volume!* You get complete tube complements, I.F. Peaks, circuit references, and original part numbers at your fingertips. Bigger and better than ever before—that's the 6th Edition Mallory Radio Service Encyclopedia! It will help you do a more thorough service job—more quickly—more profitably. Get your copy now from your nearby Mallory Distributor.

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## TELEVISION SERVICE ENCYCLOPEDIA

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**PRICE \$.35**

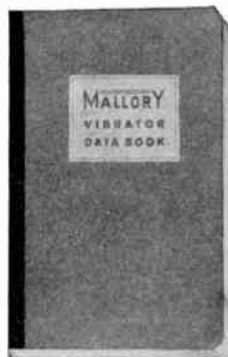


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● Here is the latest in radio theory and technical information, written so you can apply it to your everyday problems.

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## VIBRATOR DATA BOOK

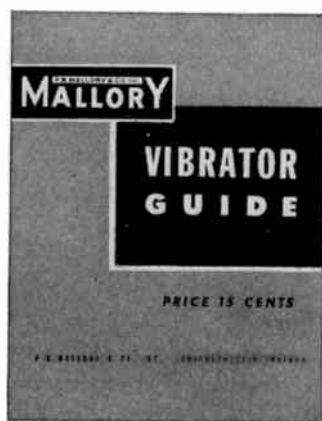
● Shared with you in this book are sixteen years of the most highly specialized power supply experience in the trade. *It cannot be duplicated anywhere else.* The Mallory Vibrator Data Book answers your questions about vibrators and vibrator power supplies. It's complete information . . . original . . . easy to read. So get your copy without delay.

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Colorful, profusely illustrated, indexed for easy reference. Ample application data and descriptions for each item. A special television section has been included for your convenience. There's a separate price list so your catalog will always be up-to-date.



## Mallory Vibrator Guide

One of the most useful publications in the radio service field. Up-to-date, completely organized for quick, accurate reference. Contains all available information through 1948 automobile and battery-operated home radio receivers as well as vibrator power supplies.

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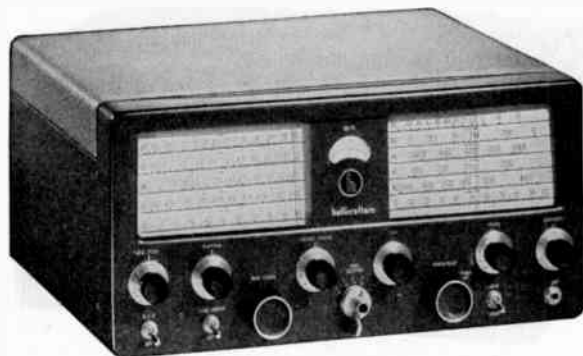
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from sources of supply listed  
in this book, please mention

*RADIO'S MASTER*

# hallicrafters RADIO

## New SX-71 Communications Receiver



From the Hams at Hallicrafters to Hams everywhere comes this top-performing receiver in the medium price class. A new type of receiver—the first of its kind on the market—value-packed with features specifically asked for by the Hams. Extra sensitivity, selectivity, and stability, definitely superior image rejection with double superheterodyne circuit, plus built-in Narrow Band FM reception. Extra wide dials for main and bandspread tuning. Surpasses in Ham performance many receivers priced much higher.

**PERFORMANCE:** Continuous AM reception from 538 kc to 35 Mc, and 46 to 56 Mc. Built-in limiter and balanced detector stages for hiss-free NBFM reception. Double conversion (2075 and 455 kc i-f channels) gives image rejection of better than 300 to 1 at

28 Mc. One r-f, two conversion, and 3 i-f stages yield high gain for sensitivity in the order of 1 microvolt. Sharp selectivity as indicated by the 14 kc band width (1000 times down from resonance) even before cutting the crystal filter into the circuit. Audio peaked for communications frequencies, with 3 watt output.

**CONTROLS:** Band Selector 538-1650 kc, 1600-4800 kc, 4.6-13.5 Mc, 12.5-35 Mc, 46-56 Mc. Separate Main and Bandspread tuning controls; bandspread dial calibrated for 80, 40, 20, 10, and 6 Meter Bands. BFO Pitch, 3-position Selectivity, Crystal Phasing, Tone, AF Gain, and RF Gain controls. ANL, BFO, and Receive/Send switches. "S" meter adjustment on rear.

**PHYSICAL DATA:** Gray steel cabinet with satin chrome trim. Piano hinge top. Size 18½ in. wide by 8¾ in. high by 12 in. deep.

**EXTERNAL CONNECTIONS:** Use doublet or single wire antenna. 500 ohm output for separate speaker. Phone jack. Socket for external power supply. Connections for remote control. Power cord. For 105-125 volts 50/60 cycle AC.

**11 TUBES PLUS VOLTAGE REGULATOR AND RECTIFIER:** 6BA6 r-f Amp., 6C4 Osc., 6AU6 Mixer, 6BE6 2nd Conv., three 6SK7 i-f Amps., 6H6 ANL, and delayed AVC, 6SC7 BFO and a-f Amp., 6AL5 Det., 6K6GT Output, VR-150 Reg., and 5Y3GT Rect.

SX-71. Ship wt. approx. 33 lbs. Net **\$189.50**  
R-46 Speaker. Matches SX-71. 500-ohm input 10-in. PM type. 15 in. wide, 10¾ in. high, by 10¾ in. deep.  
Ship. wt. 25 lbs. Net **\$19.95**

## SX-43 Communications Receiver

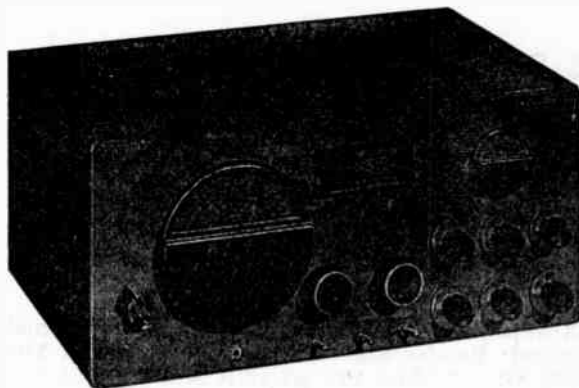
**WIDEST COVERAGE IN ITS PRICE CLASS . . . 540 KC TO 55 MC PLUS FM 88 TO 108 MC.**

A medium priced set with features not ordinarily found in communications receivers — extended coverage to include two extra bands plus FM reception. AM reception 540 KC - 55 MC; FM 44-55 and 88-108 MC. Temperature-compensated oscillator. One RF and two IF stages (3rd IF stage above 44 MC). Dual IF channels (455 KC and 10.7 MC). Audio response to 10,000 cycles; 3-watt output.

**CONTROLS:** Band Switch — #1 540-1700 KC, #2 1.7-5 MC, #3 5-16 MC, #3A 14-14.4 MC, #4 15.5-44 MC, #5 44-55 MC, #6 86-109 MC. Main tuning in MC. Band Spread Dial calibrated for 3.5, 7, 14 and 28 MC bands. Two-position tone, Receive/Standby and Noise Limiter switches. Crystal Phasing, RF Gain, Phono/FM/-AM-AVC/AM-MVC/CW Four-Position Selectivity, AF Gain, CW Pitch. "S" meter adjustment on rear.

**PHYSICAL DATA:** Gray steel, satin chrome trim. Piano-hinge top. 18½ by 8¾ by 12 in.

**EXTERNAL CONNECTIONS:** Doublet or single wire antenna. 500 and 5000-ohm outputs. Phone jack. Phonograph input jack. Socket for external power supply. Remote standby connections. 105-125 volt 50-60 cycle AC.



**10 TUBES PLUS RECTIFIER.** 6BA6 RF Amp., 7F8 Conv., 6SG7 IF Amp., 6SH7 2nd IF Amp., 6SH7 3rd IF Amp. (10.7 MC), 6H6 AM Det. and ANL, 6AL5 FM Det., 6SQ7 Audio, 6J5 BFO, 6V6 Output, 5Y3 Rectifier.

SX-43. Ship. wt. 45 lbs. Amateur Net **\$169.50**  
R-44 Speaker (not shown). 6 by 9 in. oval PM type in metal cabinet matching SX-43. Two-position Tone switch. 500-ohm input. Size 18½ by 8¾ by 9¾ in. deep. Ship. wt. 19 lbs. Net **\$24.50**  
(Prices Slightly Higher West of Rockies)



# hallicrafters RADIO

## S-40A Communications Receiver

540 KC to 43 MC . . . TEMPERATURE COMPENSATED OSCILLATOR. ONE RF AND TWO IF STAGES. An outstanding value offering excellent performance in the lower medium price range. Here is the set that has endeared itself to thousands of hams all over the world for its sturdy construction and dependable performance. It is the largest Hallicrafters set with built-in speaker.

**CONTROLS:** Band Switch — #1 1540-1700 KC, #2 1.7-5.35 MC, #3 5.35-15.7 MC, #4 15.7-43.0 MC. Main tuning in MC; Bandspread has arbitrary scale. AF Gain, RF Gain; AVC, BFO and Noise Limiter switches; three-position Tone, BFO Pitch, Receive/Standby. Settings for Broadcast marked in color.

**PHYSICAL DATA:** Satin Black steel cabinet with brushed chrome trim. Top opens on piano hinge. Size 18½ in. wide by 9 in. high by 11 in. deep.

**EXTERNAL CONNECTIONS:** Doublet or single wire antenna. Phone jack. Socket for external power supply. Remote standby connections. 105-125 v. 50-60 cycle AC.



8 TUBES PLUS RECTIFIER: 6SG7 RF Amp., 6SA7 Conv., two 6SK7's IF Amps., 6H6 ANL and AVC, 6J5GT BFO, 6SQ7 2nd Det. and AF Amp., 6F6G Output, 80 Rectifier.

S-40A. Ship. wt. 33 lbs. . . . . Amateur Net **\$89.95**



## S-52A Communications Receiver

540 KC - 31 MC PLUS 48-54.5 MC . . . 2 IF STAGES. Offers maximum performance in small size.

Long popular with beginning hams, this receiver's compact design with built-in speaker and its distance-getting reception have also made it the prized possession of many a broadcast listener who was willing to pay a little bit more in cost, to obtain a lot more in performance.

**CONTROLS:** Main tuning in MC; separate Band Spread; Receive/Standby; Band switch — #1 540-1630 KC, #2 2.5-6.3 MC, #3 6.3-16 MC, #4 14-31 MC, #5 48-54.5 MC; AM/CW; RF Gain; Noise Limiter; AF Gain; 2-position Tone, Speaker/Phones on rear.

**PHYSICAL DATA:** Steel cabinet, brushed chrome trim. Piano hinge top. Size 12½ by 7 by 7¾ in.

**CONNECTIONS:** Doublet or single wire antenna. Phone tip jacks. Phono jack. 105-125 v. 50-60 cycle AC.

7 TUBES PLUS RECTIFIER: 6C4 Osc., 6BA6 Mixer, two 6A6's IF Amps., 6H6 Det., AVC, and ANL, 6SC7 BFO and AF Amp., 6K6GT Output, 5Y3 Rectifier.

S-52A. Ship. wt. 23 lbs. . . . . Amateur Net **\$79.95**



## S-38A Communications Receiver

540 KC - 32 MC in 4 BANDS . . . THE LOWEST PRICED COMMUNICATIONS RECEIVER ON THE MARKET . . . with many features of much higher priced receivers.

Here is truly "The Radio That Amazes Even the Experts." Who else but Hallicrafters, with their long record of being the first to build commercial-quality equipment at prices for the amateur, could offer so much performance for such little cost.

**CONTROLS:** Main tuning in MC; separate Band Spread, Speaker/Phones, AM/CW; Band Switch — # 1 540-1650 KC, # 2 1.65-5.0MC, # 3 5.0-14.5 MC, # 4 13.5-32 MC, AF Gain; Receive/Standby.

**PHYSICAL DATA:** Satin black steel cabinet, brushed chrome trim. Size 12½ by 7 by 7¾ in. deep.

**CONNECTIONS:** Doublet or single wire antenna. Phone tip jack. Cord for 105-125 v. AC or DC.

4 TUBES PLUS RECTIFIER: 12SA7 Conv., 12SK7 IF Amp. and BFO, 12SQ7 Det. & AVC, 50L6GT Output, 35Z5GT Rectifier.

S-38A. Ship. wt. 14 lbs. . . . . Amateur Net **\$49.50**

# hallicrafters RADIO

## SX-62 FM/AM All-Wave Radio



SWL VERSION OF FAMOUS SX-42 . . . COVERAGE 540 KC — 109 MC INCLUDING FM . . . BUILT-IN CRYSTAL CALIBRATOR.

Having basically the same chassis as Hallicrafters best communications receiver, the SX-62 provides communications-receiver performance in simplified form. A single tuning control covers the wide-vision dial. Only one band lights up at a time — you always know just where you are tuning.

In addition a crystal calibration oscillator is built in. A flip of the switch at any time will put test signals at 500 KC intervals across the dial. You just tune in

the nearest one of these signals and then use the calibration-reset control to adjust the dial pointer to the exact frequency.

Continuous AM reception from 540 KC to 109 MC; FM reception 27-109 MC. Temperature-compensated oscillator with voltage regulator. Two RF and three IF stages; dual IF channels (455 KC and 10.7 MC). Audio flat 60-15,000 cycles; 8-watt push-pull output. CONTROLS: Band Selector — #1 540-1620 KC, #2 1.62-4.9 MC, #3 4.9-15 MC; #4 15-32 MC, #5 27-56 MC, #6 54-109 MC; Receive/Standby, Crystal calibration On/Off, Noise Limiter, Tuning, AF Gain, Phono/FM/AM/CW, six-position Selectivity, four-position Tone, RF Gain, and Calibration Reset.

PHYSICAL DATA: Gray steel cabinet with satin chrome trim. Top opens on piano hinge. Size 20 in. wide by 10 $\frac{1}{4}$  in. high by 16 in. deep.

EXTERNAL CONNECTIONS: Doublet or single wire antenna. 500 and 5000 ohm outputs. Phone jacks. Phonograph jack. Socket for external power. Remote standby connections. 105-125 volt 50-60 cycle AC line. 14 TUBES PLUS VOLTAGE REGULATOR AND RECTIFIER: two 6AG5's RF amps., 7F8 Conv., 6SK7 IF Amp., 6SG7 IF Amp., 7H7 IF Amp., 7H7 Limiter and AM Det., 6H6 Discriminator, 7A4 BFO, 6H6 ANL, 6SL7 AF Amp., two 6V6's Push-pull Output, 6CA Calibration Osc., VR-150 Regulator, 5U4G Rectifier.

SX-62. Ship. wt. 65 lbs. . . . . Amateur Net **\$269.50**

## New S-72 Portable Communications Receiver



You'll always be in touch with the outside world wherever you go with this Hallicrafters extra-sensitive all-wave portable receiver. Super-powered for superb performance with latest circuits and devices for maximum efficiency on AC, DC or battery operation. Designed both for the person who wants better than average reception even in weak signal areas and for the Radio Amateur.

PERFORMANCE: Covers standard broadcast band and three short-wave bands—540 kc to 30.5 Mc. One stage of tuned r-f amplification. Operates from built-in antennas—loop for broadcast and 27 in. whip for short-wave. Automatic Noise limiter. Image ratio 140 to 1 at 11 Mc, 18 to 1 at 30 Mc. Overall sensitivity

1.8 microvolts at 30 Mc, ranging to 6 microvolts at 1.7 Mc. Broadcast Band sensitivity with loop antenna 16 microvolts per meter.

CONTROLS: Band selector switch gives four tuning ranges: 540-1600 kc, 1500-4400 kc, 4.3—13 Mc, and 12—31 Mc. Sensitivity control. Turns on AVC when advanced to full "On" position, at the same time turning off BFO. Volume control combined with main OM/Off switch. Main tuning knob; separate band-spread control. Tone control combined with fine tuning control.

PHYSICAL DATA: Sturdy plywood cabinet, finished in handsome brown leatherette. Space for headphones. Size 14 in. wide, 12 $\frac{1}{4}$  in. high, by 7 $\frac{1}{4}$  in. deep. Carrying weight approx. 15 lbs., incl. batteries.

EXTERNAL CONNECTIONS: Phone jack on panel. Provision for attaching supplementary antenna if desired. Power cord for 105-125 volts DC or 60 cycle AC; fits inside set when not in use. Automatic change-over from battery to electric power protects batteries. Power consumption on battery operation 100 ma. at 7.5 V. and 30 ma. at 90 V. Average battery pack lasts 50 to 100 hours depending upon length of continued use. Takes RCA VS018, Burgess G6M60, General 60B6F65 and similar battery packs.

8 TUBES PLUS RECTIFIER: 1T4 r-f Amp., 1R5 Osc., 1U4 Mixer, two 1U4 i-f Amps., 1U5 Det. and a-f Amp., 1U5 BFO and Automatic Noise Limiter, 3V4 Output, plus long-life Selenium Rectifier.

S-72. Less Battery. Ship. wt. 16 lbs. . . . . Net **\$99.95**

LONG-WAVE MODEL — S-72L. Covers airways radio ranges, airport control towers, and marine beacons. Same as S-72 only range 175-400 kc and 535-12,300 kc. . . . . Net **\$109.95**

# hallicrafters RADIO

## New HT-4G Transmitter

1950 version of famous Communications Work Horse of World War II, praised by veterans everywhere. Maximum dependability and flexibility for high-power AM or CW.

**PERFORMANCE:** Continuous range 2 to 18 MC. with eight osc. tuning units and seven output coils (plug in through top). Electron coupled oscillator. MO or Xtal. Output 450 watts CW or 300 watts phone.

**CONTROLS:** On tuning units—MO or Xtal. Osc. Grid Tuning. Doubler Tuning, Int. Amp. Tuning. On front panel—Band Switch to select any one of three previously installed tuning units; PA Tuning; Meter Switch. Filament voltage control and meter; Phone/CW Overload reset; Modulator Bias; Filament power switch with pilot light; Exciter Plate; HV-protect switch; plate power with pilot light.

**PHYSICAL DATA:** Black crinkle enamel, 19½ in. wide, 39¾ in. high, 32¼ in. deep. All transformers hermetically sealed. Shock mounted. Eight tuning units, seven output coils, power cable included.

**CONNECTIONS:** Cable to speech amp.; power cable for 105-120 volts 60 cycle AC—peak power input total 2500 watts. Two antenna terminals.

**TUBE LINEUP:** 6V6GT electron coupled osc., 6L6 Buffer, two 807 Int. Pwr. Amp., 250 Pwr. Amp.; in modulator two 2A3 Drivers, two 100TH mod.; 5Z3 Exciter Rect., 5Z3 Bias Rect., two 3B28 HV Rect., three VR-150 Reg. HT-4G. Ship wt. 710 lbs. Amateur Net **\$1520.00**

## HT-5G Speech Amp (Shown at left)

Serves as speech amp and control unit for HT-4G, for modulated or unmodulated operation. Plate power switch for remote control of Xmtr PA plate. Jack for key. Size 17 x 10 x 11 in. deep. Power and control cable to Xmtr included. 105-120 volts 60 cycle AC. 6SQ7, 6J5 a-f Amps., 6SN7GT Phase Inverter, 6SN7GT Amp., 6SR7 Mod. Limiter, 6SN7GT Sidetone Osc., 6J5 Sidetone a-f Amp., 80 Rect.

HT-5G. Ship. wt. 85 lbs. Amateur Net **\$217.00**

## HT-18 Variable Freq. Oscillator

Complete exciter with calibrated band-switching and built-in power supply. Xtal or VFO, NBFM or CW on 5 Bands. Output 2.5-4.5 watts. Temperature compensated, voltage regulated. Built-in speech amp.

Variable frequency oscillator (used as ECO or Pierce xtal), frequency modulator with speech amplifier, plus 6L6 output. Operation switch, Band Selector (80, 40, 20, 10, 6 meters). Check, Plate, Power, and Deviation switches. Single tuning control. Mike, keying, remote control connections. 72-ohm output. 3 6BA6, 6L6, VR-150, VR-105, 5Y3GT. Size 12¾ x 7 x 7¾ in. deep.

HT-18. Ship. wt. 25 lbs. Amateur Net **\$110.00**

## S-51 Marine Receiver

Rugged and specially constructed for dependable sea or air use. Range 132 KC to 13 MC covers all important channels. Fixed frequency operation possible on three pre-tuned channels; facilitates switching frequency and/or standing guard. Built-in PM speaker. **CONTROLS:** Band Selector — 132-405 KC, 485-1530 KC, 1450-4550 KC. 4.2-13.0 MC, plus 3 fixed freq. positions in 200-300 KC and 2-3 MC range; RF gain, Volume, CW/AM, Range Filter, ANL, Tuning, 3 position Tone, CW Pitch, Rec./Standby. Gray steel cabinet: 18½ by 9 by 9½ in. deep; piano hinge top. Doublet or single wire antenna. Phone jack. Socket for 6, 12, or 32 v. vibrapack. 105-125 v. 50-60 cycle AC or DC. **9 TUBES PLUS RECTIFIER:** 6SS7 RF Amp., 7A8 Conv., two 6SS7's IF Amps., 7C6 Det., 35L6 or 6V6 Output, 7A6 Noise Limiter, 6SS7 BFO, 35Z5 Rectifier. S-51. Ship. wt. 31 lbs. Amateur Net **\$149.50**  
Vibrapack for 6, 12, or 32 v. operation **\$22.50**



# Harvey-WELLS ELECTRONICS, INC.

SOUTHBRIDGE, MASS.

## BANDMASTER TRANSMITTERS



### America's Most Versatile Transmitters

40 to 50 Watts - 8 Bands - Phone or CW — No Plug-In Coils  
80, 40, 20, 15, 11, 10, 6 and 2 Meters (completely wired and tested — not a kit)

100% BREAK-IN OPERATION

## BANDMASTER JUNIOR

Meet the new streamlined, stripped-for-action version of the well-known TBS-50 at a popular price. We haven't just taken out the modulator to produce a top-notch rig for the CW man — we've added plenty of features which the dit-dah gang consider necessities in their shacks — COUNT 'EM: optional crystal control or vfo input, 100% break-in keying with your external vfo (with one keying lead grounded) and a radically new crystal-oscillator-vfo switching circuit which helps even most sluggish crystals to follow your bug at 40 per. Old TBS features are included too, including band switching from 3.5 mc to 148 mc, integral antenna coupler and an excitation control to set the output level if you want to drive your gallon with the Bandmaster Jr.

Serves equally well for mobile or fixed station operation. Will operate from A.C. power packs up to 450 volts at 275. ma. vibrator supply or dynamotor supply for portable mobile operation. Employs Pi antenna matching network. Power input to final is 50 watts with 450 volt power supply on Bands 1 through 7, 30 watts on Band 8. All circuits are sufficiently broad to tune completely over and band with adequate excitation for any frequency on the first six bands. Retuning may be necessary to cover the entire 6 and 2 meter bands. No tuning adjustments are necessary except those necessary to resonate the final output to the antenna. May be mounted on rack panel with power supply.

**\$87.50**

ALL THIS FOR ONLY .....

CONTROLS: Band Switch, Excitation Control, Antenna Loading, Amplifier Tuning, Power-on Switch, Carrier-on Switch, Meter Switch. Antenna network will match non-reactive feeder of approximately 50-500 ohms. Frequency calibration chart on front panel as well as 0-10 ma. DC milliammeter.

TUBES: 6AQ5 Crystal Oscillator, 6AQ5 Buffer-Multiplier, 807 Final Amplifier. In sturdy steel cabinet, 8" wide by 12" high by 8" deep.

### BANDMASTER JUNIOR MODULATION KIT . . . Only \$15.50

You can add this at a later date. Kit is simple to install and comes with complete instructions. This kit makes a BANDMASTER SR. out of your Jr.

### BANDMASTER SENIOR . . . \$111.50

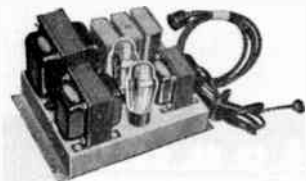
A complete ready to go phone transmitter, the new version of the old TBS-50 with all the new features of the Bandmaster Jr. including the new crystal-oscillator-vfo switching circuit. Phone or CW — Eight bands — 80, 40, 20, 15, 11, 10, 6 and 2 Meters. Ideal for either mobile or fixed station use. 2 — 6L6 Class B Modulators. TUBES: 6AQ5 Crystal Oscillator, 6AQ5 Buffer-Multiplier, 807 Final Amplifier, 2 — 6L6 Class B Modulators. In sturdy steel cabinet, 8" wide by 12" high by 8" deep.

### BANDMASTER DELUXE . . . \$137.50

The last word in a versatile small transmitter for ham or commercial use. Used extensively in foreign countries for important commercial applications. Has built-in three tube pre-amplifier for use with crystal mike and ALL the features of both the Bandmaster Jr. and Sr.

BANDMASTERS NOW AVAILABLE WITH BUILT-IN ANTENNA CHANGEOVER AND PUSH TO TALK RELAY AT SMALL EXTRA COST

## POWER SUPPLIES AND ACCESSORIES



### APS-50

Delivers 425 v. at 275. ma. and 6.3 v. at 4 amps. May be mounted on rack panel. For 110 Volt A.C. 50-60 cycles.

**\$39.50**



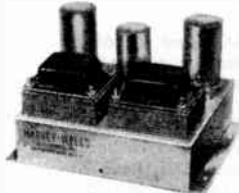
### DPS-50

A dynamotor supply for portable operation. Delivers 300 Volts 250 ma.

For 6 Volt operation **\$87.50**

For 12 Volt operation **\$54.50**

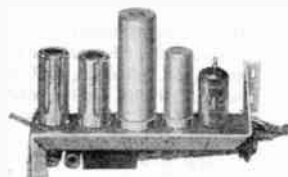
(400 Volts 250 ma.)



### VPS-50

A six volt vibrator supply developed specially for use with the Bandmaster line. Delivers 300 Volts 200 ma.

**\$29.75**



### CMA-50

Crystal microphone pre-amplifier. The unit built into the Bandmaster DeLuxe which you may add to other Bandmaster models. Simple to install.

**\$22.00**



the finest amateur receiver  
National has ever built!

## THE NEW DIRECT READING HRO-50

Now, National presents a great new HRO receiver after more than three years of designing, development and testing. Retaining all the world-famous, performance-proved HRO features, this superb receiver — the finest National has ever made — now incorporates no less than 14 advanced-design innovations. Exhaustive comparative tests indicate the new HRO-50, by far the most modern and versatile in its field, will set an entirely new standard of performance for communication receivers.

**Tube Complement:** 1st RF, 6BA6; 2nd RF, 6BA6; Mixer, 6BE6; HF oscillator 6C4; voltage regulator OB2; 1st I.F., 6K7; 2nd I.F., 6K7; Det., AVC, 6H6; B.F. Oscillator, 6J7; Noise Limiter, 6H6; 1st Audio, 6SJ7; phase inverter/ "S"-meter amp. 6SN7; Push-pull audio, 2-6V6; Rectifier, 5V4G; accessory crystal calibrator, 6AQ5; NFM adapter I.F. amplifier, 6SK7, Ratio detector, 6H6. Freq. range: 50 kc.-420 kc., 480 kc.-35 mc Coils AA, B, C, and D furnished covering standard amateur 160-10 meter bands.

**Dimensions:** 16½" deep x 19¾" wide x 10⅛" high.  
**Price:** \$335.00\*(less speaker). 10" spkr. \$14.00.

**Accessories:** 100/1000 kc. calibrator, \$19.95. NFM-50 adapter, \$16.95. SOJ-3, \$24.95.

## 14 ALL NEW FEATURES

1. Direct frequency reading linear scale with a single range in view at a time.
2. Provisions for using 100/1000 kcs. crystal calibrator unit, switched from panel.
3. Variable front-of-panel antenna trimmer.
4. Built-in power supply with heat resistant barrier.
5. Front-of-panel oscillator compensation control.
6. B.F.O. switch separated from B.F.O. frequency control.
7. Provision for incorporation of NFM adapter inside receiver, switched from front panel.
8. Dimmer control for dial and meter illumination.
9. Miniature tubes in front end and high frequency oscillator.
10. Speaker matching transformer built into receiver with 8 and 500 -ohm output terminals.
11. High frequency and beat frequency oscillator circuits not disabled when receiver in "send" position.
12. High-fidelity push-pull audio amplifier, 8 watts undistorted output.
13. Tip jack for phono input.
14. Accessory socket for Select-o-Ject (see page 4).

**National**

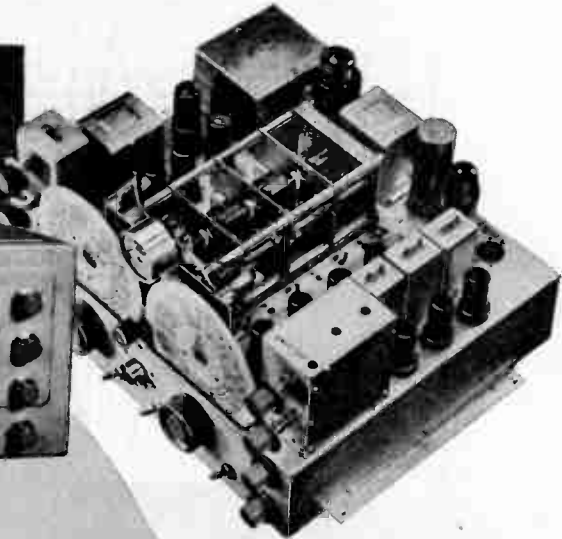


EST 1914

**NATIONAL COMPANY, Inc.**  
MALDEN, MASSACHUSETTS



deluxe receiver for optimum reception under all conditions!



## NC-183

The flawless design and superb construction of this professional communication receiver make possible amazing performance even under the worst operating conditions. If it's possible to receive a signal, the NC-183 will bring it in!

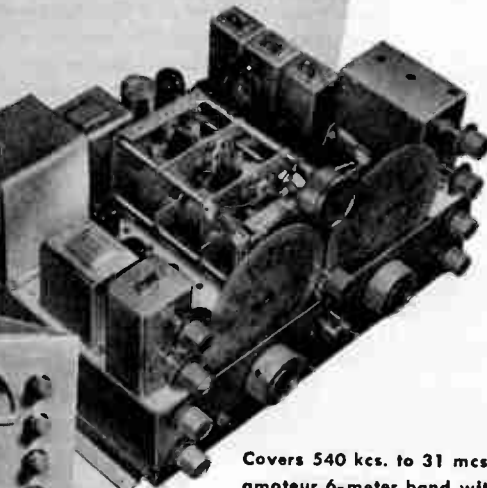
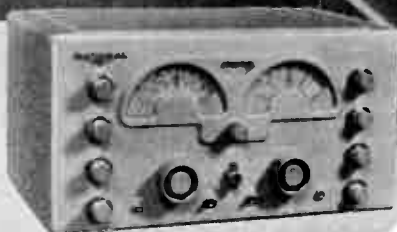
Continuous tuning from 540 kcs to 31 mcs plus the 48 to 56 mcs band for 6-meter reception. Two tuned R.F. stages provide extremely high sensitivity and image rejection. Voltage regulated oscillator and BFO assure minimum drift on phone and CW. Separate main tuning and bandsread dials calibrated for tuning ease. Main dial covers range

in five bands. Bandsread dial calibrated for amateur 80, 40, 20, 11-10 and 6-meter bands. Bandsread usable over entire range. Six-position crystal filter provides any selectivity required from very broad to extremely sharp for cutting through adjacent channel interference. New-type noise limiter effectively minimizes electrical interference. High fidelity push-pull audio output with phono input and front-of-panel RADIO-PHONO switch. Accessory socket for NFM adaptor or other unit, such as crystal calibrator. Uses 2-6SG7 R.F.; 16SA7 1st det.; 1-6J5 osc.; 2-6SG7 I. F.; 1-6H6 2nd det.; 1-6SJ7 B.F.O.; 1-6AC7 A.V.C.; 1-6H6 noise limiter; 1-6SJ7 A.F.; 1-6J5 phase inv.; 2-6V6GT aud. out.; 1-VR-150 volt. reg.; 1-5V4G rect. Accessory socket for Select-o-Ject (see page 4).

**\$268 net\***  
(less speaker)



the record-breaking choice of experienced amateurs the world over!



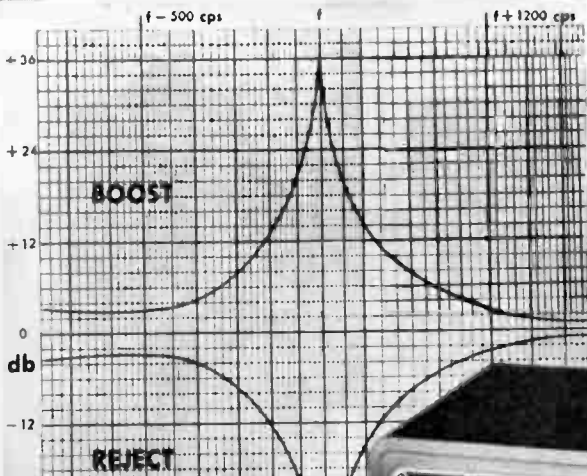
## NC-173

The only moderate-priced receiver built to National's world-famous standards of sound construction and truly professional performance! Thousands of these sets now in operation attest its popularity and performance.

Covers 540 kcs. to 31 mcs. plus 48 to 56 mcs. for amateur 6-meter band with average sensitivity of 3 microvolts. Separate bandsread dial calibrated for 80, 40, 20, 10 and 6 meter bands. New double-diode noise limiter with variable threshold effective on both phone and CW. Separate AVC usable on phone and CW. New wide-range, 6-position crystal filter, 5-meter, antenna trimmer for maximum performance with any antenna, phono input. 1-6SG7 tuned R.F.; 1-6SA7 1st det.; 1-6J5 osc.; 2-6SG7 I.F.; 1-6H6 2nd det. — AVC; 1-6AC7, AVC; 1-6SJ7 BFO; 1-6H6 noise limiter; 1-6SJ7 audio; 1-6v6 output; 1-VR150 volt. reg.; 5Y3GT/G rect.

**\$199.50 net\***

\*Slightly higher west of the Rockies.



amazingly versatile  
new audio filter!



## SELECT-O-JECT\*

**BOOSTS 38 db! REJECTS 38 db! ANY SELECTED FREQUENCY!**

SOJ-1 for all receivers  
SOJ-2 wired for HRO-50, NC183 or NC-173  
\$24.95 net\*

\* Patent applied for. Manufactured under exclusive agreement with Dr. O. G. Villard, Jr., Engineering Dept., Stanford University.

Set SELECT-O-JECT for REJECT, tune by ear and — presto! — an annoying heterodyne or other unwanted signal practically disappears without materially affecting the wanted signal! Set SELECT-O-JECT for BOOST, tune — and — presto! — a selected signal rises above background noise and interfering signals! Can also be used as audio oscillator having over 100 to 1 frequency range with a single rotation of the tuning knob! Excellent as a code practice oscillator! Effective on any frequency from 80 c.p.s. to 9,000 c.p.s.! This is the amazing circuit described in the November 1949 issue of QST, page 11. See your National dealer for details.



outperforms receivers  
costing twice as much!



## NC-57

Built with all the engineering know-how and craftsmanship of National's more expensive receivers, the NC-57 combines features never found before at this low price! The set used by a recent winner of a DX contest sponsored by the internationally famous Shortwave Club of London. Both phone and CW reception over entire frequency spectrum from 550 kcs to 55 mcs in 5 bands. Built-in power supply and PM speaker — nothing else to buy. Voltage stabilized oscillator circuit keeps signal steady regardless of line voltage fluctuations. Automatic threshold noise limiter minimizes interference due to ignition noise, static, etc.

Controls include Main Tuning, Bandsread Tuning, Band Switch, RF Gain, RF Trimmer, BFO-MVC-AVC, ANL Switch, AF Gain, BFO Pitch, Tone Control and On-Off Switch.

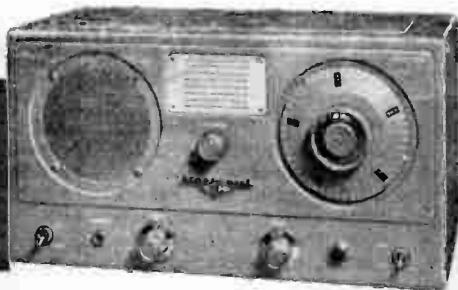
Superhet uses: 6SG7 RF amp., 6SB7Y conv., 2-6SG7 IF amp., 6H6 Det., AVC, ANL, 6SN7 Audio amp., BFO, 6V6GT Audio amp., 5Y3GT rect., VR-150 voltage rect. Antenna terminals for single, double or co-ax antenna lead-in. Provision made for connecting external "S" meter plus other accessories. 105-120 V, 50-60 cyc. AC. Gray enamel finish. 16½" x 11¼" x 8¾". Wt. 33 lbs.

**\$89.50 net\***



**NC**

most popular and versatile  
VHF design in the field!



### HFS

Here is the perfect answer to the need for compact, dependable and versatile VHF reception. Can be used as a complete receiver in itself or as a VHF converter with any receiver tuning to 10.7 mcs. As converter, makes features of connected receiver usable on VHF. Covers entire high frequency spectrum from 27 mcs to 250 mcs — receives A M, FM and CW with amazing selectivity and sensitivity.

Two-gang Main Tuning Capacitor, panel-controlled Antenna Trimmer Capacitor and 6 sets of plug-in coils tune the receiver in six bands. Power furnished by separate unit. Power supply listed below is excellent where 115-230 V, 50-60 cycle AC is available. Also operates with combination of "B," and storage batteries or 6 volt vibrator-type supply. Wt. 25 lbs.

**\$142.00\*** net  
Power Supply, 15 lbs.,  
\$22.43 net

**NC**

the ideal receiver for shipboard  
use or shortwave listening!



### NC-57M

Combining versatility, dependability, exceptional sensitivity, and extended frequency range, the NC-57M is ideal as a personal receiver aboard ship or in the shortwave listener's home. Offers continuous frequency range from 540 kcs to 35 mcs plus 200 kcs to 400 kcs. Receives voice, music, and CW code. Bandspread action on any desired frequency assures optimum selectivity. Covers U.S. and European broadcast bands plus shortwave. Scales are marked to show location

of such features as amateur, police and foreign frequencies. Voltage regulated oscillator assures excellent stability, regardless of line changes. Built-in power supply for operation from 110/120 volts, either AC or DC. 220-volt operation possible by insertion of external ballast resistor in power plug. Tubes include 6SG7 RF, 6SB7-Y conv.; 6SG7 1st IF; 6SG7 2nd IF; 6H6 2nd det., AVC, ANL; 6SL7 GT/G 1st audio, CWO; 25L6GT aud. out.; OA3/VR-75 volt. reg.; 25Z6GT rect.

**\$89.50\*** net

**NC**

feature for feature —  
biggest receiver dollar value!



### NC-33

Now at last you can get a top-notch communication receiver designed and built by the world-famous National Company at a price that compares favorably with the lowest in the market! Packed with features found in no other receiver at the price!

Four tuning bands provide continuous coverage from 500 KC to 35 MC. Main tuning and bandspread capacities connected in parallel on all bands for bandspread operation at any frequency within tuning range. Amateur, police and foreign broadcast bands clearly identified.

Other big set features include: Automatic Noise Limiter, CW oscillator and pitch control for adjustment of beat note, and Send/Receive Switch. Output to 5" speaker or phone jack which cuts out built-in speaker when headphones are in use. Tunes international SOS frequency. Front-panel mounted controls include: Main tuning, band selector switch, beat oscillator pitch control, code-phone switch, noise limiter switch, and audio gain.

New superhet circuit uses latest type high efficiency tubes. 105-125 V, 50-60 cycles AC or DC.

**\$57.50\*** net

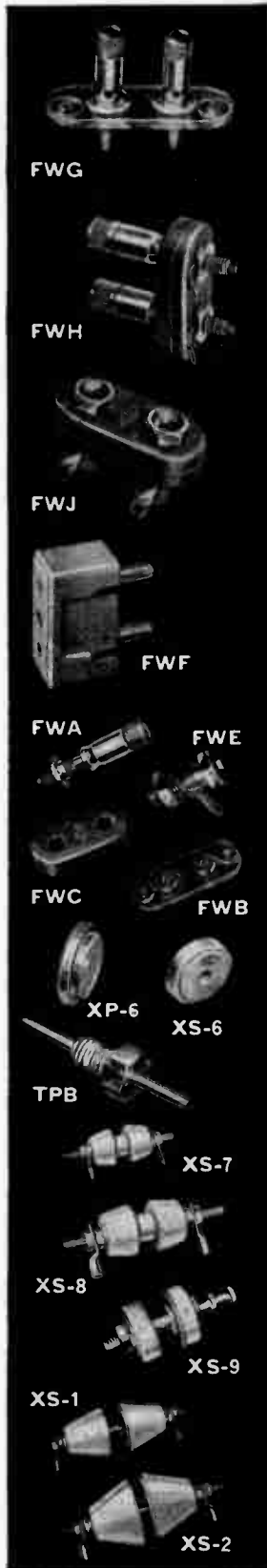
\*Slightly higher  
west of the Rockies.

FOR COMPLETE INFORMATION ON INDIVIDUAL RECEIVERS WRITE

# NATIONAL COMPANY INC.



# POPULAR COMPONENTS



**FWG** Net \$ .60  
A Victron terminal strip for high frequency use. The binding posts take banana plugs at the top, and grip wires through hole at the bottom, simultaneously, if desired.

**FWH** Net \$ .66  
The insulators of this terminal assembly are moulded R-39 and have serrated bosses that allow the thinnest panel to be gripped firmly, and yet have ample shoulders. Binding posts same as FWG above.

**FWJ** Net \$ .54  
This assembly uses the same insulators as the FWH above, but has jacks. When used with the FWF plug (below), there is no exposed metal when the plug is in place.

**FWF** Net \$ .70  
This moulded R-39 plug has two banana plugs on 3/4" centers and fits FWG, FWH or FWJ above. Leads may be brought out through the top or side.

**FWA**, Post Net, each \$ .20  
Brass Nickel Plated

**FWE**, Jack Net, each \$ .15  
Brass Nickel Plated

**FWC**, Insulator Net, per pair \$ .24  
R-39 Insulation.

**FWB**, Insulator Net, each \$ .15  
Polystyrene insulation.

**XS-6** Net, each \$ .12  
A low-loss steatite bushing for 1/2" holes. Passes 6-32 screw.

**XP-6** Net, box of ten \$ .51  
Same as above but polystyrene.

**TPB** Net, per dozen \$ .75  
A threaded polystyrene bushing with removable .093 conductor moulded in, 1/4" diam., 32 thread.

**XS-7**, (3/8" Hole) Net \$ .36

**XS-8**, (1/2" Hole) Net \$ .48

**XS-1**, (1" Hole) Net \$ .72

**XS-2**, (1 1/2" Hole) Net \$ .81  
Prices listed are per pair, including metal fittings and steatite insulators.

**XS-9** Net \$ .30  
Feed-through insulator. Hole size 13/64". Insulators are adjustable on silver-plated terminal stud for different partition thicknesses. Ceramic insulators are of high grade materials designed for high frequency equipment.

**AA-3** Net \$ .36  
A low-loss steatite spreader for 6 inch line spacing. (600 ohms impedance with No. 12 wire.)

**AA-5** Net \$ .30  
A low-loss steatite aircraft-type strain insulator.

**AA-6** Net \$ .54  
A general purpose strain insulator of low-loss steatite.

**GS-1**, 1/2" x 1 3/8" Net \$ .24

**GS-2**, 1/2" x 2 7/8" Net \$ .30

**GS-3**, 3/4" x 2 7/8" Net \$ .60

**GS-4**, 3/4" x 4 7/8" Net \$ .75

**GS-4A**, 3/4" x 6 7/8" Net \$ 1.05

Cylindrical low-loss steatite standoff insulators with nickel plated caps and bases.

**GSJ**, (not illustrated) Net \$ .10

A special nickel plated jack top threaded to fit the 3/4" diameter insulators GS-3, GS-4 & GS-4A.

**GS-10**, 3/4" high Net, box of ten \$ .90

**GS-10S** (not illustrated) but same as GS-10 except includes threaded stud in top end. Net, box of ten \$ 1.00

**GS-5**, 1 1/4" high Net \$ .30

**GS-6**, 2" high Net \$ .42

**GS-7**, 3" high Net \$ .75

These cone type standoff insulators are of low loss steatite. They are molded with a tapped hole in each end for mounting as follows:

**GS-5**, 8-32 tap 7/16" deep;  
**GS-6 & GS-7**, 10-24 tap 11/16" deep; **GS-10**, 6-32 tap 1/4" deep and **GS-10S** as noted above.

**GS-8**, with terminal Net \$ .54

**GS-9**, with jack Net \$ .75

These low-loss steatite standoff insulators are also useful as lead-through bushings.

**XS-3**, (2 3/4" hole) Net \$ 3.60

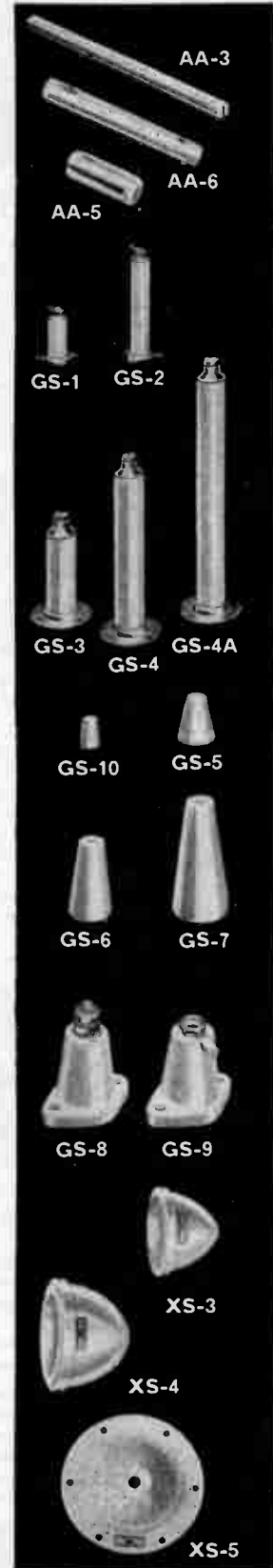
**XS-4**, (3 3/4" hole) Net \$ 4.35

Prices are per pair and include nickel plated spindles, lugs and hardware. These low-loss steatite bowls are ideal for lead-in purposes at high voltages.

**XS-5**, Without Fittings Net, each \$ 4.95

**XS-5F**, With Fittings Net, per pair \$ 10.20

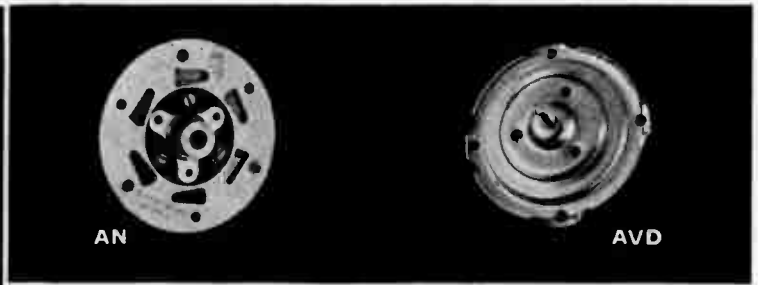
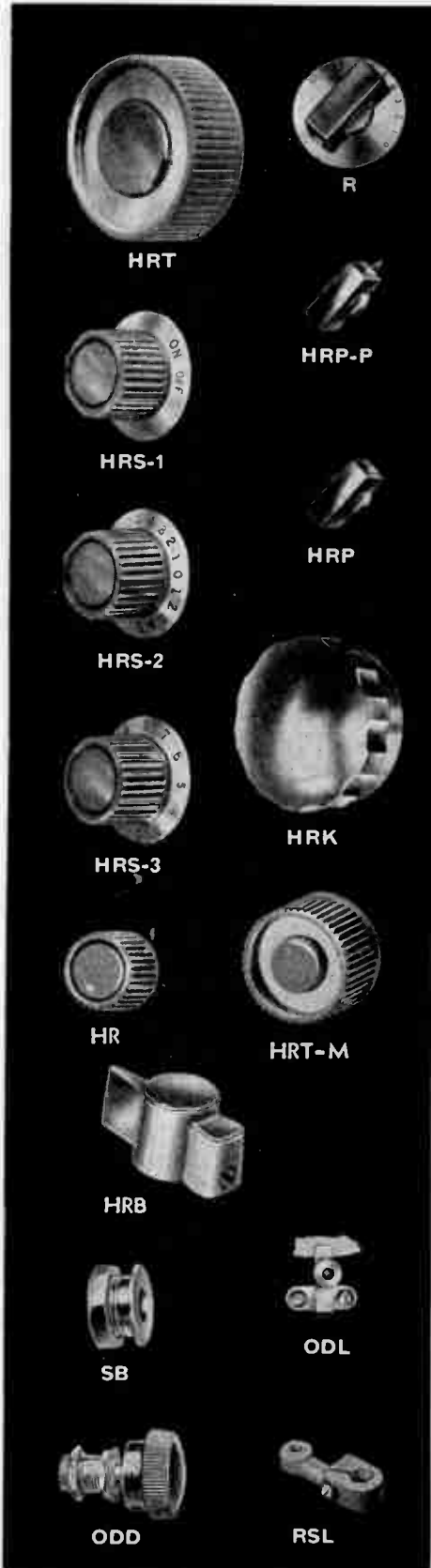
These big low-loss bowls have an extremely long leakage path and a 5 1/4" flange for bolting in place. Insulation steatite. Fittings include nickel plated brass spindles, lugs, nuts and washers.



NATIONAL COMPANY, INC.

MALDEN, MASS.

# POPULAR COMPONENTS



**HRT (gray or black) Net \$.75**

The HRT knob is 2 1/8" in dia. and fits 1/4" shafts. This knob has a chrome appearance circle and combined with the HRS series shown below gives the new look to panel layouts.

**AN Vernier Mechanism Net \$1.80**

A vernier mechanism ratio 5-1 has an insulated output shaft coupling for 1/4" shafts. Drive Shaft fits 3/16" knob.

**HRS (gray or black) Net \$.50**

The HRS series knobs are a popular easy to grip knob. They are molded of high quality plastic and have 1 3/8" dia. chrome plated bevel skirts fit 1/4" shafts available in the following scales:

- HRS-1 ON-OFF through 30°
- HRS-2 5-0-5 through 180°
- HRS-3 0-10 through 300°
- HRS-4 Single etched line

**AVD Vernier Mechanism Net \$1.65**

Similar to AN-Output shaft coupling is non insulated. For commercial uses many variations available. Write for further particulars.

**R Net \$.60**

This small dial has a 1 5/8" dia. scale calibrated 0-10 in 180° for increased reading with clockwise rotation. Black bakelite knob. Fits 1/4" shaft.

**HR (gray or black) Net \$.30**

An HRS type knob without the chrome plated skirt but with a white dot for spotting relative control settings.

**HRP-P Net \$.24**

Black bakelite knob 1/4" long and 1/2" wide. Equipped with pointer. Especially suitable for use on wafer and other rotary switches on laboratory equipment and the like. (Fits 1/4" shaft).

**HRB Net \$.45**

Ideal for bandswitching or other applications where a switch is turned to several index positions, the new HRB lever knob has just the right feel — a bright zinc alloy die casting.

**HRP Net \$.18**

The type HRP knob has no pointer but is otherwise the same as the knob above. Recommended for uncalibrated or hard-tuning controls. (Fits 1/4" shaft).

**SB Net \$.18**

A nickel plated brass bushing 1/2" dia. (Fits 1/4" shaft).

**HRK Net \$.57**

Black bakelite knob 2 3/8" dial — extremely rugged. This is the knob used on National type O and type L dials.

**ODL Net \$.33**

A locking device which clamps the rim of O, K, L and M Dials. Brass, nickel plated.

**HRT-M Net \$.50**

This is a smaller version of the HRT and was designed originally for use on the NC-57 Receiver — now available in choice of gray or black — is 1-7/16" in diameter.

**ODD Net \$.42**

Vernier pinch drive for O, L, or other plain dials.

**NATIONAL COMPANY, INC.,**

**MALDEN, MASS.**

# POPULAR COMPONENTS

**N Dial** Net \$4.50  
**AD Dial** Net \$3.00

The four-inch N and AD Dials have engine divided and die stamped scales respectively. The N Dial has a decimal vernier; the AD Dial employs a pointer. The planetary drive has a ratio of 5 to 1, and is contained within the body of the dial. 2, 3, 4, 5 or blank scale. Fits 1/4" shaft. Specify scale.

**B Dial** Net \$2.70  
 "Velvet Vernier" Dial, Type B, has a compact variable ratio 6 to 1 min., 20 to 1 max. drive that is smooth and trouble free. The case is black bakelite. 1 or 5 scale. 4" dia. Fits 1/4" shaft. Specify scale.

**BM Dial** Net \$2.10  
 The BM Dial is a smaller version of the B for use where space is limited. The drive ratio is fixed. Although small in size, the BM Dial has the same smooth action as the larger units. 1 or 5 scale. 3" dia. Fits 1/4" shaft. Specify scale.

**AM Dial** Net \$2.25  
 The original "Velvet Vernier" mechanism in a metal skirted dial 3" in dia. ratio 5 to 1. It is available with 2, 3, 4, 5 or 6 scale and fits 1/4" shaft.

**P Dial** Net \$1.00  
 The new P dial is the same as the AM except direct drive.  
 Type O, 3 1/2" dia., scale 2, with HRK knob, fits 1/4" shafts. Net \$1.00  
 Type L, same as O except 5" dia., scale 2 only. Net \$1.95  
 Type K, same as O except less knob, complete with ODD vernier drive, scale 2 only. Net \$1.50  
 Type M, same as K except 5" dia., scale 2 only. Net \$2.25

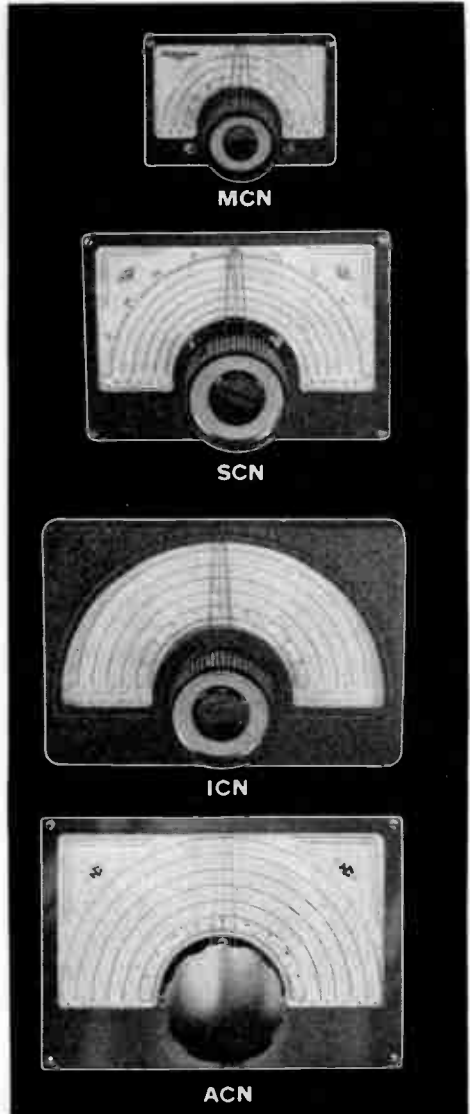
The dials at the right are for individual calibration: all four employ the noted 5:1 drive ratio Velvet Vernier mechanism and are of excellent quality.

**MCN Dial** Net \$2.70  
 The MCN dial has been scaled down to lend itself ideally to mobile installations and small converters and tuners. It may also be mounted on the standard 3 1/2" rack panel where such mounting may be desirable. The dial provides three calibrating scales and a 0-100 logging scale. On the rear side of the dial, the mechanism extends 1/4" below the dial frame. 2 3/4" H. x 3 7/8" W.

**SCN Dial** Net \$3.00  
 The SCN dial provides the same dial scales as the ACN dial but in a reduced size. It is used where economy of panel-mounting space is desirable and where a smaller dial would be out of proportion with the size of the panel. 4-7/16" H. x 6 1/4" W.

**ICN Dial** Net \$6.00  
 The ICN dial meets those hundreds of requests from amateurs the world over for an illuminated ACN dial. Two dial lights mounted on the top corners of the dial provide efficient and even illumination on all bands. The dial window has been blanked out in semi-circular shape to prevent shadow casting. Dial scales are the same as those used on the ACN dial. 5 1/8" H. x 7 1/4" W.

**ACN Dial** Net \$3.30  
 The ACN is the original of this type dial, a National design for the benefit of experimenters who "build their own" and desire direct calibration 5" H. x 7 1/4" W.



DIAL SCALES			
Scale	Divisions	Rotation	Direction of Condenser Rotation for Increase of dial reading
1	0-100-0	180°	Either
2	0-100	180°	Counter Clockwise
3	100-0	180°	Clockwise
4	150-0	270°	Clockwise
5	200-0	360°	Clockwise
6	0-150	270°	Counter Clockwise

**NATIONAL COMPANY, INC.,**

**MALDEN, MASS.**



**XLA**



**XLA-S**



**XLA-C**



**XCA**



**XMA**



**XOA-7 (Axial)**

**XOA-C-7**



**XOR-7 (Radial)**

**XOR-C-7**



**XOA-C-9**

**XLA** Net \$**.99**  
A low-loss socket for the 6F4 and 950 series acorn tubes for frequencies as high as 600 Mc. Conventional by-pass condensers may be compactly mounted between the contact terminals and the chassis. Low contact resistance, short and direct leads and low and constant inductance are features.

**XLA-S** Net \$**.36**  
An internal shield fitting the XLA socket and suitable for tubes such as the 956.

**XLA-C** Net \$**.36**  
This miniature by-pass condenser may be mounted inside the socket, directly below the contact. Capacities of 50 or 100 mmf. available.

**XCA** Net \$**.99**  
A low-loss steatite socket for acorn triodes. Pin grips are designed to accept tube prongs with minimum strain but exert maximum pressure when seated.

**XMA** Net \$**1.32**  
For pentode acorn tubes, this socket has built-in by-pass condensers. The base is a copper plate.

**XOA-7** (mica-filled bakelite) Net \$**.50**

**XOA-C-7** (ceramic) Net \$**.50**

**XOR-7** (mica-filled bakelite) Net \$**.50**

**XOR-C-7** (ceramic) Net \$**.50**  
These high quality sockets for the 7 pin miniature tubes have silver plated beryllium copper contacts that correctly grip the tube pins close to the base of the tube to provide the short leads and low inductance so necessary in ultra-high frequency design.

A novel feature of these new sockets is the interchangeability of the contacts, which are easily removed for replacement. This permits the use of a mixture of axial (XOA) and radial (XOR) type contacts in the same socket to obtain the shortest possible leads, or minimum size in tight places. The above sockets all mount with two 4-40 screws on .875" centers. Chassis cutout should be 3/4" dia. Shields for use with these sockets are on page 21.

**XOA-C-9** (ceramic) Net \$**.57**

**XOR-C-9** (ceramic) Net \$**.57**  
These sockets are for the new 9-pin miniature tubes. The XOR-C-9 (not illustrated) has radial contacts. Both have all of the features described above for the 7-pin types

and they also mount with 4-40 screws. Mounting center dimension is 1 1/8", the chassis cutout should be 13/16" dia.

**CIR SERIES SOCKETS**

**Any Type** Net \$**.30**  
Always a popular National component, type CIR Sockets feature low-loss steatite insulation, a contact that grips the tube prong for its entire length, and a metal ring for six position mounting.

XC-4, 5, 6, 7S, 7L and CIR-4, 5, 6, 7S and 7L all have 1-27/32" mounting centers. CIR-8E has slotted holes in plate but will mount on 1-27/32" center. CIR-8 and XC-8 have 1 1/2" mounting centers.

**XC SERIES SOCKETS**

**XC-4** ..... Net \$**.36**  
**XC-5** ..... Net \$**.39**  
**XC-6** ..... Net \$**.42**  
**XC-7S** ..... Net \$**.45**  
**XC-7L** ..... Net \$**.45**  
**XC-8** ..... Net \$**.39**

National wafer sockets have exceptionally good contacts with high current capacity together with low loss steatite insulation. All types have a locating groove to make tube insertion easy. The XC-6 is ideal for use with AR-17 coils shown on page 24.

**HX-29** Net \$**.81**  
A low-loss wafer socket with steatite insulation for the popular 829 and 832 tubes.

**JX-51** Net \$**.81**  
A low loss steatite wafer socket for the 813 and other tubes having the Giant 7-pin base. (not illustrated)

**XM-10** Net \$**.90**  
A heavy duty metal shell socket for tubes having the XU 4-pin base.

**XM-50** Net \$**1.20**  
(see XM-10 for style)  
A heavy duty metal shell socket for tubes having the Jumbo 4-pin base ("fifty watters").

**HX-100** Net \$**.99**  
A low loss wafer socket suitable for the type 4-125-A, 4-250-A and other tubes using the Giant 5-pin base. Shield grounding clips are supplied which mount on the chassis with the socket mounting screws to ground the tube shield at three points. Air holes are provided in the socket to permit forced air cooling.

**HX-100S** Net \$**1.65**  
Same as above with standoff insulators as illustrated.



**CIR-5**



**CIR-8**



**CIR-8E**



**XC-5**



**XC-8**



**HX-29**

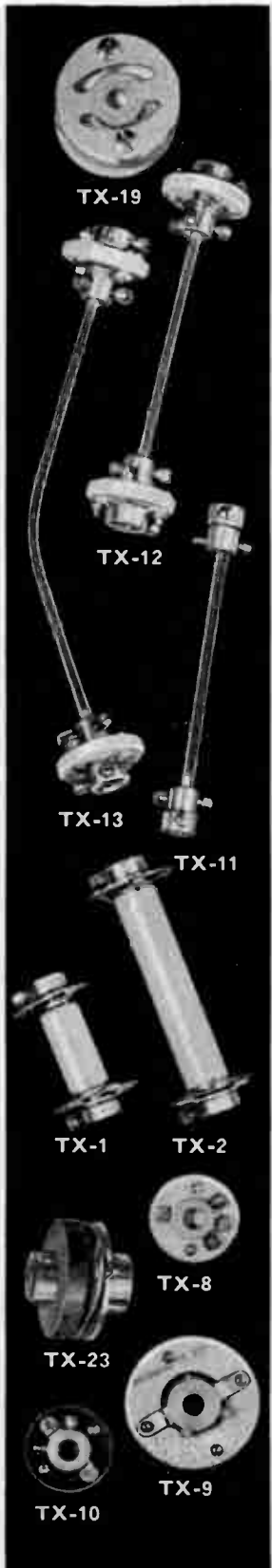


**XM-10**



**HX-100S**

# POPULAR COMPONENTS



## SHAFT COUPLINGS

**TX-19** **Net \$1.25**  
A steatite insulated flexible coupling for 1/4" shafts. Conservatively rated at 5000 volts peak. Diameter 1 3/4", length 1". Length and flashover voltage can be increased by turning collars outboard.

**TX-11** **Net \$4.42**  
The flexible shaft of this coupling connects shafts at angles up to 90 degrees, and eliminates misalignment problems. Fits 1/4" shafts. Length 4 1/4".

**TX-12**, Length 4 3/8" **Net \$9.00**  
**TX-13**, Length 7 1/8" **Net \$1.05**

These couplings use flexible shafting like the TX-11 above, but are also provided with steatite insulators at each end.

**TX-1**, Leakage path 1" **Net \$6.65**  
**TX-2**, Leakage path 2 1/2" **Net \$7.75**  
Flexible couplings with glazed steatite insulation which fit 1/4" shafts.

**TX-23** **Net \$1.35**  
A deluxe insulated flexible coupling designed for coupling 1/4" shafts. Will handle a maximum radial misalignment of 1/16" also 2 degrees maximum angular misalignment.

**TX-24** **Net \$1.35**  
Same as TX-23, shaft size 5/32".

**TX-25** **Net \$1.35**  
Same as TX-23, non-insulated.

**TX-8** **Net \$6.60**  
A non-flexible rigid coupling with steatite insulation. 1" diam. Fits 1/4" shaft.

**TX-10** **Net \$4.40**  
A very compact insulated coupling free from backlash. Insulation is canvas bakelite. 1-1/16" diam. Fits 1/4" shaft.

**TX-10F** (Not illustrated) **Net \$4.45**  
A new version of the TX-10 which employs thin canvas bakelite strips for flexibility.

**TX-22** (Not illustrated) **Net \$4.40**  
A non-insulated coupling identical to TX-10 except of all metal construction. Makes good electrical connection between coupled shafts.

**HEAT RADIATING CAPS.** Designed to government specifications. Aluminum contact fingers are integral with radiating fins. Tension on fingers maintained by an encircling steel spring. 6/32" tapped center hole for attaching grid ribbon or other lead. Crimped beryllium copper, silver-plated grid ribbon 3 1/4" long, supplied with each cap. Special lengths can be supplied to manufacturers in quantities.

Type No.	Price	Hole Size For Lead or Cap	Heat Radiating Connectors To Fit the Following Tubes
HC-26	36¢	.052	3C24-24-24G-25T-27
HC-27	36¢	.062	UH50-HK24-304B-892B-832A-834
HC-28	36¢	.072	35T-35TG-75TH-HK254-HK257B-484-8001
HC-29	50¢	.125	HK57-152TH
HC-30	50¢	.375	4-125A-150TH-2-150D-25OR-250TH-250TL-420A-802-803-804-807-808 Grid-814-815-828
HC-31	60¢	.125	304TH-304TL
HC-32	60¢	.570	ZB60-HF60-HF100-111H-211H-203H-HF175-HF300 Grid-100R-HK357C-450TH-454-750TH-805-806-808-809-810-811-812-813-828-833-866-854-1500T-2000T-1054-5331-5332-8000-8003-8005
HC-33	80¢	.810	WL468-WL463-WL460-HF200-HF201-HF300

**TX-9** **Net \$7.75**  
This small insulated flexible coupling provides high electrical efficiency when used to isolate circuits. Insulation is steatite. 1 3/8" diam. Fits 1/4" shaft.

**TX-21** (Not illustrated) **Net \$4.40**  
Similar to TX-10 except 13/16" long and couples 1/4" shaft to 5/32" shaft.

## SAFETY GRID AND PLATE CAPS

**SPP-9** **Net \$2.21**  
Ceramic insulation. Fits 9/16" diameter.

**SPP-3** **Net \$2.21**  
Ceramic insulation. Fits 3/4" diameter. National Safety Grid and Plate Caps have a ceramic body which offers protection against accidental contact with high voltage caps on tubes.

## GRID AND PLATE GRIPS

**Type 12**, for 9/16" Caps **Net \$3.06**  
**Type 24**, for 3/8" Caps **Net \$3.03**  
**Type 8**, for 1/4" Caps **Net \$3.03**

National Grid and Plate Grips provide a secure and positive contact with the tube cap and yet are released easily by a slight pressure on the ear.

## RIGHT ANGLE DRIVES

**ACD-1** ..... **Net \$3.75**  
**ACD-2** ..... **Net \$3.90**  
**ACD-3** ..... **Net \$3.90**

These sturdy drives were developed for use with the new National AMT condensers (see page 26). They are as compact as the torque requirements will allow and have nickel plated cast frames and bronze gears which operate smoothly without chatter or binding. The ACD-1 has 32 pitch gears and a 1/4" dia. dial shaft and drives 1/4" shafts. ACD-2 has 24 pitch gears (for heavier service) and 1/4" dia. shaft driving 1/4" shafts. ACD-3 is the same as ACD-2 except that it drives 3/8" diameter shafts.



NATIONAL COMPANY, INC.,

MALDEN, MASS.

# POPULAR COMPONENTS



- R-100 .....Net \$ .35
- R-100U .....Net \$ .42
- R-100S .....Net \$ .42
- R-100ST .....Net \$ .40

These RF chokes are identical electrically, but differ in mounting provisions. The R-100 employs pigtail leads; the R-100U has pigtail leads and a removable stand-off insulator; the R-100S has cotter-pin lug terminals and a non-removable stand-off insulator; the R-100ST has a 6-32 threaded stud at each end. These chokes are available in 2.5, 5 and 10 millihenry sizes and are rated at 125 milliamperes.

**R-33 Net \$ .35**

The R-33 series chokes are 2-section RF chokes available in 10, 50, 100 and 750 microhenry sizes. Also available in this series is a single layer solenoid choke of 1 microhenry inductance. All are rated at 33 milliamperes. The chokes are wound on a  $\frac{5}{8}$ " long form and range in diameter up to  $\frac{5}{16}$ " maximum.

**R-50 Net \$ .35**  
**R-50-1 Net \$ .53**

The R-50 series chokes are 3 and 4-section RF chokes and available in 0.5, 1, 2.5, and 10 millihenry sizes. They are rated at 50 milliamperes. The chokes are wound on a 1" long form and have a maximum diameter of  $\frac{15}{32}$ ". The 10 millihenry R-50-1 choke is wound on an iron core.

**R-33G Net \$3.60**

The R-33G choke is a 2-section 750 microhenry RF choke hermetically sealed in glass with a current rating of 33 milliamperes. The choke body is 1" long by  $\frac{5}{8}$ " diameter.

**R-60 Net \$ .35**

The R-60 choke is a high current RF choke (500 milliamperes) available in 2 and 4 microhenry sizes. The choke is  $\frac{1}{8}$ " long by  $\frac{5}{16}$ " diameter.

- R-300 .....Net \$ .38
- R-300U .....Net \$ .42
- R-300S .....Net \$ .42
- R-300ST .....Net \$ .40

These RF chokes are similar in size to R-100 series but have higher current capacity. The R-300U is provided with a removable stand-off insulator at one end. The R-300S has a non-removable stand-off insulator and cotter-pin lug terminals. The R-300ST has a 6-32 threaded stud at each end. Inductance values of 0.5, 1.0, 2.5 and 5.0 millihenries are available with a current rating of 300 milliamperes. R-300, R-300U, R-300S and R-300ST are identical electrically.

**R-152 Net \$1.75**

For use in the range between 2 and 4 Mc. Ideal for high power transmitter stages operated in the 80 meter amateur band. Inductance 4 m.h., DC resistance 10 ohms, DC current 600 ma. Coils honeycomb wound on steatite core.

**R-154 Net \$1.75**  
**R-154U Net \$1.40**

For the 20, 40 and 80 meter bands, Inductance 1 m.h., DC resistance 6 ohms, DC current 600 ma. Coils honeycomb wound on steatite core. The R-154U does not have the third mounting foot and the small insulator, but is otherwise the same as R-154. See illustration.

**R-175 Net \$2.25**

The R-175 Choke is suitable for parallel-feed as well as series-feed in transmitters with plate supply up to 3000 volts modulated or 4000 volts unmodulated. Unlike conventional chokes, the reactance of the R-175 is high throughout the 10 and 20 meter bands as well as the 40 and 80 meter bands. Inductance 225  $\mu$ h, distributed capacity 0.6 mmf., DC resistance 6 ohms, DC current 800 ma., voltage breakdown to base 12,500 volts.

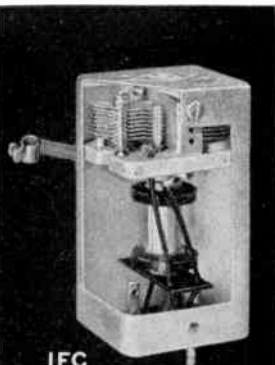


**NATIONAL COMPANY, INC.,**

**MALDEN, MASS.**

# POPULAR COMPONENTS

## I. F. TRANSFORMERS



IFC  
IFCO



IFL  
IFM  
IFN  
IFO



OSR



AR-2

IFC, Transformer, Net \$4.25  
IFCO, Oscillator, Net \$4.25  
Litz coils wound on a polystyrene form and ceramic insulated air-dielectric trimming condensers make these transformers inherently stable and exceptionally retentive of tuning. The 4 1/2" x 2 3/8" x 2" shield can has two 6-32 spade bolts for mounting. Available for either 175 Kc or 450-550 Kc. Specify frequency.  
IFL FM Discriminator

Net \$6.90

IFM IF Transformer Net \$6.45

IFN IF Transformer Net \$6.45

IFO FM Ratio Discriminator

Net \$6.98

IFL, IFM, IFN and IFO transformers operate at 10.7 Mc. and are designed for use in FM Superheterodyne receivers. Coils are precision wound on grooved polystyrene forms and tuning is accomplished by movable iron cores. Bandwidth is not affected by tuning slug position. The transformer cans are 1 3/8" square and stand 3/8" above the chassis. Two 6-32 spade bolts are provided for mounting.

The IFL transformer is a 10.7 Mc. FM discriminator transformer suitable for use in conventional FM receiver discriminator circuit and is linear over a band of ±100 Kc.

The IFM transformer is a 10.7 Mc. IF transformer with a 150 Kc. bandwidth at 1.5 db attenuation. Approximate stage gain of 30 is obtained with IFM Transformer and 6SG7 tube.

The IFN transformer is a 10.7 Mc. IF transformer with a 100 Kc. pass band at 1.5 db attenuation. Approximate stage gain of 30 is obtained with IFN Transformer and 6SG7 tube.

The IFO transformer is a 10.7 Mc. FM discriminator transformer of the ratio type and is linear over a band of ±100 Kc.

IFJ, with variable coupling  
Net \$8.25

IFK, with fixed coupling  
Net \$7.25

15 Mc. IF transformers suitable for ultra high frequency superheterodynes. They are made in two models with and without variable coupling. Approximate stage gain of 10 is obtained with IFJ or IFK Transformer and 6AB7 tube.

SA:4842 Net \$4.50

A 456 kc. discriminator transformer for narrow band frequency modulation. This unit is the nucleus of the NFM adapter described by Harrington and Bartell in November 1947 QST. Two slug-tuned secondaries are employed and discrimination is accomplished by resonating one at approximately 10 kc. above, the other at approximately 10 kc. below the center frequency of the i.f. channel.

CD-1, 1/4 pint can Net \$9.95  
Liquid Polystyrene Cement — is ideal for windings as it will not spoil the properties of the best coil form.

## COILS AND COIL FORMS

AR-2 High Frequency Coil  
Net \$1.70

AR-5 High Frequency Coil  
Net \$1.46

The AR-2 and AR-5 coils are high Q permeability tuned RF coils on low loss mica-filled bakelite forms. The AR-2 coil tunes from 75 Mc. to 220 Mc. with capacities from 100 to 10 mmfd. The AR-5 coil tunes from 37 Mc. to 110 Mc. with capacities from 100 to 10 mmfd. The inductive windings supplied may be replaced by other windings as desired to modify the tuning range.

XR-50 Net \$9.90

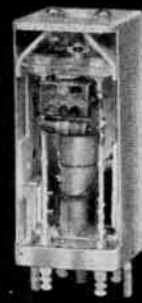
These mica-filled bakelite coil forms may be wound as desired to provide a permeability tuned coil. The form winding length is 11/16" and the form winding diameter is 1/2 inch. The iron slug is 3/8" dia. by 1/2" long.

OSR Net \$1.80

A shielded oscillator coil which tunes to 100 kc. with .00041 mfd. Two separate inductances, closely coupled. Excellent for interruption-frequency oscillator in super-regenerative receivers.

Symbol	Outside Diameter	Length	Net
PRC-1	3/8"	3/8"	.15
PRC-2	3/8"	1/2"	.15
PRC-3	3/8"	3/4"	.15
PRD-1	1/2"	1/2"	.15
PRD-2	1/2"	1"	.15
PRE-1	9/16"	3/4"	.18
PRE-2	9/16"	1"	.18
PRE-3	9/16"	2"	.24
PRF-1	3/4"	3/4"	.24
PRF-2	3/4"	1 1/4"	.30

These small coil forms are of molded polystyrene, open at one end and closed at the other except for a hole which permits mounting by a single 6-32 screw. A size for every application.



IFJ  
IFK



SA-4842



CD-1

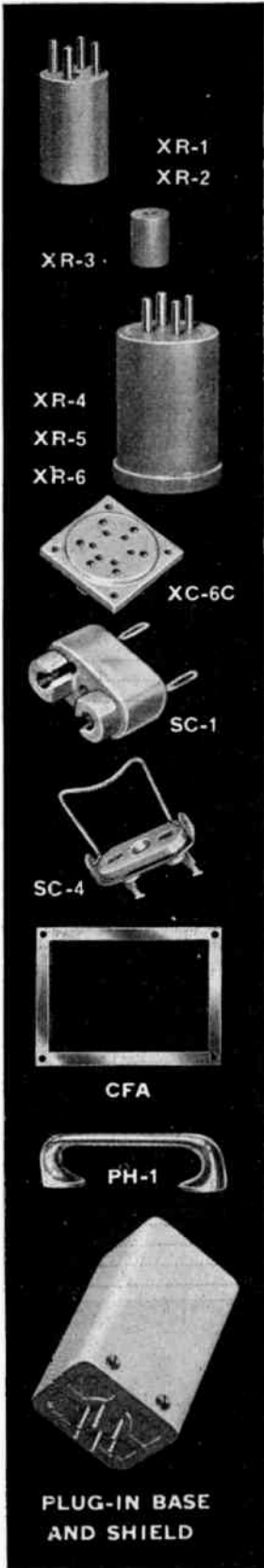


PRC  
PRD  
PRE  
PRF

NATIONAL COMPANY, INC.,

MALDEN, MASS.

# POPULAR COMPONENTS



Coil Forms molded of R-39 mica-filled bakelite permitting them to be grooved and drilled. Coil Form diameter 1", length 1 1/2".

**XR-1, Four Prong Net \$ 3.35**

**XR-2, Without Prongs Net .525**

**XR-3, molded of R-39 Diameter 9/16", length 3/4" without prongs. Net \$ 2.80**

**XR-4, Four Prong Net \$ 5.1**

**XR-5, Five Prong Net \$ 5.1**

**XR-6, Six Prong Net \$ 6.0**  
Molded of R-39 permitting them to be grooved and drilled. Coil Form Diameter 1 1/2", length 2 1/4". A special socket is required for the XR-6.  
**National type XC-6C Net \$ 5.1**

**SC, Crystal Sockets Net \$ 3.32**  
The SC-1, SC-2, and SC-3 are crystal mounting sockets for crystal holders with mounting pins spaced 0.5000", 0.486", and .750" respectively and pin diameters of 1/8" and 3/32" and 1/8" respectively, steatite insulation. Single 4-36 or 4-40 screw mounting for SC-1 and SC-2; single 6-32 screw mounting for SC-3.

**SC-4 Ceramic crystal socket with clamp. Pin spacing .500". Pin dia. 1/32". Net \$ 3.9**

**CFA Net \$ 3.35**  
The National chart frame is supplied with a celluloid sheet to cover the chart size 2 1/4" x 3 1/4" with sides 1/4" wide. Durable finish.

**PH-1 An attractive and rugged pull handle of cast zinc alloy chrome plated, with 10-32 Tapped Holes on 3/4" mounting centers. Net \$ 4.5**

**PH-2 Same as PH-1 but with black or gray finish. Net \$ 2.5**  
The plug in base and shield includes the low loss R-39 base which is ideal for mounting condensers and coils when it is desirable to have them shielded and easily removable. Shield is 2" x 2 3/8" x 4 1/2".

**PB-10-5 Net \$ 1.77**  
5 Prong base and shield

**PB-10-6 Net \$ 1.77**  
6 Prong base and shield

**PB-10-A-5 Net \$ 3.99**  
5 Prong base only

**PB-10-A-6 Net \$ 3.99**  
6 Prong base only

**RZ Coil Shield Net \$ 3.35**  
1 7/8" square x 4" high.  
**RS Coil Shield Net \$ 3.35**  
1-7/16" x 1 3/8" x 3 1/2" high.

**RO Coil Shield Net \$ 3.35**  
2" x 2 1/2" x 4 1/4" high. National Coil Shields are formed from a single piece of pure aluminum. They are mechanically strong and have ample thickness to mount small parts on the walls, and include spade belts, for chassis mounting.

**T-78 Tube Shield Net \$ 2.7**  
National Tube Shield type T-78 is a three-piece pure aluminum shield suitable for shielding glass tubes with ST-12 bulb, such as the 6C6 and 6D6 tubes.

**JS-1 JackShield Net \$ 3.30**  
For shielding small standard jacks mounted behind a panel, or on the ends of extension coils. Indispensable for reducing hum pickup.

**XOS Tube Shields Net \$ 4.48**  
The XOS tube shield is a two-piece shield for the miniature Button 7 and 9 pin base tubes. The shield is available in three sizes corresponding to the tube body heights XOS-1 for 1-5/16", XOS-2 for 1 1/2", XOS-3 for 2"

The shield contains a spring which centers tube in shield and holds tube and shield firmly in place.

**SHIELDS 7-pin SOCKETS**  
XOS-1 fit 1-5/16" tube body \$ 4.48  
XOS-2 fit 1 1/2" tube body .48  
XOS-3 fit 2" tube body .48

**SHIELDS 9-pin SOCKETS**  
XOS-4 fit 1-5/16" body .51  
XOS-5 fit 1 1/2" tube body .51  
XOS-6 fit 2" tube body .51

**FXT Fixed tuned exciter tank similar in general construction to National I.F. transformers, this unit has two 25 mmf., 2000 volt air condensers and an unwound XR-2 Coil form.**

**FXT (Without plug-in base) Net \$ 3.45**

**FXTB-5 (With 5 prong base) Net \$ 3.90**

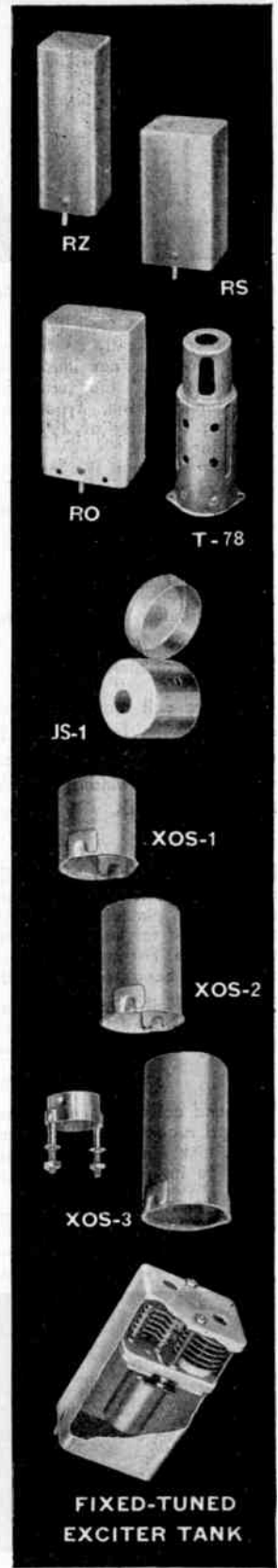
**FXTB-6 (With 6 prong base) Net \$ 3.90**

**Paint (not illustrated)**

**CP-1, dark gray Net \$ 4.40**

**CP-2, black Net \$ 4.40**  
A high quality air-drying paint that may be applied with a brush.

**CP-3, light gray, matches newest National receivers—for spraying and baking. Net \$ 5.0**

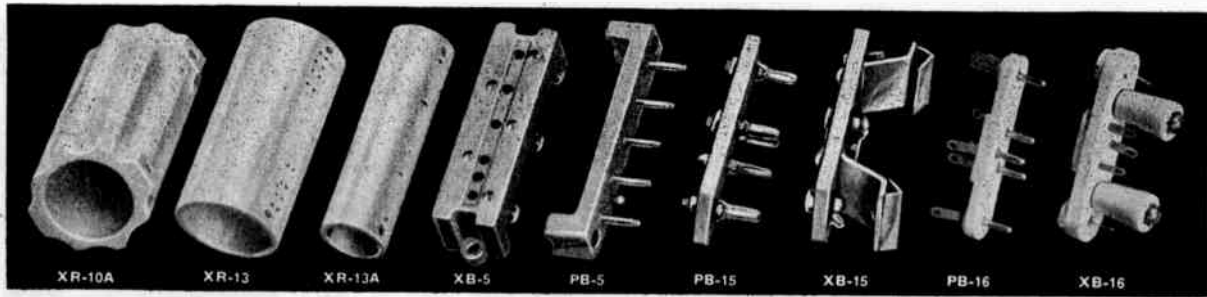


NATIONAL COMPANY, INC.,

MALDEN, MASS.



# POPULAR COMPONENTS



## TRANSMITTER COIL FORMS

The Transmitter Coil Forms and Mounting are designed as a group, and mount conveniently on the bars of a TMA condenser. The larger coil form, Type XR-14A, (not illustrated) has a winding diameter of 5", a winding length of 3 3/4" (30 turns total) and is intended for the 80 meter band. The smaller form, Type XR-10A, has a winding length of 3 3/4" and a winding diameter of 2 1/2" (26 turns total). It is intended for the 20 and 40 meter bands.

Either coil form fits the PB-15 plug. For higher frequencies, the plug may be used with a self-supporting coil of copper tubing. The XB-15 Socket may be mounted on breadboards or chassis, as well as on the TMA Condenser.

## BUFFER COIL FORMS

National Buffer Coil Forms are designed to mount directly on the tie bars of a TMC condenser using the PB-5 Plug and XB-5 Socket. Plug and Socket are of molded R-39.

The two coil forms are of steatite, left unglazed to provide a tooth for coil dope. The larger form, Type XR-13, is 1 3/4" in diameter and has a winding length of 2 3/4". The smaller form, Type XR-13A, is 1" in diameter and provides a winding length of 2 3/4". Both forms have holes for mounting and for leads.

## EXCITER COILS

There is a National exciter coil for every application. AR-15 coils are mounted on 5 pin bases which fit any standard 5 contact tube socket. AR-16 coils are mounted on the well known National PB-16 plug which fits the National XB-16 socket. The AR-17 coils have 6 pin bases which fit standard 6 contact tube sockets and the link windings of this series have center taps which may be grounded for harmonic reduction. All center link models are center tapped for use in balanced circuits. Insulation polystyrene and steatite. For use where plate power input does not exceed 50 watts. Available with fixed or swinging end or center links for all amateur bands, 6 through 80 meters.

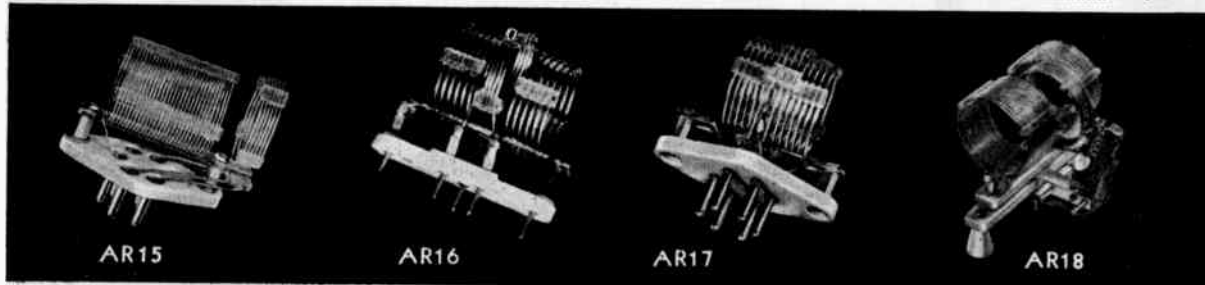
The XR-16 Coil Form (not illustrated) fits the PB-16 Plug-in Base; it has a winding length of 1 3/4", diameter 1 1/4"

AR-15, AR-16, AR-17 Coil, any type .....	Net \$1.25	PB-16 Plug-in Base .....	Net \$.45
XR-16 Coil Form .....	Net \$.42	XB-16 Socket for PB-16 .....	Net \$.45

## 500 WATT COILS

Air-wound coils designed to mount on the split stator models of National AMT condensers. The AR18-C coils have fixed center links and require the XB18-C socket. The AR18-S coils are designed to accommodate the swinging link furnished with the XB18-S socket. Link winding of the XB18-S has a center tap which may be grounded for harmonic reduction. Plugs and jacks are silver plated to insure low contact resistance. Insulation, steatite. The sockets (not illustrated) are 7/4" in length.

AR-18—6C .....	\$3.25	AR-18—80C .....	4.50	AR-18—40S .....	3.95
AR-18—10C .....	3.50	AR-18—6S .....	2.96	AR-18—80S .....	4.20
AR-18—20C .....	3.75	AR-18—10S .....	3.20	XB—18S .....	4.00
AR-18—40C .....	4.25	AR-18—20S .....	3.45	XB—18C .....	1.50



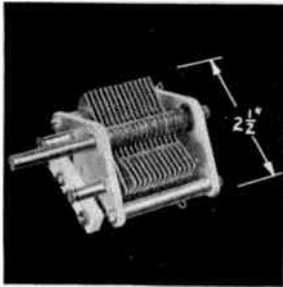
NATIONAL COMPANY, INC.,

MALDEN, MASS.

# POPULAR COMPONENTS

## TYPE TMS TRANSMITTING CONDENSERS

This is a condenser designed for transmitter use in low power stages. It is compact, rigid, and dependable. Provision has been made for mounting either on the panel, on the chassis, or on two stand-off insulators. Insulation is steatite. Voltage ratings listed are conservative.

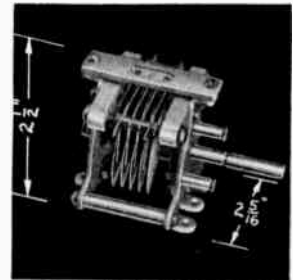


Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
100 Mmf.	9.5	3"	.026"	1000v.	9	TMS-100	\$2.60
150	11	3"	.026"	1000v.	14	TMS-150	2.80
250	13.5	3"	.026"	1000v.	22	TMS-250	3.30
300	15	3"	.026"	1000v.	27	TMS-300	3.80
35	8	3"	.065"	2000v.	7	TMSA-35	3.90
50	11	3"	.065"	2000v.	11	TMSA-50	4.40
<b>DOUBLE STATOR MODELS</b>							
50-50 Mmf.	6-6	3"	.026"	1000v.	5-5	TMS-50D	\$3.00
100-100	7-7	3"	.026"	1000v.	9-9	TMS-100D	3.20
50-50	10.5-10.5	3"	.065"	2000v.	11-11	TMSA-50D	4.40

## TYPE TMK TRANSMITTING CONDENSERS

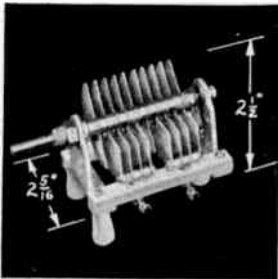
This is a new condenser for exciters and low power transmitters. Special provision has been made for mounting AR-16 coils in a swivel plug-in mount on either the top or rear of the condenser. For stand-off or panel mounting-steatite insulation.

Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
35 Mmf.	7.5	2 1/8"	.047"	1500v.	7	TMK-35	\$3.45
50	8	2 3/8"	.047"	1500v.	9	TMK-50	3.55
75	9	2 1/2"	.047"	1500v.	13	TMK-75	3.80
100	10	3"	.047"	1500v.	17	TMK-100	3.95
150	10.5	3 1/8"	.047"	1500v.	25	TMK-150	4.65
200	11	4 1/8"	.047"	1500v.	33	TMK-200	5.25
250	11.5	4 3/8"	.047"	1500v.	41	TMK-250	5.75
<b>DOUBLE STATOR MODELS</b>							
35-35 Mmf.	7.5-7.5	3"	.047"	1500v.	7-7	TMK-35D	\$3.80
50-50	8-8	3 1/8"	.047"	1500v.	9-9	TMK-50D	3.95
100-100	10-10	4 1/8"	.047"	1500v.	17-17	TMK-100D	5.25
Swivel Mounting Hardware for AR 16 Coils						SMH	\$ .10



## TYPE TMH TRANSMITTING CONDENSERS

A condenser that features very compact construction. Excellent power factor, and aluminum plates .0400" thick with polished edges. It mounts on the panel or on removable stand-off insulators. Steatite insulators have long leakage path. Stand-offs included in listed price.

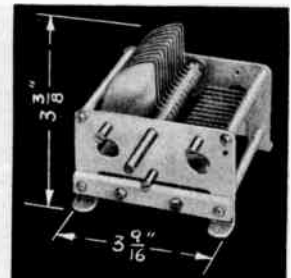


Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf.	9	3 3/4"	.085"	3500v.	15	TMH-50	\$3.95
75	11	3 3/4"	.085"	3500v.	19	TMH-75	4.15
100	12.5	5 1/8"	.085"	3500v.	25	TMH-100	4.35
150	18	6 1/2"	.085"	3500v.	37	TMH-150	4.95
35	11	5 3/8"	.180"	6500v.	17	TMH-35A	4.25
<b>DOUBLE STATOR MODELS</b>							
35-35 Mmf.	6-6	3 3/4"	.085"	3500v.	9-9	TMH-35D	\$4.15
50-50	8-8	5 1/8"	.085"	3500v.	13-13	TMH-50D	4.35
75-75	11-11	6 1/2"	.085"	3500v.	19-19	TMH-75D	4.95

## TYPE TMC TRANSMITTING CONDENSERS

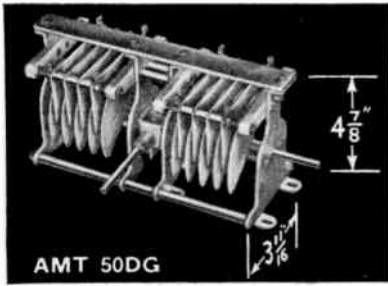
A condenser designed for use in the power stages of transmitters where peak voltages do not exceed 3000 volts. The frame is extremely rigid and arranged for mounting on panel, chassis or stand-off insulators. The plates are aluminum with buffed edges. Insulation is steatite. The stator in the split stator models is supported at both ends.

Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf.	10	3"	.077"	3000v.	7	TMC-50	\$3.60
100	13	3 1/2"	.077"	3000v.	13	TMC-100	4.25
150	17	4 1/8"	.077"	3000v.	21	TMC-150	5.25
250	23	6 1/8"	.077"	3000v.	32	TMC-250	5.70
300	25	6 3/4"	.077"	3000v.	39	TMC-300	6.10
<b>DOUBLE STATOR MODELS</b>							
50-50 Mmf.	9-9	4 5/8"	.077"	3000v.	7-7	TMC-50D	\$4.35
100-100	11-11	6 3/8"	.077"	3000v.	13-13	TMC-100D	5.95
200-200	18.5-18.5	9 1/4"	.077"	3000v.	25-25	TMC-200D	7.25



**NATIONAL COMPANY, INC.,**

**MALDEN, MASS.**

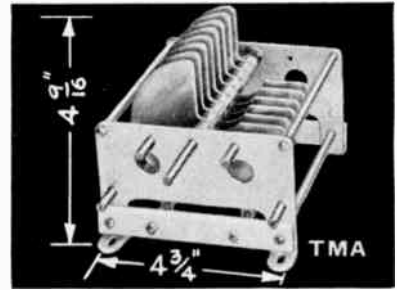


**TYPE AMT**

A larger and sturdier model of the TMK condenser. The frame is extremely rigid, with mounting feet a part of the end plates. Heavy steatite insulation.

The solid aluminum tie bar across the top of the condenser acts as a mounting for AR-18 series coils in the double stator models.

The double stator models are available in either standard end drive (D series) or center-drive (DG series) with 1/4" dia. shaft extension.



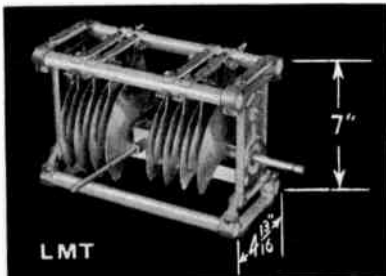
**TYPE TMA**

This is a larger model of the popular TMC. The frame is extremely rigid and arranged for mounting on panel, chassis or stand-off insulators. The plates are of heavy aluminum with rounded and buffed edges. Insulation is steatite located outside of the concentrated field.

Maximum Capacity	Minimum Capacity	Length	Air Gap	Peak Voltage	No. of Plates	Catalog Symbol	Net
<b>SINGLE STATOR MODELS</b>							
50 Mmf. 100	13	4 3/8"	.177"	6000 v.	9	AMT-50	\$ 5.20
	20	6 3/4"	.177"	6000 v.	17	AMT-100	6.10
300	19.5	4 9/16"	.077"	3000 v.	23	TMA-300	7.60
50	15	4 9/16"	.171"	6000 v.	7	TMA-50A	4.95
100	19.5	6 3/8"	.171"	6000 v.	15	TMA-100A	5.85
150	22.5	6 3/8"	.171"	6000 v.	21	TMA-150A	6.45
230	33	9 1/8"	.171"	6000 v.	33	TMA-230A	7.95
100	30	9 1/8"	.265"	9000 v.	23	TMA-100B	8.50
150	40.5	12 1/2"	.265"	9000 v.	33	TMA-150B	9.95
50	21	7 1/8"	.359"	19,000 v.	13	TMA-50C	5.55
100	37.5	12 1/8"	.359"	19,000 v.	25	TMA-100C	8.95
75	25	18 1/16"	.719"	20,000 v.	17	TML-75E	18.35
150	60	18 1/16"	.469"	15,000 v.	27	TML-150D	18.50
100	45	13 3/8"	.469"	15,000 v.	19	TML-100D	16.60
50	22	8 5/8"	.469"	15,000 v.	9	TML-50D	11.50
245	54	18 1/8"	.344"	10,000 v.	35	TML-245B	20.15
150	45	13 3/8"	.344"	10,000 v.	21	TML-150B	18.35
100	32	10 1/8"	.344"	10,000 v.	15	TML-100B	17.55
75	23.5	8 5/8"	.344"	10,000 v.	11	TML-75B	12.80
500	55	18 1/16"	.219"	7,500 v.	49	TML-500A	24.60
350	45	13 3/8"	.219"	7,500 v.	33	TML-350A	19.65
250	35	10 1/8"	.219"	7,500 v.	25	TML-250A	18.35
<b>DOUBLE STATOR MODELS D—End drive DG—Center drive</b>							
50-50	13-13	9 3/8"	.177"	6000 v.	18	AMT-50D	7.00
100-100	20-20	13 3/8"	.177"	6000 v.	34	AMT-100D	9.00
50-50	13-13	9 3/8"	.177"	6000 v.	18	AMT-50DG	10.75
100-100	20-20	13 3/8"	.177"	6000 v.	34	AMT-100DG	12.75
200-200	15-15	6 7/8"	.077"	3000 v.	16-16	TMA-200D	9.40
180-180	10-10	12 3/8"	.140"	4000 v.	24-24	TMA-180D	12.90
50-50	12.5-12.5	6 7/8"	.155"	6000 v.	8-8	TMA-50DA	6.75
100-100	17-17	9 5/8"	.155"	6000 v.	14-14	TMA-100DA	8.75
60-60	19.5-19.5	12 1/8"	.249"	9000 v.	15-15	TMA-60DB	8.95
40-40	18-18	12 7/8"	.343"	12,000 v.	11-11	TMA-40DC	8.50
30-30	12-12	18 1/16"	.719"	20,000 v.	7-7	TML-30DE	18.55
60-60	26-26	18 1/16"	.469"	15,000 v.	11-11	TML-60DD	20.15
100-100	27-27	18 1/16"	.344"	10,000 v.	15-15	TML-100DB	22.35
60-60	20-20	13 3/8"	.344"	10,000 v.	9-9	TML-60DB	19.15
200-200	30-30	18 1/16"	.219"	7,500 v.	21-21	TML-200DA	24.60
100-100	17-17	10 1/8"	.219"	7,500 v.	11-11	TML-100DA	20.15

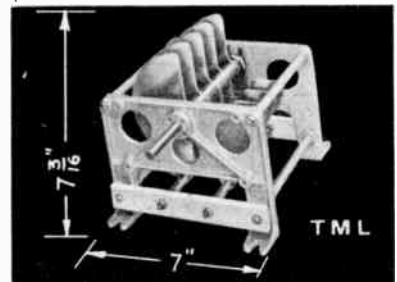
**TYPE LMT**

A heavy duty transmitting condenser that completely eliminates troublesome closed loops, vastly simplifying the problem of unwanted harmonics. The rotor shaft is completely insulated from the end plates. Long leakage path (higher safety factor). Plates and parts are extra heavy with highly polished rounded edges to prevent flash-over. Adjustable stator plate mounting and end bearings. Available in single-stator, double-stator, or double-stator right angle center drive models. Same capacities and prices as National TML Condenser. Condensers with right angle drive add \$3.90 to price shown.



**TYPE TML**

is a heavy duty job throughout. The frame structure (rugged aluminum castings with dural tie bars) and precision bearings assure permanent rotor alignment. All plates are extra thick with rounded and polished edges. This, plus specially treated steatite insulators and a husky self-cleaning rotor contact, provides high flashover, current and voltage ratings.



# POPULAR COMPONENTS



## MINIATURE CONDENSERS:

Type PS variable condensers are compact silver plated units of soldered construction for use as semi-fixed bandsets or padders. Base is steatite — bearing is "snug" but smooth. PSR models are screw-driver adjust type; PSE have 1/4" diameter shafts both ends; PSL are similar to PSR but include rotor shaft lock.

**Type M-30 Net \$ .22**  
The M-30 is a tiny (13/16" x 9/16" x 1/2") mica trimmer — 30 mmf. max. — steatite base.

**Type W-75, 75 mmf. Net \$1.60**

**Type W-100, 100 mmf. Net \$1.76**  
Small air-dielectric padding condensers having a very low temperature coefficient. They are mounted in 1 1/4" diameter aluminum shields and have 1/4" hex heads for socket-wrench adjustment.

The UM condensers are low-loss, aluminum plate staked construction miniature variables designed for UHF converters, VFOs and the like — minimum capacity is exceptionally low. The UMs can be mounted in PB-10 or RO shield cans and have 1/4" dia. shafts front and rear for ganging (see pages 21, 23 and 24 for shield cans and couplings). Plates: straight-line-cap., 180° rotation. Dimensions: Base 1" x 2 1/4", mtg. holes on 3/8" x 1-23/32" centers, 2-5/16" max. length.

The UMB-25 and UMB-50 are differential (balanced stator) models. UM-10D and UMA-25 are double-spaced and the latter is bolted construction for experimental capacity reduction. Hardware for panel or chassis mounting is supplied with all UM condensers.

Capacity	Catalog Symbol			Net
25 mmf.	PSR-25	PSE-25	PSL-25	\$1.70
50	PSR-50	PSE-50	PSL-50	1.85
75	PSR-75	PSE-75	PSL-75	2.00
100	PSR-100	PSE-100	PSL-100	2.15

Capacity	Minimum Capacity	No. of Plates	Air Gap	Catalog Symbol	Net
15 mmf.	1.5	6	.017"	UM-15	\$1.02
35	2.5	12	.017"	UM-35	1.15
50	3	16	.017"	UM-50	1.25
75	3.5	22	.017"	UM-75	1.45
100	4.5	28	.017"	UM-100	1.60
10	1	8	.042"	UM-10D	1.40
25	3.4	14	.042"	UMA-25	1.75

### BALANCED STATOR MODEL

25	2	4-4-4	.017"	UMB-25	\$2.40
50	5	8-8-8	.017"	UMB-50	2.70

## NEUTRALIZING CONDENSERS:

**NC-600U Net \$3.38**

With standoff insulator

**NC-600 Net \$3.32**

Without insulator

For neutralizing low power beam tubes requiring from .5 to 4 mmf., and 1500 max. total volts such as the 6L6. The NC-600U is supplied with a GS-10 standoff insulator screwed on one end, which may be removed for pigtail mounting.

## "TU BY" CONDENSERS

Tubular condensers providing short r.f. path between plate and cathode for tubes having the plate connection at the top. Design reduces harmonics and helps eliminate parasitics. 3,000 volts or 1,500 volts. 15 mmfd. Net \$1.80

## STN

Net \$2.07

The Type STN has a maximum capacity of 18 mmf. (3000 V), making it suitable for such tubes as the 809. It is supplied with two standoff insulators.

## NC-800A

Net \$3.00

The NC-800A disk-type neutralizing condenser is suitable for the T40, 35TG, 808 and similar tubes. It is equipped with a clamp for locking. The chart below gives capacity and air gap for different settings.

## NC-75

Net \$3.60

For 812, 75TH and similar tubes.

## NC-150

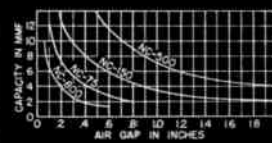
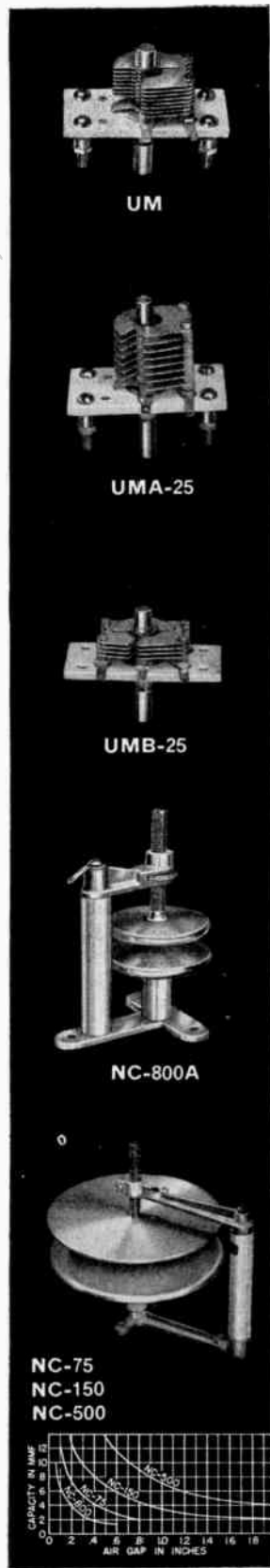
Net \$5.25

For RK36, 100TH, HK354, 250TH, etc.

## NC-500

Net \$8.75

For WE-251, 304TH, 833A and the like. These large disk-type neutralizing condensers are for the higher powered tubes. Disks are aluminum, insulation steatite.



NATIONAL COMPANY, INC.,

MALDEN, MASS.

# POPULAR COMPONENTS

## PRECISION CONDENSERS

Originally developed for the famous HRO and NC-100 receivers, National PW and NPW condensers and drive units are well known to professional and amateur radio men throughout the world. Sturdily constructed of the finest materials and carefully adjusted by skilled hands, they have become "standard specifications" for applications requiring smooth, precise control and high re-set accuracy.

The Micrometer Dial reads direct to one part in 500. Division lines are approximately  $\frac{1}{4}$ " apart. The drive, at the mid-point of the rotor, is through an enclosed preloaded worm gear with 20 to 1 ratio. Each rotor is individually insulated from the frame, and each has its own individual rotor contact. Stator insulation is steatite. Plate shape is straight-line frequency when the frequency range is 2:1.

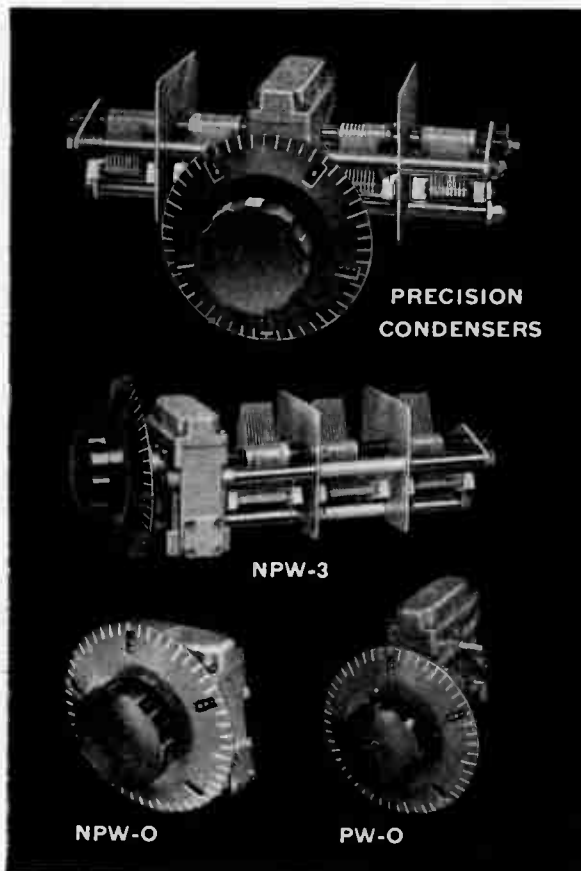
PW Condensers are available in 1, 2, 3 or 4 sections, in either 160 or 225 mmf per section. Larger capacities cannot be supplied.

PW-1R	Single section right	Net \$13.50
PW-1L	Single section left	Net \$13.50
PW-2R	Double section right	Net \$18.00
PW-2L	Double section left	Net \$18.00
PW-2S	Single section each side	Net \$18.00
PW-3R	Double section right; single left	Net \$24.00
PW-3L	Double section left; single right	Net \$24.00
PW-4	Double section each side	Net \$27.00
NPW-3	Three sections, each 225 mmf.	Net \$24.00

Similar to PW models, except that rotor shaft is perpendicular to panel.

**NPW-O** Net \$9.00  
Uses parts similar to the NPW condenser. Drive shaft perpendicular to panel. One TX-9 coupling supplied.

**PW-O** Net \$9.90  
Uses parts similar to the PW condenser. Drive shaft parallel to panel. Two TX-9 couplings supplied.



### PW-D

The Micrometer Dial used on the condensers and drives above is available separately. It revolves ten times in covering the complete range and as there is no gear reduction unit furnished, the driven shaft will revolve ten times, also. The PW-D dial fits a shaft  $\frac{5}{16}$ " in diameter.

Net \$5.25

## MULTI-BAND TANK ASSEMBLIES

The unique MB-150 Multi-Band Tank tunes all amateur bands from 80 through 10 meters with 180° rotation of the shaft; the coils are never changed. The unit is built around a circuit which tunes to two harmonically unrelated frequencies at the same time. Thus, it becomes possible to cover a wide frequency range and yet maintain a reasonably constant L/C ratio. 3" wide x  $8\frac{1}{4}$ " high (including the GS-10 standoffs) x 9" long overall including the  $\frac{1}{4}$ " dia. shaft and output terminals.

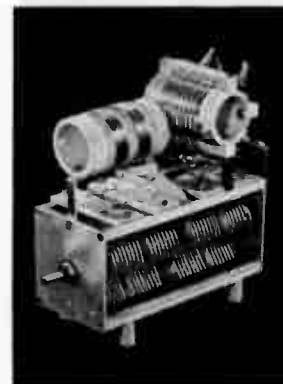
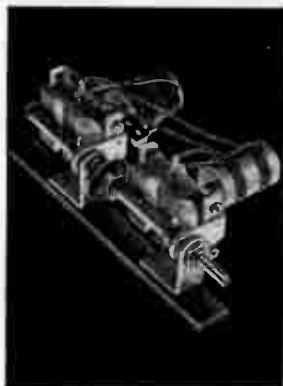
Features of the MB-150:

- (1) For use as the all-band plate tank in push-pull or single-ended stages running up to 150-watts input (1500 volts peak). It is ideal for a pair of 807s or 809s or a single 829B.
- (2) Separate link coupling coil has special clips which adjust to match impedances up to 600 ohms directly. Output couples into a higher powered amplifier, an antenna or an antenna tuning network.
- (3) Fast band changing is accomplished without handling coils, thus removing one of the danger points in the amateur station.

MB-150 Multi-Band Tank Assembly Net \$18.75

### MB 40L LOW-POWER MULTI-BAND TANK

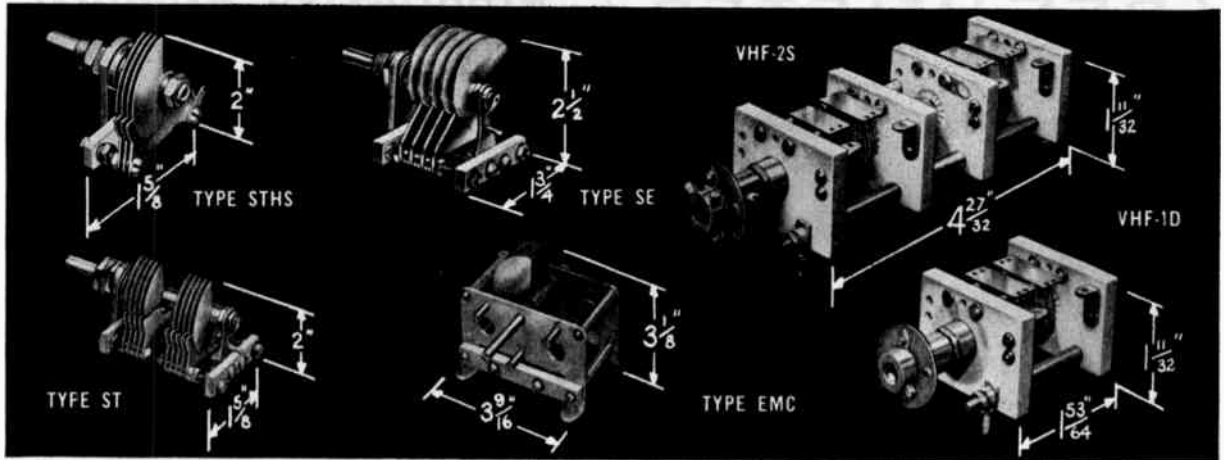
Same principle as the famous MB-150. Logical application as grid circuit for tubes having MB-150 in plate circuit. Will handle 40 watts input if link kept loaded. Net \$9.90



NATIONAL COMPANY, INC.,

MALDEN, MASS.

# POPULAR *National* COMPONENTS



## TYPE ST (180° Rotation) STRAIGHT-LINE WAVELENGTH

The ST Type condenser has Straight-Line Wavelength plates. All double-bearing models have the front bearing insulated to prevent noise. On special order a shaft extension at each end is available, for ganging. On double-bearing single shaft models, the rotor contact is through a constant impedance pigtail Steatite insulation.

NOTE—Type SS Condensers, having straight-line capacity plates but otherwise similar to the Type ST, are available. Capacities and Prices same as Type ST.

Capacity	Minimum Capacity	No. of Plates	Air Gap	Length	Catalog Symbol	Net
<b>SINGLE BEARING MODELS</b>						
15 Mmf.	3 Mmf.	3	.018"	1 3/8"	STHS- 15	\$1.65
25	3.25	4	.018"	1 3/8"	STHS- 25	1.90
50	3.5	7	.018"	1 3/8"	STHS- 50	2.10

<b>SPLIT STATOR DOUBLE BEARING MODELS</b>						
50-50	5-5	11-11	.026"	2 3/8"	STD- 50	\$3.60
100-100	5.5-5.5	14-14	.018"	2 3/8"	STHD-100	3.90

<b>DOUBLE BEARING MODELS</b>						
35 Mmf.	6 Mmf.	8	.026"	2 1/4"	ST- 35	\$1.85
50	7	11	.026"	2 1/4"	ST- 50	1.90
75	8	15	.026"	2 1/4"	ST- 75	2.00
100	9	20	.026"	2 1/4"	ST-100	2.10
140	10	27	.026"	2 3/4"	ST-140	2.30
150	10.5	29	.026"	2 3/4"	ST-150	2.30
200	12.0	27	.018"	2 1/4"	STH-200	2.50
250	13.5	32	.018"	2 1/4"	STH-250	2.70
300	15.0	39	.018"	2 3/4"	STH-300	2.90
335	17.0	43	.018"	2 3/4"	STH-335	3.10

## TYPE SE (270° Rotation) STRAIGHT-LINE FREQUENCY

TYPE SE—All models have two rotor bearings, the front bearing being insulated to prevent noise. A shaft extension at each end, for ganging, is available on special order. On models with single shaft extension, the rotor contact is through a constant impedance pigtail. The SEU models (illustrated) are suitable for high voltages as their plates are thick polished aluminum with rounded edges. Other SE condensers do not have polished edges on the plates. Steatite insulation.

15 Mmf.	7 Mmf.	6	.055"	2 1/4"	SEU- 15	\$2.80
20	7.5	7	.055"	2 1/4"	SEU- 20	2.95
25	8	9	.055"	2 1/4"	SEU- 25	3.10
50	9	11	.026"	2 1/4"	SE- 50	2.30
75	10	15	.026"	2 1/4"	SE- 75	2.40
100	11.5	20	.026"	2 1/4"	SE-100	2.60
150	13	29	.026"	2 3/4"	SE-150	2.75
200	12	27	.018"	2 1/4"	SEH-200	2.90
250	14	32	.018"	2 1/4"	SEH-250	3.00
300	16	39	.018"	2 3/4"	SEH-300	3.25
335	17	43	.018"	2 3/4"	SEH-335	3.50

## TYPE EMC (180° Rotation) STRAIGHT-LINE WAVELENGTH

TYPE EMC—A general purpose condenser available in large sizes and having Straight-Line wavelength plates. They are similar in construction to the TMC Transmitting condenser, and have high efficiency and rugged frame. Insulation is Steatite, and Peak Voltage Rating is 1000 volts. Same sizes available with straight line capacity plates, type DXC condenser.

Capacity	Minimum Capacity	No. of Plates	Length	Catalog Symbol	Net
150 Mmf.	9 Mmf.	9	2 1/4"	EMC- 150	\$4.50
250	11	15	2 15/16"	EMC- 250	4.75
350	12	20	2 15/16"	EMC- 350	6.00
500	16	29	4 3/8"	EMC- 500	6.75
1000	22	56	6 3/4"	EMC-1000	10.35

## VHF CONDENSERS

- Shaft extension at rear for ganging purposes. Dual condensers ideal for mixer-oscillator unit.
- Ball bearings front and back for smooth rotation and freedom from back-leak.
- Brackets for mounting 7-pin miniature tube sockets, i.e., National XOA for very short leads from tube to condenser essential for VHF efficiency, and rigid compact unit-assembly that produces better stability.
- Wide low-inductance stator strap connections raise frequency limit of condensers. Coil or strap tank can be connected directly to stator straps allowing maximum inductance in tank and a minimum of inductance between tank and stator.
- Stators, rotors and stator strap connections silver-plated for best efficiency.
- Rigid square construction, heavy insulating end plates.
- Spade bolts allow solid connections to chassis for extreme rigidity.
- Flexible insulating coupling available to connect condenser shaft to 3/8" dial shaft.
- Flexible insulating coupling available to connect two or more condensers together as ganged units.
- High capacity single spaced units for general coverage.
- Low capacity double spaced units for bandspread, suitable for ham use, particularly in the VHF and UHF ham bands.
- Stators solder construction can be removed and replaced by strap tanks for special VHF and UHF application.

## DOUBLE SPACED MODELS

Two section VHF-2D, price \$6.50.

Maximum capacity per section stator to stator	6.75 mmf.
Minimum capacity per section stator to stator	3.0 mmf.
Net change	3.75 mmf.

Single section VHF-1D, price \$3.25.

Maximum capacity stator to stator	6.75 mmf.
Minimum capacity stator to stator	3.0 mmf.
Net change	3.75 mmf.

## SINGLE SPACED MODELS

Two section VHF-2S, price \$6.50.

Maximum capacity per section stator to stator	22.5 mmf.
Minimum capacity per section stator to stator	3.0 mmf.
Net change	19.5 mmf.

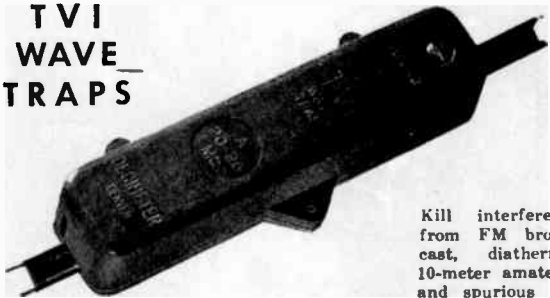
Single section VHF-1S, price \$3.25.

Maximum capacity stator to stator	22.5 mmf.
Minimum capacity stator to stator	3.0 mmf.
Net change	19.5 mmf.

NATIONAL COMPANY, INC.,

MALDEN, MASS.

## TVI WAVE TRAPS



Kill interference from FM broadcast, diathermy, 10-meter amateur, and spurious IF.

DeciMeter TVI Wave Traps are easy to install — they slide over lead-in — require no cutting of wire, and no ground connection.

In three ranges:

- A — 20 MC. to 26 MC.
- B — 25 MC. to 35 MC.
- C — 88 MC. to 108 MC.

List price, any range **\$4.95** Write for Bulletin RM-11

## DM-430 DIVERSE ADAPTOR

... brings diversity reception to the ham rig at low cost. The DM-430 is connected to two antennas of different characteristics, and automatically and instantly selects the best antenna for best reception. Minimizes deep fading in HF. Ideal for any

communications receiver. Used without tuning.

Range of 3 to 30 Megacycles.

Neon bulb indication of antenna being used.

For AM and FM phone signals and frequency-shift keying.

For either or both balanced or unbalanced antennas.

Net price, assembled **\$29.50**

Kit **14.95** Write for Bulletin RM-12

## DM-240-A OSCILLATOR

... makes 13 CM. receivers and transmitters practical. Uses 2C40 tube. Precise adjustments control tuning, feedback, and output coupling. Supplied complete

with all hardware and instructions.

Tuning range of 2000 to 2500 MC.

One watt output.

Net price **\$19.50**  
(less tube)

Write for Bulletin RM-15

## DECALS for ELECTRONICS

World's largest assortment of Decals for Electronics — over 200 different title plates, dial plates, alphabets and numerals, high-voltage signs in red, call letters in black and gold, and television terms.

Printed in neat, opaque letters on clear, tough backing. Top surface has protective coating which provides high resistance to wear. Superior adhesive qualities.

Water-type "slip-off" decals.

Adhere to any clean surface.

Economical to use.

Improve appearance and safety of equipment.

Self-service display assortment for jobbers.

Write for Bulletin RM-14

## The New TV



## "PROFESSIONAL" PREAMPLIFIER

Here is the preamp that does everything a preamp should do—an entirely different approach to and solution of the problems of preamplification.

### Exclusive Features:

Balanced circuit — less noise pickup.

Adjustable gain to suit all conditions.

Constant band width amplifies sound and picture equally on all channels.

Three tuned circuits reject interference.

Shielded transformer reduces line noise.

Channel switch — factory tuned coils.

Picture increased up to 5 times over noise.

Glareless illuminated dial — no squinting at switch numbers.

Handsome cabinets — complement all TV receiver cabinets.

**POSITIVELY GUARANTEED TO IMPROVE RECEPTION IN FRINGE AREAS.**

List price **\$59.50**

Write for Bulletin RM-16.

## The DM-103-W "SLIPSTICK" WAVEMETER

The Slipstick gives quick, accurate frequency readings on oscillators, receivers, or transmitters in the UHF field. A sturdy, every-day tool for the engineer and experimenter. Easy to use, the Slipstick is coupled to the oscillator, receiver, or transmitter by inserting its tip into the rf field, or the antenna circuit.

Enormous range — 90 to 3000 MC.

Rapid, direct-reading scale.

2% accuracy or better; sturdy construction.

Polystyrene insulation for permanence and low loss.

Net price **\$16.50**

Write for Bulletin RM-13.



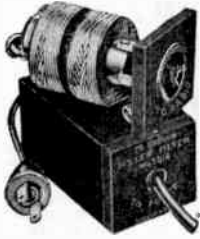
# DECIMETER

INC.

1430 MARKET ST. DENVER 2, COLO

# Miller

## ALL WAVE INTERFERENCE FILTER



These filters are designed to eliminate radio interference caused by small household appliances such as sewing machines, vacuum cleaners, food mixers and other similar devices requiring less than 150 watts. Inductive-capacitive circuit assures maximum attenuation of interference.

Dimensions: 2½" square x 4" long.

Cat. No.	Volts	Watts	List Price
7818	115	150	\$7.00

## APPLIANCE FILTER

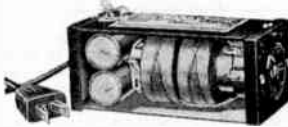


Similar to the Cat. No. 7818, except wound with larger wire to be used with all types of plug-in devices with power requirements up to 550 watts.

Dimensions: 2½" square x 4" long.

Cat. No.	Volts	Watts	List Price
7815	115	550	\$7.00

## GENERAL PURPOSE FILTER

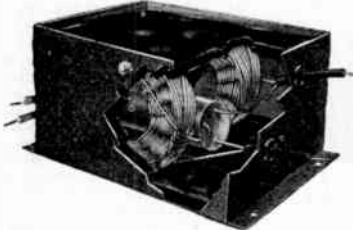


This filter is recommended for use with marine and D.C. appliances and radios. It is also for use with extremely noisy A.C. appliances. A good, permanent connection to ground should be used with this filter.

Dimensions: 2½" square x 5" long.

Cat. No.	Volts	Watts	List Price
7813	115	200	\$7.50

## INDUSTRIAL FILTERS



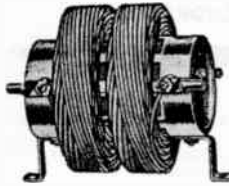
Miller industrial filters are designed for use with all types of radio interference producing devices. Duo-lateral wound chokes and non-inductive condensers result in a high degree of noise attenuation. Completely sealed in metal cases having provision for standard junction boxes at each end of the case.

Dimensions: 9-3/42" x 6-1/2" x 5" high.

Weight: 16 lbs. Approx.

Cat. No.	Volts	Amps.	List Price
7841	220	5	\$30.00
7842	220	10	32.50
7843	220	20	35.00
7844	220	30	37.50
7845	220	40	40.00

## LINE FILTER CHOKES



All Miller line filter chokes are duo-lateral wound on ceramic forms (except #7825 & D-7825 are on bakelite). They are for installation in noise producing equipment such as flasher signs, farm lighting plants, motor generators, etc. Also used with radio transmitters to prevent r.f. energy feed-back into the power circuits. Typical circuit diagrams are supplied with each choke. Always select chokes having a current rating at least as high as the maximum current load of the circuit to be filtered.

### SINGLE LINE FILTER CHOKES

For use in filtering individual and branch circuits.

Dimensions: #7825 1-7/8" x 1-3/4"

Others: 2-1/2" x 4"

Cat. No.	Amps.	Ohms.	MH	List Price
7825	2	.75	.60	\$1.50
7826	5	.28	.57	4.00
7827	10	.15	.37	4.50
7828	20	.08	.20	5.00
7829	30	.05	.13	5.50

### DUAL LINE FILTER CHOKES

For use in filtering both sides of single phase circuits.

Dimensions: #D-7825 3-1/4" x 2-1/8"

Others: 4-1/2" x 4"

Cat. No.	Amps.	Ohms.	MH	List Price
D-7825	2	.75	.60	\$3.00
D-7826	5	.28	.57	6.00
D-7827	10	.15	.37	7.00
D-7828	20	.08	.20	8.00
D-7829	30	.05	.13	9.00

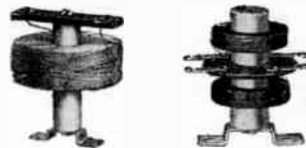
Specifications are for each winding.

### TOWER LIGHTING CHOKES

Similar in construction and size to the D-7826, except of 2-pi construction and recommended for use in the circuits of obstruction and warning lights of antenna towers.

Cat. No.	Amps.	Ohms.	MH	List Price
7870	5	.56	1.20	\$6.00
7871	10	.30	.75	7.00
7872	20	.17	.45	8.00

### RECTIFIER HASH FILTER CHOKES



Duo-lateral wound chokes for use in series with the plate leads of mercury vapor rectifiers to prevent r.f. hash feed-back. The single chokes are insulated for use up to 10,000 volts to ground. The dual choke is insulated for 2500 volts plate to plate. Wound on Alsimag forms with two hole mounting brackets.

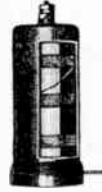
Dimensions: 2" dia. by 2-3/8" high.

Cat. No.	MH	Ohms	MA	List Price
7867	4.50	4.5	500	\$2.00
7868	2.75	2.3	1000	2.50

Dual Choke Dimensions: 1-1/4" Dia. x 1-3/4" high

7865	3.25 (per Coil)	15	250	1.50
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## HIGH TENSION FILTER CHOKES



These chokes are used to prevent radio interference caused by high tension (secondary) circuit neon sign animators and lead radiation of border tubing. The chokes are sectional wound and enclosed in weatherproof bakelite cases. They are insulated for 15,000 volts and continuous current operation up to 100 milliamperes. Designed for ease of installation and trouble-free service.

Circuit diagram supplied with each choke.

Dimensions: 1-3/8" dia. x 3-1/4" high.

Cat. No.	Volts	Amps.	List Price
7875	15,000	.1	\$2.50

## ELECTRIC SHAVER FILTER



Carefully designed and constructed, this filter is the inductive-capacitive type and requires no ground connection.

Shock-proof moulded rubber construction. For use with all electric shavers. Fully guaranteed.

Dimensions: 1-1/8" dia. x 3" long.

Cat. No.	Volts	Watts	Finish	List Price
7817	115	50	Black	\$2.50
7817-1	115	50	Ivory	2.50

## RADIO INTERFERENCE FILTER CONDENSERS



Highest quality non-inductive wound paper dielectric condensers manufactured for use with Miller Filters and Filter chokes. These condensers are rated at 220 volts AC or DC and are designed to withstand surges up to 1000 volts. Uncaused type for installation within the equipment. Wax impregnated and sealed.

Maximum operating voltage—220 AC.

Cat. No. Capacity Dimensions List Price

7803 2.x.2. Mfd.	1-7/8" x 1-1/4" x 4-1/2"	\$4.50
7804 2. mfd.	1-7/8" x 3/4" x 3-1/2"	2.50

## FLUORESCENT LIGHT FILTER CHOKES



Radio interference generated by fluorescent lights and tubing may be prevented from getting into the supply line by the use of these filter chokes. Chokes are installed as close to the ballast as practical. Complete instructions are supplied with each choke.

Dimensions: 1-1/4" dia. x 1-1/2" long.

Cat. No.	Volts	Watts	List Price
7876	220	20	\$1.50
7877	220	40	1.50
7878	220	80	1.50
7879	220	160	1.50

## FILAMENT CHOKE



Enclosed solenoid wound chokes for use in the filament and vibrator circuits of battery operated receivers, transmitters, etc.

Dimensions: 3/4" Dia. x 1-1/8" long, plus 3" leads.

Cat. No.	uH	Ohms	Amps.	List Price
5221	10	.02	8	\$ .60

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

[A]



# Miller

## UNSHIELDED CHOKES



These single section R.F. Chokes are ideally suited for general purpose applications in receiver and filter circuit. Solder lug terminals and single hole mounting.

### AIR CORE TYPE

Dimensions: 1-1/8" dia. x 3/8" high.

Cat. No.	MH	Ohms	MA	List Price
610	.25	8	125	\$.40
620	.75	17	125	.40
630	1.50	21	125	.40
640	2.50	28	125	.50
650	5.0	41	125	.50
660	7.5	53	125	.50
670	10.0	64	125	.60
680	12.5	74	125	.60
690	15.0	83	125	.60
691	20.0	97	125	.75
692	30.0	120	100	.75
693	60.0	175	100	1.00
694	80.0	230	100	1.25

### Center Tapped Chokes

Cat. No.	MH	Ohms	MA	List Price
670-T	10.0	64	125	.70
691-T	20.0	97	100	.85
693-T	60.0	175	100	1.10

### IRON CORE TYPE

These chokes are similar in construction to the No. 600 series except that they are wound on powdered iron cores.

Cat. No.	MH	Ohms	MA	List Price
951	.5	6.8	125	\$.90
952	1.0	10.9	125	1.00
953	2.5	19.5	125	1.05
954	5.0	23.0	125	1.20
955	7.5	37.0	125	1.25
956	10.0	45.0	125	1.30
957	25.0	78.0	100	1.60
958	50.0	130.0	100	1.75
959	75.0	172.0	100	2.00
960	100.0	210.0	100	2.25
961	150.0	268.0	100	2.50



### SHIELDED CHOKES

Single section wound R.F. R.F. Chokes assembled in round aluminum shield with two spade bolts for mounting. Solder lug terminals.

Dimensions: 1-1/4" dia. x 1" high (No. 758 is 1-5/8" dia.)

Cat. No.	MH	Ohms	MA	List Price
751	.5	10	125	\$.75
752	1.0	17	125	.75
753	2.5	30	125	.85
754	5.0	49	125	.85
755	7.5	61	125	.85
756	10.0	75	125	.95
757	25.0	125	125	1.10
758	50.0	186	100	1.35

### IRON CORE TYPE

Similar to the No. 700 series except wound on powdered iron cores for lower circuit loss.

Dimensions: 1-1/4" dia. x 1" high.

Cat. No.	MH	Ohms	MA	List Price
851	.5	8.6	125	\$1.25
852	1.0	11.5	125	1.35
853	2.5	22.0	125	1.40
854	5.0	31.0	125	1.55
855	7.5	42.0	125	1.60
856	10.0	47.0	125	1.65
857	25.0	100.0	125	1.95

Dimensions: 1-5/8" dia. x 1" high.

Cat. No.	MH	Ohms	MA	List Price
858	50.0	160.0	100	2.10
859	75.0	222.0	100	2.35
860	100.0	348.0	100	2.60
861	150.0	520.0	100	2.85

## LOW POWER AND RECEIVER CHOKES



These chokes are wound on 1/4" dia. forms and feature the exclusive Miller 'Sta-on' terminal clips. Low distributed capacity and accurate inductance values.

Dimensions: (form) 1/4" dia. x 1-1/2" long.

Cat. No.	MH	Ohms	MA	List Price
4531	.5	11	200	\$.75
4532	1.5	21	200	.75
4537	2.5	26	200	.75
4538	5.0	40	125	1.00
4539	7.5	79	125	1.25
4540	10.0	95	125	1.50
4541	25.0	160	125	1.75

### UHF CHOKES

Dimensions: 1/4" Dia. x 1-1/2" long.

Cat. No.	uH	Ohms	MA	List Price
4528	2.5	.07	200	\$.60
4529	4.0	.25	200	.60

### SINGLE STUD MOUNTING CHOKE

Dimensions: 3/8" O.D. x 1-1/4" high (plus #6-32 stud)

Cat. No.	MH	Ohms	MA	List Price
4530	2.5	23	200	\$.85

## PHONO SCRATCH FILTER



The Miller Phono Scratch Filter is designed to reduce needle and surface noise and may be used with any type of high impedance phonograph pick-up. The resonant frequency of the parallel tuned circuit is adjustable between 2000 and 3000 cycles. The attenuation is approximately 22 db. Assembled in an aluminum shield with two mounting brackets.

Dimensions: 1-3/8" x 1-7/8" x 3" high.

Cat. No.	Item	List Price
EL-59	Scratch Filter	\$.75

## TV POWER TRANSFORMER (R.F.)

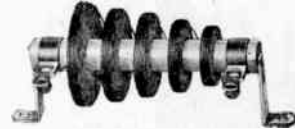


These R.F. power supply transformers for use with television receivers and cathode ray oscilloscope make it possible to construct an inexpensive source of high voltage D.C. Two types are available, the #4525 for voltages to 4000 DC and the #4526 for voltages to 10,000 DC (or 30,000 DC in a voltage rectifier tripler circuit). Type 1B3-GT tubes are used as rectifiers and the R.F. oscillator circuit uses one or more type 6V6 or 6Y6 tubes connected in parallel. The high frequency AC source permits use of simple and inexpensive resistive capacitive filters with low ripple content in the output. Typical circuit diagrams are supplied with each coil.

Cat. No.	Item	List Price
4525	H.V. R.F. Trans. (to 4 KV)	\$7.50
Dimensions—1 1/4" Dia. x 3 3/4" high		(Illustrated)

4526	H.V. R.F. Trans. (to 30 KV)	\$12.50
Dimensions—2 1/4" Dia. x 6" high		(not illustrated)

## HEAVY DUTY TRANSMITTER CHOKES

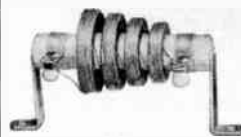


These heavy duty Navy Type R.F. chokes are sectional wound on Alsimcg forms and are provided with removable mounting brackets. Ends of form are tapped for #6-32 machine screw. For general use in amateur and commercial transmitters.

Dimensions: (form) 1/2" dia. x 3-1/2" long.

Cat. No.	MH	Ohms	MA	Meters	List Pr.
4534	1.0	2.5	1000	20	\$2.00
4535	1.5	3.6	1000	40	2.25
4533	2.5	4.5	750	80	2.50
4536	4.0	5.5	750	160	2.75

## MEDIUM DUTY TRANSMITTER CHOKES



For use in medium power transmitters, these chokes are similar in construction to our Heavy Duty types.

Low distributed capacity and accurate inductance values are features.

Dimensions: (form) 1/2" dia. x 2-1/2" long.

Cat. No.	MH	Ohms	MA	List Price
4550	2.0	6.5	400	\$1.50
4551	4.0	10.0	400	1.75

## 10 K. C. FILTERS



This filter is used to eliminate the 10 KC heterodyne 'whistle' present in high fidelity broadcast receivers. It is used in the detector load circuit of a diode or infinite impedance detector. The 10,000 cycle attenuation is approximately 30 db. The filter consists of a parallel resonant circuit with an iron core coil and a variable condenser providing a tuning range from 7500 to 12,000 cycles.

Dimensions: 1-3/8" sq. x 2-1/4" high.

Cat. No. Use List Price

EL-58	10 KC Filter	\$6.00
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This band elimination circuit 10,000 cycle filter has sharper cut-off characteristics than our type EL-58. It should be connected in the plate circuit of a triode audio stage. The cut-off frequencies are 9000 and 11,000 cycles. The load resistance R is 10,000 ohms. The attenuation is approximately 30 db. Recommended for general use with any high fidelity broadcast band receiver.

Dimensions: 1-3/8" x 1-7/8" x 2-7/8" high.

Cat. No.	Use	List Price
EL-60	10 KC Filter	\$12.50

## PHONO-OSCILLATOR COIL



The Miller Phono-Oscillator coils are permeability tuned and are assembled in an aluminum shield, together with the grid coupling condenser and resistor. The tuning range of the coil is from 540 to 700 KC, by core adjustment. A typical circuit diagram is supplied with each coil.

Dimensions: 1-7/16" square x 2-1/2" high.

Cat. No.	Use	Freq. Range	List Price
522	Phono-Oscillator	540-700 KC	\$3.00

[B1] For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

# Miller

## REPLACEMENT I. F. TRANSFORMERS

### (Double Tuned)



These transformers are an essential part of the stock of every serviceman and dealer. In many cases they will give better performance than the original transformer. All have been pretuned and should require only slight adjustment after installation. Leads are color coded, and the transformers are assembled in aluminum shields. These transformers may be used as replacements in most makes of

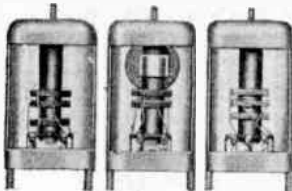
receivers using transformers of the same physical size. Be sure to order a transformer of the correct frequency.

Dimensions: 1-3/8" square x 2-5/8" high.

Cat. No.	Freq.	KC Range	Use	List Price
512-K1	175	160-190	Input	\$2.25
512-K2	175	160-190	Interstage	2.25
512-K3	175	160-190	Full-Wave	2.25
512-K4	175	160-190	Half-Wave	2.25
512-H1	262	240-280	Input	2.00
512-H2	262	240-280	Interstage	2.00
512-H3	262	240-280	Full Wave	2.00
512-H4	262	240-280	Half Wave	2.00
512-C1	455	425-500	Input	2.00
512-C2	455	425-500	Interstage	2.00
512-C3	455	425-500	Full Wave	2.00
512-C4	455	425-500	Half Wave	2.00

## UNIVERSAL REPLACEMENT COILS

### (Permeability Tuned)



This series of variable inductance iron core coils are well suited for general replacement use and new designs. The inductance may be adjusted to cover the standard broadcast band with tuning condensers having a maximum capacity of between 250 and 450 mmfd. The oscillator coils may be used with any I.F. amplifier operating in the 100 to 550 KC range. Complete instructions are supplied.

### UNSHIELDED

Dimensions: 7/8" dia. x 2" high. "L" mtg. Bracket.

Cat. No.	Use	Freq. Range	List Price
72-A	Antenna Stage	500-1800 KC	\$2.00
72-RF	R.F. Stage	500-1800 KC	2.00
72-Osc.	Oscillator Coil	100-550-KC I.F.	2.00

### SHIELDED

Dimensions: 1-3/8" square x 2-1/2" high

Cat. No.	Use	Freq. Range	List Price
73-A	Antenna Stage	500-1800	\$2.50
73-RF	R.F. Stage	500-1800	2.50
73-Osc.	Oscillator Coil	100-550 KC I. F.	2.50

## ANTENNA COIL PRIMARIES



High impedance dual-lateral wound replacement primary windings. Dimensions given are for outside diameter of coil secondary.

Cat. No.	Diameter	List Price
352	1/2"	\$.35
353	3/8"	.35
354	5/8"	.35
355	1"	.35
356	1 1/8"	.35
357	1-1/4"	.35

## DE-LUXE BROADCAST COILS



These coils are used in the finest quality receivers for lasting performance and stability. All coils are wound on XXX grade bakelite tubing and the secondaries are Litz wire wound (except oscillator coils) for maximum "Q". The antenna and R.F. coils are inductive-capacitive coupled for uniform gain. For use with standard 365 mmfd. tuning condensers.

### SHIELDED COILS

Dimensions: 1-7/8" dia. x 3" high.

Cat. No.	Use	Freq. Range	List Pr.
242-A	Antenna	540-1750	\$1.50
242-RF	Interstage	540-1750	1.50
242-BP	Band-pass	540-1750	1.25
277-C	2-coil Oscillator	540-1750*	1.25
279-C	Tapped Oscillator	540-1750*	1.10

NOTE: \*Oscillator coils are for use with 455KC intermediate frequency and require a 400 mmfd. series pad condenser.

### UNSHIELDED COILS

Dimensions: 7/8" dia. (form) x 2-3/4" high.

Cat. No.	Use	Freq. Range	List Pr.
241-A	Antenna	540-1750	\$1.00
241-RF	Interstage	540-1750	1.00
241-BP	Band-pass	540-1750	.85
276-C	2-coil Oscillator	540-1750*	1.00
278-C	Tapped Oscillator	540-1750*	.85

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency and require a 400 mmfd. series pad condenser.

## HIGH GAIN T.R.F. COILS

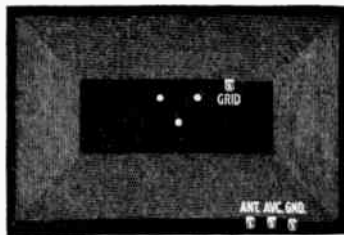


These coils are excellent for use in 2-tuned circuit TRF receivers and beginners circuits. They feature high impedance primaries and Litz wire wound secondaries wound on XXX grade bakelite tubing. Single "L" mounting brackets. For use with standard 365 mmfd. tuning condensers.

Dimensions: 1" dia. (form) x 2" high.

Cat. No.	Use	Freq. Range	List Pr.
42-A	Antenna	540-1600 KC	\$.90
42-RF	Interstage	540-1600 KC	.90

## LOOP ANTENNA



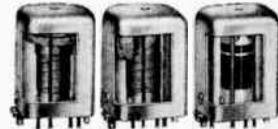
Using the patented "Air Loop" construction, the No. 703-A Loop Antenna provides high "Q" and mechanical rigidity. The loop as supplied has a secondary inductance of 253 microhenries, which may be reduced as needed. Instructions are supplied. May be used in older sets to replace the antenna coil for local reception without an antenna.

Dimensions: 8-1/8" 5-3/8" x 1/8" thick.

\*Mfg. under Franklin Airloop Co. Pat. #2,401,472

Cat. No.	Use	Frequency	List Price
703-A	Loop Antenna	540-1700 KC	\$1.75

## STANDARD BROADCAST COILS



High gain general purpose coils featuring high impedance coupled antenna and R.F. units with progressive wound Litz wire secondaries (except oscillator coils). For use with standard 365 mmfd. tuning condenser. All windings are thoroughly impregnated with tropicalized R.F. lacquer.

### SHIELDED COILS

Dimensions: 1-3/8" square x 2-1/2" high.

Cat. No.	Use	Freq. Range	List Pr.
44-A	Antenna	540-1700	\$1.15
44-RF	Interstage	540-1700	1.15
44-BP	Band-Pass	540-1700	1.15
44-C	2-coil Oscillator	540-1700*	1.15
41-C	Tapped Oscillator	540-1700*	1.15

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency amplifier and a 400 mmfd. series pad condenser.

### UNSHIELDED COILS

Dimensions: 3/8" dia. (form) x 2-1/2" high.

Cat. No.	Use	Freq. Range	List Pr.
43-A	Antenna	540-1700	\$.85
43-RF	Interstage	540-1700	.85
43-BP	Band-Pass	540-1700	.85
43-C	2-coil Oscillator	540-1700*	.85
45-C	Tapped Oscillator	540-1700*	.85

NOTE: \*Oscillator coils are for use with 455 KC intermediate frequency amplifier and a 400 mmfd. series pad condenser.

## REPLACEMENT OSCILLATOR COILS



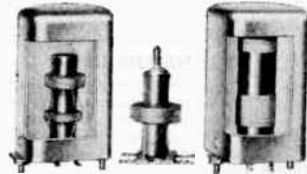
These solenoid wound general purpose coils may be used as general replacements in many makes of standard broadcast band receivers. For use with 365 mmfd. variable condensers to cover the band from 540 to 1700 KC. Wound on XXX grade bakelite tubing with enamelled copper wire.

### UNSHIELDED

Dimensions: 3/4" dia. x 1-3/4" long. "Z" mtg. Bracket.

Cat. No.	I.F. Freq.	Series Pad	List Price
480-K	175	.001 mfd.	\$.70
480-H	262	.0006 mfd.	.70
480-C	455	.0004 mfd.	.70

## ALL WAVE TEST OSCILLATOR COILS



A set of high quality coils for use in building an electron coupled test oscillator. A 2-gang 365 mmfd. condenser with sections connected in parallel is required. The fundamental frequency range, in five bands, is from 50 KC to 20 MC. The low frequency coil is unshielded, the other coils are in two shields measuring 1-3/4 square x 3" high.

Cat. No.	Use	Frequency	List Price
T-550	Test Oscillator	50-20,000 KC	\$7.50

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

# Miller

## TV HIGH-PASS FILTER



Cat. No. 6168..... 300-ohm line—List \$5.00

Improves picture clarity by rejecting interference from short wave stations, amateur transmitters, X-ray and diathermy equipment, electric appliances, etc. Attenuates all signals from zero to 40 megacycles. Passes all television channels with minimum loss. Installed easily in antenna lead-in at receiver. No tuning required. In aluminum can: 1-7/16" by 1-7/8" by 3-1/2".

## TV AND FM WAVE TRAPS

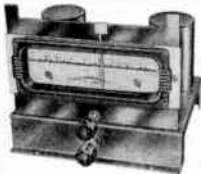


Cat. No. 6163 150-250 mc \$4.00  
6164 75-150 mc 4.00  
6165 40- 80 mc 4.00  
6166 20- 40 mc 4.00

These new high-Q series-resonant traps may completely eliminate interference and undesirable images in television and FM receivers. Assembled in aluminum shields designed for connection direct to antenna twin-lead. Convenient screwdriver tuning adjustment at top. Four traps will cover frequency ranges from 20 to 250 megacycles.

Dimensions: 1-7/16" by 1-7/8" by 3-1/2" high. 1-7/16" mounting centers.

## GERMANIUM CRYSTAL DIODE BAND-PASS TRF TUNER KIT



High fidelity! Uses germanium diode detector! No tubes! No power supply! No hum! A simple 2-tuned circuit negative mutual coupled band-pass tuner. Easy to assemble and wire. Full 22 kc. pass-band assures all brilliance of treble tones. Yet selective enough to separate local stations. With good antenna, AM stations in 20-25 mile range give audio output .05V to .5V. Use with your amplifier and speaker system for extra high quality reception. The Miller #585 TRF Tuner Kit contains coupling and TRF coils, 2-gang condenser, slide rule dial, chassis and hardware. Resistors, condensers, germanium crystal and volume control not included.

#585 TRF Tuner Kit List \$19.00

## TV ANTENNA COUPLING TRANSFORMERS



Clearer, brighter pictures when these transformers match antenna impedance to line, or line to TV receiver. Signal input may be improved as much as four times! Designed to couple low-impedance antenna to standard 300-ohm line; or 300-ohm antenna to 72-ohm twin-lead or low-loss 52-ohm coaxial cable. At receiver, low-impedance line matched to standard 300-ohm input. Housed in impregnated, weather-tight aluminum shield.

Dimension: 3/4" by 3/4" by 1-3/8".  
Cat. No. Impedance Ratio List Price  
6161 52/300 or 300/52 \$2.50  
6162 72/300 or 300/72 2.50

## DUAL WAVE TRAPS



Finest quality iron core dual wave traps having both a series and a parallel tuned circuit. Each circuit is tuned by a knob accessible at the top of the shields. Circuits may be tuned to the same frequency for maximum attenuation, or may be tuned to different stations within the range of the trap.

Dimensions: 1-3/8" x 2-3/4" x 2-1/4" high.

Cat. No.	Band	KC Range	List Pr.
813-X1	I.F. & Commercial	250-500	\$3.75
813-X2	I.F. & Commercial	125-250	3.75
813-BC1	Broadcast	900-1600	3.75
813-BC2	Broadcast	500-900	3.75
813-A	Amateur	1500-3000	3.75

## UNSHIELDED WAVE TRAPS

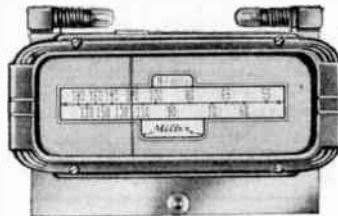


These unshielded wave traps may be installed within the cabinet or on the chassis. They are parallel resonant and provided with screw driver adjustment. Several traps may be connected in series with the antenna to provide simultaneous rejections of more than one interfering station.

Dimensions: 1-3/8" square x 1-3/4" high.

Cat. No.	Band	KC Range	List Pr.
811-X1	I.F. & Commercial	250-500	\$1.25
811-X2	I.F. & Commercial	125-250	1.25
811-BC1	Broadcast	900-1800	1.25
811-BC2	Broadcast	500-1000	1.25
811-A	Amateur	160 Meters	1.25
811-B	Amateur	80 Meters	1.25
811-C	Amateur	40 Meters	1.25
811-D	Amateur	20 Meters	1.25
811-E	Amateur	10 Meters	1.25

## SLIDE RULE DIALS



Miller Series No. 152 Slide Rule dials are designed for top-of-chassis mounting. The dimension from top of chassis to center of dial shaft bushing is 1-13/16". Dials are supplied with hubs for 3/8" diameter shafts. Two screw type dial light sockets are packed with each dial. The attractive escutcheon plate is finished in antique bronze with a protective lacquer coating. The dial scales are calibrated for use with condensers having counter-clockwise rotation. The escutcheon requires a panel cut-out measuring 1-7/8" high by 5-1/4" wide.

Dimensions:

6-3/8" wide by 4-1/4" high (plus 1/2" for dial lights), 1/4" diameter shaft extends 1-1/4" beyond front of dial. The dial tuning ratio is approximately 5-1/2 to 1 and the effective scale length is 4-3/8".

Cat. No.	Calibration	List Price
152	.540-1800 KC	\$6.00
152-A	.54-1.7 MC/0-100	6.00
152-B	.54-1.7/1.7-5.5 MC	6.00
152-C	.54-1.7/5.5-18. MC	6.00
152-D	.54-1.7/1.7-5.5/5.5-18 MC	6.00
152-E	.14-.42/.54-1.7/2.5-7 MC	6.00
152-F	.14-.42/2.5-7. MC	6.00

## LOOP ANTENNA WAVE TRAPS



These traps are designed especially for use with receivers having built-in loop antenna. Similar in construction to our Series #811, except with a separate low inductance winding which is to be connected in series with the loop antenna of the receiver. Slight readjustment of the loop tuning circuit after the trap has been installed is desirable. Trap circuit is parallel connected.

Dimensions: 1-3/8" square x 1-3/4" high.  
Cat. No. Band KC Range List Pr.

815-X1	I.F. & Commercial	250-500	\$1.50
815-X2	I.F. & Commercial	125-250	1.50
815-BC1	Broadcast	900-1800	1.50
815-BC2	Broadcast	500-900	1.50
815-A	Amateur	160 Meters	1.50
815-B	Amateur	80 Meters	1.50

## MIDGET I.F. TRANSFORMERS



These mica compression tuned intermediate frequency transformers are well suited for use in small receivers of all types. They measure only 1-1/8" square and 2" high. In spite of their small size, only the highest quality of parts and workmanship has been used in the construction of the Miller Midget transformers.

Dimensions: 1-1/8" square x 2" high.  
Cat. No. Use Freq. KC Range List Price

AIR CORE TYPES			
112-C1	Input	455	450-475 1.75
112-C2	Interstage	455	450-475 1.75
112-C3	Full Wave	455	450-475 1.75
112-C4	Half Wave	455	450-475 1.75
112-W1		1500	1400-1600 1.75
112-W2		1500	1400-1600 1.75
112-W3		1500	1400-1600 1.75
112-W4		1500	1400-1600 1.75

IRON CORE TYPES			
012-H1	262	250-275	2.00
012-H2	262	250-275	2.00
012-H3	262	250-275	2.00
012-H4	262	250-275	2.00
012-C1	455	450-475	2.00
012-C2	455	450-475	2.00
012-C3	455	450-475	2.00
012-C4	455	450-475	2.00
012-W1	1500	1400-1600	2.00
012-W2	1500	1400-1600	2.00
012-W3	1500	1400-1600	2.00
012-W4	1500	1400-1600	2.00

## PERMEABILITY TUNED TRANSFORMERS



Miller permeability tuned intermediate frequency transformers are recommended for all applications where a high degree of frequency stability and operation under humid conditions are used. The two iron core adjusting screws are accessible from the side of the aluminum shield. These transformers have excellent gain and selectivity characteristics. An internal spring clip prevents vibration from affecting the adjustment.

Dimensions: 1-3/8" square x 3-1/4" high.

Cat. No.	Use Freq.	KC Range	List Price
912-C1	Input	455 450-475	3.50
912-C2	Interstage	455 450-475	3.50
912-C3	Full Wave	455 450-475	3.50
912-C4	Half Wave	455 450-475	3.50
912-W1		1500 1400-1600	3.50
912-W2		1500 1400-1600	3.50
912-W3		1500 1400-1600	3.50
912-W4		1500 1400-1600	3.50
912-X1		3000 2900-3100	3.50
912-X2		3000 2900-3100	3.50
912-X3		3000 2900-3100	3.50
912-X4		3000 2900-3100	3.50

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For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

# Miller

## MINIATURE I.F. TRANSFORMERS\*



Designed for experimental and custom receivers as well as replacements for 'personal' radios, these transformers are permeability tuned and comparable in performance to standard size components. Expressly designed for use with the new miniature tubes. Plastic insulation throughout. Screw driver adjustment of primary and secondary from top and bottom of shield. Supplied with spring clip for mounting to the chassis.

Dimensions:  $\frac{3}{4}$ " square x 2" high.

\*Mfg. under K-Trans. Pats. and Pats. Pend.

Cat. No.	Use	Freq.	KC Range	List Price
12-M1	Input	262	250-275 KC	\$2.25
12-M2	Output	262	250-275 KC	2.25
12-C1		455	440-480 KC	2.00
12-C2		455	440-480 KC	2.00

## UNIVERSAL I.F. TRANSFORMERS



This new series of Miller transformers is used for general replacement purposes and in new designs. High gain and excellent stability are combined in a small transformer designed for use in both home and auto radio receivers. The ceramic mica compression trimmers have been heat cycled for temperature stability. All transformers are assembled in aluminum shields with screw-driver adjustment accessible at the top of the shield.

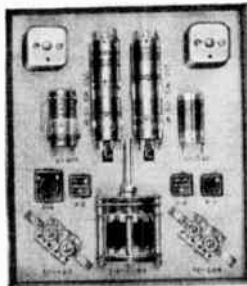
Dimensions:  $1\frac{1}{4}$ " square x  $2\frac{1}{2}$ " high.

Cat. No.	Use	Freq.	KC Range	List Price
<b>AIR CORE TYPES</b>				
312-M2	Input	262	250-275	\$1.50
312-M4	Output	262	250-275	1.50
312-C2		455	440-475	1.50
312-C4		455	440-475	1.50

### IRON CORE TYPES

412-M2	Input	262	250-275	\$2.00
412-M4	Output	262	250-275	2.00
412-C2		455	440-470	2.00
412-C4		455	440-470	2.00

## ALL WAVE COIL KIT

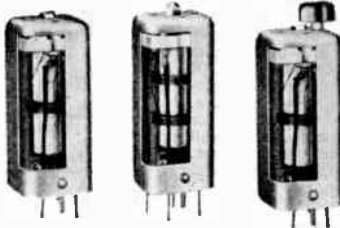


A simple, inexpensive coil kit for the construction of an all-wave receiver capable of out-performing many commercial sets costing much more than the Miller #511. Easy to construct by following the instructions supplied with each kit. 5 Tubes, including rectifier and 2 dual purpose tubes are used.

Frequency Range: 540-25,000 KC (in four bands)

Cat. No.	Quantity	Item	List Price
241-A	1	B. C. Ant. Coil	\$1.00
276-C	1	B. C. Osc. Coil	1.00
511-SWA	1	Short Wave Ant. Coil	2.25
511-SWC	1	Short Wave Osc. Coil	2.25
512-C2	1	455 KC Input I.F.	2.00
512-C4	1	455 KC Output I.F.	2.00
MA-2	2	H. F. Trimmers (dual)	1.00
.....	4	Osc. Series Pad Cond.	4.85
405	1	Band Selector Switch	3.25
511-CD	1	Circuit Diagram & Data	.50
MILLER #511		Coil Kit	List Price \$20.00

## SPECIAL I.F. TRANSFORMERS



For communications receivers, converters and special applications, we maintain a stock of special purpose transformers. The following types are typical of the varieties available.

### BEAT FREQUENCY OSCILLATORS

Cathode tapped transformers with adjustment knob at top of aluminum shield.

Dimensions:  $1\frac{3}{8}$ " square x  $3\frac{1}{4}$ " high.

Cat. No.	Frequency	KC Range	List Price
512-C5	455	450-475 KC	\$2.25
512-W5	1500	1400-1600 KC	2.25
512-X5	3000	2900-3100 KC	2.25
512-Y5	5000	4900-5100 KC	2.25

### REGENERATIVE I.F. TRANSFORMERS

Double tuned transformers with a tapped secondary for cathode regenerative feedback.

Dimensions:  $1\frac{3}{8}$ " square x  $3\frac{1}{4}$ " high.

Cat. No.	Frequency	KC Range	List Price
<b>AIR CORE TYPES</b>			
512-RC	455	450-475 KC	\$2.00
512-RW	1500	1400-1600 KC	2.00
512-RX	3000	2900-3100 KC	2.00

### IRON CORE TYPES

612-RC	455	450-475	\$2.50
612-RW	1500	1400-1600	2.50

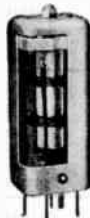
### CONVERTER OUTPUT TRANSFORMERS

Used to couple high frequency converters to existing radio receivers and using the receiver as an intermediate frequency amplifier.

Dimensions:  $1\frac{3}{8}$ " square x  $3\frac{1}{4}$ " high.

Cat. No.	Frequency	KC Range	List Price
512-QT	525	500-550 KC	\$2.00
512-WT	1500	1400-1600 KC	2.00
512-XT	3000	2900-3100 KC	2.00
512-YT	5000	4500-5500 KC	2.00

## IRON CORE TRANSFORMERS



These iron core transformers provide higher gain and selectivity than the conventional air core transformers of similar size. The mica compression trimmers, adjustable from the top of the shield, have been heat cycled for capacity stability. Gain and selectivity of a single stage using iron core transformers is often equal to two stages of air core transformers.

Dimensions:  $1\frac{3}{8}$ " square x  $3\frac{1}{4}$ " high.

Cat. No.	Use	Freq.	KC Range	List Price
612-M1	Input	262	250-275	\$2.50
612-M2	Interstage	262	250-275	2.50
612-M3	Full Wave	262	250-275	2.50
612-M4	Half Wave	262	250-275	2.50
612-C1		455	450-475	2.50
612-C2		455	450-475	2.50
612-C3		455	450-475	2.50
612-C4		455	450-475	2.50
612-W1		1500	1400-1600	2.50
612-W2		1500	1400-1600	2.50
612-W3		1500	1400-1600	2.50
612-W4		1500	1400-1600	2.50

## HIGH FIDELITY TUNER KIT



Essential parts for the construction of a band-pass T.R.F. broadcast receiver which, with a good amplifier and speaker system will enable you to really appreciate some of the fine high fidelity programs being broadcast by the better stations. Band width is 20 KC and a 10KC adjacent channel filter is included with the kit. Form #11941 gives complete details, it's yours for the asking.

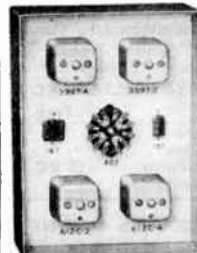
The Coil Kit consists of the following:

Cat. No.	Quantity	Item	List Price
472-UA	1	Untuned Ant. Coil	\$1.75
242-RF	2	Interstage Coils	3.00
242-BP	2	Band-Pass Coils	2.50
472-UT	1	Untuned Det. Coil	2.25
EL-56	2	Coupling Coils	2.00
EL-58	1	10 KC Filter	6.00
2104	1	4-Gang Condenser	15.00
570-CD		Circuit Diagram & Data	.25
MILLER #EL-575		Coil Kits	List Pr. \$32.75

The foundation Kit consists of:

Cat. No.	Quantity	Item	List Price
EL-570	1	Coil Kit	\$32.75
570-T	1	Tuner Chassis	12.00
570-TB	1	Chassis Bottom	3.00
152	1	Slide Rule Dial	6.00
570-P2	1	Relay Rack Panel	6.00
440	1	Terminal Plate	.50
3093	1	Dial Knob	.75
570-EP	1 Pr.	Engraved Plates	4.00
MILLER #EL-575		Foundation Kit	List Price \$65.00

## SKIP BAND COIL KIT



This new 2-Band coil kit covers the standard Broadcast band and the popular international short wave band. Shielded coils are used throughout. High frequency trimmers are incorporated in the coils. Requires a 2-gang 365 mmfd. tuning condenser.

Frequency range: 540-1500/5500-18,000 KC

The kit contains the following:

Cat. No.	Quantity	Item	List Price
3997-A	1	Antenna Coil	\$3.50
3999-C	1	Oscillator Coil	3.50
612-C2	1	455 KC Input I.F.	2.75
612-C4	1	455 KC Output I.F.	2.75
402	1	Band Selector Switch	2.50
161	1	400 mmfd. Osc. Pad	.60
167	1	.01 mfd. Osc. Pad	2.25
3997-CD	1	Circuit Diagram	.50
MILLER #3997		Coil Kit	List Price \$18.35

## ADJUSTABLE PADDER CONDENSERS



These adjustable oscillator padder condensers are of the finest quality mica-compression type with ceramic body. Capacity adjustable from both top and bottom of condenser.

Dimensions:  $\frac{7}{8}$ " x  $1$ " x  $\frac{3}{8}$ " thick.

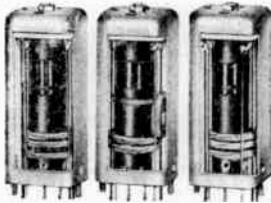
Cat. No.	Capacity Range	List Price
160-A	360-1000 mmfd.	\$.75
160-B	50- 400 mmfd.	.75

For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

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# Miller

## TWO BAND COILS



High quality 2-band shielded coils provided with built-in high frequency trimmers, accessible from the top of the shield. Solenoid and universal windings on XXX grade bakelite tubing, thoroughly impregnated against moisture, make these coils suitable for marine and tropical use as well as for general home receiver use. For use with standard 365 mmfd. tuning condenser.

Dimensions: 1-3/8" square x 3" high.

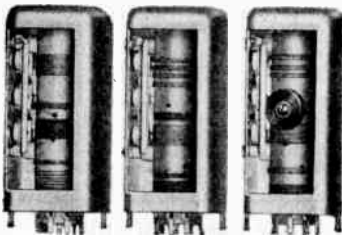
### BROADCAST & MARINE 540-1600/1600-4500 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
3996-A	Antenna			\$3.50
3996-RF	Interstage			3.50
3996-C	2-coil Oscillator	455 KC	{ 400 mmfd. }	3.50
3998-C	Tapped Oscillator		{ 1000 mmfd. }	

### BROADCAST & SHORT WAVE 540-1600/5500-18,000 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
3997-A	Antenna			\$3.50
3997-RF	Interstage			3.50
3997-C	2-coil Oscillator	455 KC	{ 400 mmfd. }	3.50
3999-C	Tapped Oscillator		{ 5000 mmfd. }	

## THREE BAND COILS



Communications receiver type coils especially designed for fine quality custom built entertainment receivers and commercial marine and aircraft use. These coils are all wound on XXX grade bakelite tubing and thoroughly impregnated against moisture. Individual high frequency trimmers for

each band are adjustable from the side of the aluminum shield. All coil terminals are connected to solder lug of the bottom of the coil form for under chassis wiring.

Dimensions: 2" square x 4-1/4" high.

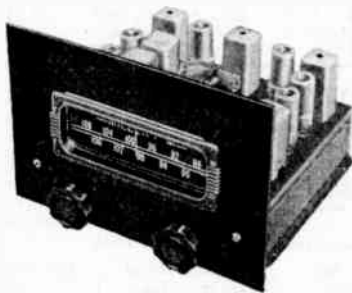
### ALL WAVE COILS 540 KC to 18. MC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
626-A	Antenna			\$5.50
626-RF	Interstage			5.50
626-C	2-coil Oscillator	455 KC	{ 400, 1600 }	5.50
625-C	Tapped Oscillator		{ 5000 mmfd. }	

### AIRCRAFT & MARINE COILS 140-425/540-1600/2500-7000 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
628-A	Antenna			\$5.50
628-RF	Interstage			5.50
628-C	2-coil Oscillator	455 KC	{ 120, 400 }	5.50
629-C	Tapped Oscillator		{ 1600 mmfd. }	

## F. M. TUNER KIT



This Kit contains the R.F. components to construct the finest FM tuner for home and professional use. Uses 8 miniature tubes in a circuit using cascade limiters ahead of the discriminator. Requires separate power supply and audio amplifier. The copper plated chassis measures only 7-1/2" deep x 8" wide x 2" high. All Miller Parts in the Kit may be purchased separately, if desired.

Frequency Range: 88-108 MC. The Kit contains the following:



## DOWELL TYPE COILS

Single section Litz wound secondary coils wound on 1/2" Dia. lo-loss ceramic dowels, these coils are provided with solder lugs on a bakelite terminal plate and with a #6-32 threaded stud for single hole chassis mounting. For use with standard 365 mmfd. tuning condenser.

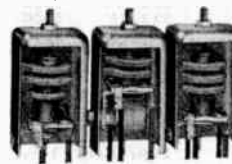
Dimensions: 3/4" square base x 1" high.  
(ABP & RF types 2-1/8" high)

Cat. No.	Use	Freq. Range	List Price
5480-A	Antenna	540-1600	\$1.00
5480-RF	Interstage	540-1600	1.25
5480-BP	Bond-Poss	540-1600	1.50
5480-K	2-coil Oscillator	540-1600*	1.00
5480-H	2-coil Oscillator	540-1600**	1.00
5480-C	2-coil Oscillator	540-1600***	1.00
5481-K	Tapped Oscillator	540-1600*	1.00
5481-H	Tapped Oscillator	540-1600**	1.00
5481-C	Tapped Oscillator	540-1600***	1.00

NOTE: \* For 175 KC I.F. with 1000 mmfd. series pad  
\*\* For 262 KC I.F. with 600 mmfd. series pad  
\*\*\* For 455 KC I.F. with 400 mmfd. series pad

## MIDGET R.F. COILS

(Adjustable Inductance)



This series of compact shielded coils is provided with an adjustable powdered iron core permitting approximately plus or minus 30% secondary inductance deviation from nominal values. Particularly recommended for aircraft, marine and mobile equipment and general custom receiver construction. Core is adjustable from top of aluminum shield. Coils are designed for use with standard 365 mmfd. tuning condenser.

Dimensions: 1-1/8" square x 2" high. (All Types)

### LONG WAVE BAND 140-425 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
X-320-A	Antenna			\$2.50
X-320-RF	Interstage			2.50
X-320-M	2-coil Oscillator	132 KC	400 mmfd.	2.00
X-320-C	2-coil Oscillator	455 KC	120 mmfd.	2.00
X-321-M	Tapped Oscillator	132 KC	400 mmfd.	2.00
X-321-C	Tapped Oscillator	455 KC	120 mmfd.	2.00

### BROADCAST BAND 540-1700 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
A-320-A	Antenna			\$1.75
A-320-RF	Interstage			1.75
A-320-M	2-coil Oscillator	132 KC	1600 mmfd.	1.75
A-320-C	2-coil Oscillator	455 KC	400 mmfd.	1.75
A-321-M	Tapped Oscillator	132 KC	1600 mmfd.	1.75
A-321-C	Tapped Oscillator	455 KC	400 mmfd.	1.75

### MARINE & AIRCRAFT BAND 2100-6300 KC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
B-320-A	Antenna			\$1.75
B-320-RF	Interstage			1.75
B-320-M	2-coil Oscillator	132 KC	6000 mmfd.	1.75
B-320-C	2-coil Oscillator	455 KC	1600 mmfd.	1.75
B-321-M	Tapped Oscillator	132 KC	6000 mmfd.	1.75
B-321-C	Tapped Oscillator	455 KC	1600 mmfd.	1.75

### SHORT WAVE BAND 6.0-18.MC

Cat. No.	Use	I.F. Freq.	Osc. Pad	List Price
C-320-A	Antenna			\$1.75
C-320-RF	Interstage			1.75
C-320-C	2-coil Oscillator	455 KC	5000 mmfd.	1.75
C-321-C	Tapped Oscillator	455 KC	5000 mmfd.	1.75

Cat. No.	Quantity	Item	List Price
1451	3	10.7 MC I.F.	\$6.00
1452	1	10.7 MC Disc.	3.00
1454	1	Antenna Coil	2.00
1455	1	Interstage Coil	2.00
1456	1	Oscillator Coil	2.00
1457	1	Filament Choke	.70
1458	1	Chassis & connectors	8.00
1459	1	Slide Rule Dial	7.00
1460	3	3 x 500 mmfd. cond.	4.50
1461	1	FM Tuning Condenser	5.50
420	1	Terminal Plate	.30
440	1	Terminal Plate	.50
3093	2	Tuning Knobs	1.50
Circuit Diagram Instructions & Hardware			1.00
MILLER #1450 FM. Tuner Kit			List Price \$44.00

[F1] For a Complete Listing of MILLER PRODUCTS ask for a copy of our Latest General Catalog.

SINCE  
1933



**RME**

FINE COMMUNICATIONS EQUIPMENT

**RADIO MFG. ENGINEERS, INC.**

*Peoria 6, Illinois U. S. A.*



**THE RME 84  
FOR HOME—PORTABLE OR MOBILE OPERATION**

RME 84 at right, VP-2—6 volt power pack with cable attached, optional for RME 84 in center, CM-1—Carrier Level "S" Meter with cord and plug, optional for RME 84 at left.

**The Coverage is Complete .540 to 44 Megacycles**

An important feature is the continuous coverage ranging from 540 kc to 44 megacycles. This coverage, in addition to providing for the regular broadcast band, takes in the 80, 40, 20, 15 and 10 meter amateur bands. The calibration is made on a 7 inch diameter scale. In addition, a smooth-running vernier dial gives band spread on any setting of the main scale. The vernier scale makes five complete revolutions for the 180 degree rotation of the tuning condenser.

**Seven Tubes Have Been Chosen For The RME 84**

1. A 7B7 loctal radio frequency amplifier is ahead of the first detector.
2. A 7S7 loctal is used as a first detector and radio frequency oscillator.
3. A 7B7 serves as the first IF operating at 455 kc.
4. A 7B7 second IF further amplifies the signal.
5. A 7K7 loctal acts as second detector and first audio amplifier.
6. Another 7K7 provides the beat frequency and acts as noise limiter.
7. The 6G6G provides the final audio frequency output.
8. A 5Y3GT is the power rectifier tube.

**Portability Built Into The RME 84**

Conscious of the fact that many thousands of amateurs want a receiver for portable operation, the new RME 84 is equipped with a special socket connection making possible connections to either a B battery and an A battery supply or a similar source of power such as an external vibropack. 135 volts of B and 6 volts of A battery will operate the RME 84 at full power. The drain on the B battery is only 32 milliamperes at 135 volts and the 6 volt A battery provides 1.5 amps. including the two dial lights.

The new noise limiter, of the series type, performs exceptionally well. Also made available for future use with the RME 84 is a signal strength meter to be connected through the special socket located on the rear of the chassis apron.

**SENSITIVITY:** The average sensitivity of the RME 84 is of the order of 2 microvolts over the entire range of the instrument.

**RME 84, CODE HANDY,** complete for 115 volt, 60 cycle operation and for use with external battery supply. May also be had for 230 volt, 25 cycle operation at additional cost. f.o.b. Peoria, Illinois, Net Selling Price **\$98.70**

**VP-2, CODE HOMER,** A 6 volt power pack with cable attached, optional equipment for RME 84. f.o.b. Peoria, Illinois, Net Selling Price **\$28.20**

**CM-1, CODE HURST,** Carrier Level "S" Meter with cord and plug, optional equipment for RME 84. f.o.b. Peoria, Illinois, Net Selling Price **\$14.00**

**VHF-152A  
3 BAND  
CONVERTER**

Reception on the new high frequencies, 50 to 54 mc. and 144 to 148 mc. bands, and better reception on the 27 to 29.7 mc. band, using the double detection system, image free, at a cost which any amateur can afford—that is what the new VHF-152 is designed to give. . . . Every owner of a communications receiver can, with the acquisition of this new converter, do a much better job of working high frequency signals than is possible with most any higher priced, specially designed receiver.

This converter provides an order of stability at 50 mc. much higher than most communications receivers have when operating at 5 mc. New engineering design and construction make this possible.

Miniature tubes are used, a 6AK5 rf amplifier and a 6J6 detector and a 6J6 oscillator complete the converter proper. The built-in power supply uses a 5Y3GT rectifier tube and a VR150 voltage regulator. The three bands are calibrated to cover the full sweep of a seven-inch diameter scale, indirectly illuminated. . . . The tuning mechanism is of the same sturdy, positive construction characteristic of all RME units. Smooth, velvety operation of the large knob makes operation a pleasure.

The sensitivity of the VHF-152 is of the order of 2 microvolts. Its output frequency is 7000 kc.

Separate connections are provided for the 10, 6 and 2 meter antennas and for the antenna used with the receiver. Each band has its own especially designed antenna input circuit of approximately 300 ohms impedance. The input of the receiver is changed from the VHF-152 output to the receiver antenna by a front panel switch. Another front panel switch selects the 10, 6 or 2 meter band for VHF-152 operation.

Interconnecting plug and cord are also furnished, which permanently connect the VHF-152 direct to the input terminals of the receiver.

The cabinet is designed to match the RME-45 communications receiver, both in streamlined appearance and in two tone gray and black crinkle finish.

Dimensions are as follows: 11" high, 12" wide, 11" deep, with hinged lid. Standard operation is for 115 volt, 50-60 cycle power source.

Complete with tubes, interconnecting plug and cord. **CODE: HAMPY,** f.o.b. Peoria, Illinois, Net Selling Price **\$86.60.**

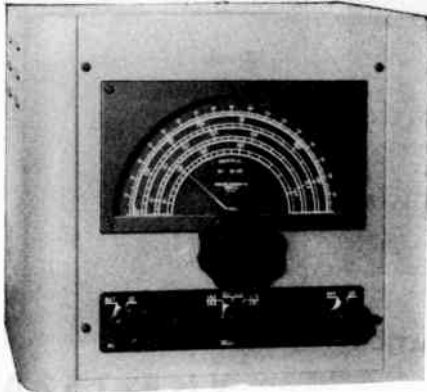
SINCE  
1933



RME

FINE COMMUNICATIONS EQUIPMENT

RADIO MFG. ENGINEERS, INC.  
Provia 6, Illinois U. S. A.

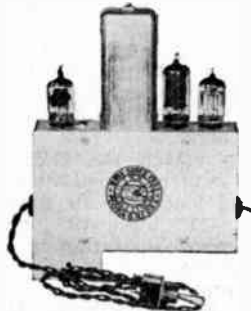


**THE HF 10-20 CONVERTER**  
For 10-11-15 and 20 Meters

Because of the double conversion system, the HF 10-20 provides outstanding and imageless reception on 10-11-15 and 20 meters. And it's an especially vital adjunct to those receivers that tune only up to 18 mc. or possess inadequate bandspread. The HF 10-20 provides an average of 7.8 linear inches of calibrated bandspread on each of the three bands. Images are non-existent. The output (I. F. frequency) of the HF 10-20 is 7 mc. It can be used with any all-wave or amateur receiver. Features include provision for separate antennae, self-contained power supply, antenna selector switch, band selector and high gain. The increase in gain, depending on the receiver and receiving conditions, is approximately 30 DB over the entire range of frequencies covered. Tubes used are a 6BA6 RF amplifier and a 6J6 twin triode mixer. Built-in power supply uses a 5Y3GT rectifier and a VR150 voltage regulator. Model HF 10-20 Converter, Standard Model, CODE HORN, in cabinet to match RME 45 Receiver in appearance. Dimensions: 11" high, 12" wide, 11" deep. Amateur Net Price.....\$77.00 Model HF 10-20 Type "S" Converter, CODE HILL, in cabinet to match RME 84 in appearance. Dimensions: 9 1/8" high, 10 1/4" wide, 10 1/4" deep. Amateur Net Price.....\$77.00

**THE NEW RATIO DETECTOR (NBF4)**  
For Optimum Narrow Band FM Performance

With this plug-in unit and an RME 45 receiver, the noise reducing advantages of NFM are fully realized. NFM Signals that can't be heard with good AM communications receivers come in loud and clear against a noiseless background.



Amateur Net Price.....\$19.50

Equal sensitivity can be enjoyed on AM or NFM. It employs a highly efficient ratio-type detector and a limiter for noiseless reception of NFM signals. Only RME 45 receivers can employ the unit.



**THE DB22A PRESELECTOR**  
Coverage .54 to 44 Mc. — Average Gain 30 DB

Here's the new DB22A completely redesigned for greater efficiency and higher signal to noise ratio. It uses new 6BA6 miniatures. Image ratio is better than 50 DB with a communications receiver having a single stage of RF. It's calibrated, has smooth planetary tuning, self contained power supply, antenna by-pass switch, gain control and many other features. Model DB22A Preselector, Standard Model, CODE BONET, in cabinet to match RME 45 Receiver in appearance. Dimensions: 11" high, 12" wide, 11" deep. Amateur Net Price.....\$71.00 Model DB22A—Type "S" Preselector, CODE CLEAR, in cabinet to match RME 84 Receiver in appearance. Dimensions: 9 1/8" high, 10 1/4" wide, 10 1/4" deep. Amateur Net Price.....\$71.00

**THE BOOMERANG (MB-3)**  
A Break-In & Monitoring Device for CW & Fone

The "Boomerang" is the solution to rapid and efficient break-in, and the avoidance of needless QRM. Dots and dashes are heard in the headphones or the speaker while sending—a great help in perfecting the fist and avoiding errors.

When the key is down, any signal normally going through the receiver is automatically suppressed. Raise the key and instantaneously the receiver functions.

The "Boomerang" can be used as a handy monitor for phone operation, as a code practice oscillator and a tone modulator. Tubes include a 7K7, a 6SL7 and a 6x4 rectifier. Cabinet is two-tone grey finish.



Amateur Net Price.....\$29.50

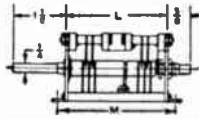
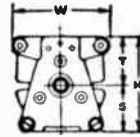
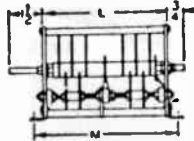
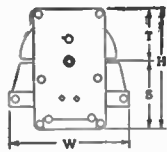


## VARIABLE CONDENSERS

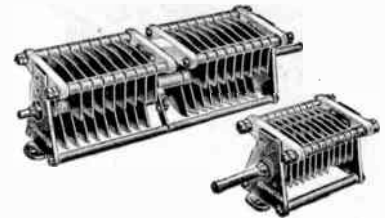
TYPES C AND D



Type C Dual		Type D Single	
Type	T	S	W
C	2 1/8	3 3/8	5 1/2
D	1 3/8	2 5/8	4 1/4



TYPES E AND F



Type E Dual		Type F Single		
Type	T	S	W	H
E	1 1/8	1 3/8	2 5/8	2 1/8
F	1 1/8	1 3/8	2 1/8	2

JOHNSON C and D condensers are sturdily constructed to give trouble-free operation under the most severe service. Only the finest materials are employed yet these units are lower in price than any other quality condensers.

All dual models have center rotor connections, to insure balanced operation at ultra-high frequencies. Heavy laminated phosphor bronze contact springs insure low resistance circuits.

Important features include: Heaviest aluminum plates of any similar condenser, .051" thick—Stearite insulation—Large laminated rotor brushes—Center rotor contacts on all dual condensers—Heavy 5/16" diameter aluminum tie rods for frame strength and rigidity—1/4" cadmium-plated steel shafts.

Supplied with single hole mounting brackets which fit either top or bottom of end plate so that stators may be mounted to top or bottom as preferred.

Panel space, Type C, 5 1/2" wide x 5 3/8" high panel space, Type D, 4 1/4" wide x 4" high.

Mounting (M) dimension, on both C and D Types, 7/8" more than L dimension.

### TYPE C SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
250C70	\$16.50	252	34	24	6 1/2
500C70	23.50	496	56	47	12 1/2
250C90	19.50	245	45	31	12 1/2
350C90	23.00	337	63	43	14 1/2
500C110	11.75	51	19	8	4 1/2
100C110	15.00	103	30	17	8 1/2
250C110	23.25	251	66	41	12 1/2
500C130	13.00	51	24	10	7 1/2
100C130	17.00	102	42	21	13 1/2

### TYPE C DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
200CD45	20.50	204	21	15	8 1/2
300CD45	24.00	290	26	21	10 1/2
200CD70	23.50	198	27	19	12 1/2
300CD70	31.00	305	37	29	16 1/2
150CD90	25.00	147	30	19	14 1/2
200CD90	29.00	196	38	25	18 1/2
50CD110	17.50	50	18	8	10 1/2
65CD110	19.25	66	21	11	12 1/2
100CD110	24.50	103	32	20	16 1/2
50CD130	20.00	51	24	10	14 1/2

### TYPE D SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
50D35	8.00	49	12	5	2 1/2
100D35	8.75	99	14	8	2 1/2
150D35	9.75	151	18	12	4 1/2
250D35	11.25	252	24	20	4 1/2
350D35	12.50	343	27	27	5 1/2
500D35	14.75	496	36	39	6 1/2
100D45	9.50	104	19	12	4 1/2
150D45	11.00	146	23	17	4 1/2
50D70	8.75	51	17	7	2 1/2
70D70	9.75	72	18	11	4 1/2
100D70	10.75	98	23	15	4 1/2
150D70	12.50	151	31	23	6 1/2
250D70	15.50	244	45	37	10 1/2
350D70	19.00	351	62	53	13 1/2
50D90	10.00	53	20	10	4 1/2
70D90	11.00	73	25	14	5 1/2
100D90	12.00	99	30	19	7 1/2
150D90	14.25	149	43	29	10 1/2
250D90	18.75	249	68	49	15 1/2

### TYPE D DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
100DD35	11.75	95	13	8	4 1/2
150DD35	13.25	147	15	12	5 1/2
200DD35	15.75	202	19	16	7 1/2
300DD35	18.75	291	24	23	9 1/2
500DD35	25.50	496	38	39	13 1/2
150DD45	16.25	155	24	18	9 1/2
200DD45	18.50	198	27	23	12 1/2
50DD70	12.50	52	15	8	5 1/2
70DD70	14.25	72	17	11	7 1/2
100DD70	16.00	97	22	15	9 1/2
150DD70	20.75	151	31	23	13 1/2
200DD70	23.75	199	39	30	16 1/2
50DD90	14.50	52	19	10	9 1/2
100DD90	19.50	97	30	19	14 1/2

### TYPE E SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
250E20	\$ 6.20	244	12	.045"	23
350E20	7.00	353	15	.045"	33
500E20	8.10	488	19	.045"	45
35E30	4.75	39	8	.075"	6
50E30	4.95	52	9	.075"	8
70E30	5.25	73	9	.075"	11
100E30	5.60	100	11	.075"	15
150E30	6.30	154	14	.075"	23
250E30	7.50	251	20	.075"	37
350E30	8.90	347	25	.075"	51
35E45	5.15	38	9	.125"	9
50E45	5.50	53	11	.125"	12
70E45	5.85	74	13	.125"	17
100E45	6.35	101	16	.125"	23
150E45	7.35	145	20	.125"	33
250E45	9.35	241	32	.125"	55

### TYPE E DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
200ED20	9.60	200	10	.045"	19
300ED20	11.20	312	13	.045"	29
50ED30	7.85	52	8	.075"	8
70ED30	8.35	72	8	.075"	11
100ED30	9.15	99	10	.075"	15
150ED30	10.50	153	13	.075"	23
200ED30	11.75	196	15	.075"	29
50ED45	8.35	52	10	.125"	12
70ED45	9.40	74	12	.125"	17
100ED45	10.85	100	15	.125"	23

### TYPE F SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
35F20	4.50	35	7	.045"	6
50F20	4.70	54	8	.045"	9
70F20	4.90	66	8	.045"	11
100F20	5.35	106	10	.045"	17
150F20	6.05	154	12	.045"	25
250F20	7.25	252	17	.045"	41
35F30	4.80	36	8	.075"	9
50F30	5.10	52	9	.075"	13
70F30	5.45	67	11	.075"	17
100F30	6.10	99	14	.075"	25
150F30	7.15	148	18	.075"	37

### TYPE F DUAL SECTION

Cat. No.	List Price	Cap. per Sect.		Plates Per Sect.	L
		Max.	Min.		
50FD20	7.65	53	7	.045"	9
70FD20	8.15	66	7	.045"	11
100FD20	8.95	104	9	.045"	17
150FD20	10.30	153	11	.045"	25
200FD20	11.55	202	14	.045"	33
50FD30	8.30	51	8	.075"	13
70FD30	9.30	66	10	.075"	17
100FD30	10.75	99	13	.075"	25

### DEPARTURES FROM STANDARD

Special plate spacings, capacities, shaft extensions, insulation, mounting brackets, terminals, etc., can be furnished to specifications for commercial applications.

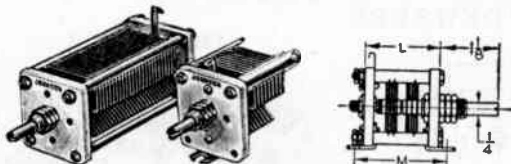
### CONDENSERS FOR HIGHER VOLTAGES

The JOHNSON line includes heavy duty pressurized or air dielectric fixed and variable condensers for high voltage commercial applications. Data sheets furnished on request.





## TYPE H CONDENSER



Two End Plates Single End Plate

The Type H condenser was designed for aircraft transmitters and combines a minimum of weight and size with simple but rugged construction. Capacities and spacings are provided for low and medium power stages. Use of steatite for end plates avoids any possibility of "short circuit loops" and permits panel mounting with both rotor and stator insulated from ground. Has aluminum plates .020" thick. End plate 1 1/2" square. Capacity measurements are taken with condenser in position shown above.

Mounting (M) dimension is 1/4" more than the L dimension.

### TYPE H SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Plates Per Sec.	L
		Max.	Min.			
<b>Single End Plate</b>						
25H15	\$2.70	25	4	.030"	6	1 1/2
35H15	2.80	35	4	.030"	8	1 3/8
50H15	2.95	49	4	.030"	11	1 5/8
70H15	3.20	69	6	.030"	15	1 7/8
100H15	3.50	97	7	.030"	21	2 1/8
<b>Double End Plate</b>						
150H15	5.00	146	9	.030"	31	2 3/8
250H15	6.60	242	13	.030"	51	3 1/8
25H30	4.10	28	7	.080"	13	2 1/8
35H30	4.50	37	8	.080"	17	2 1/4
50H30	5.05	54	11	.080"	25	3 1/8
70H30	5.75	74	13	.080"	35	4 1/8
<b>DUAL SECTION</b>						
35HD15	4.70	31	6	.030"	7	1 1/2
50HD15	5.05	51	7	.030"	11	2 1/8
70HD15	5.55	71	8	.030"	15	2 3/8
100HD15	6.25	99	10	.030"	21	3 1/8
35HD30	6.05	38	12	.080"	17	4 1/8
50HD30	7.15	55	15	.080"	25	6

### MINIATURE AIR VARIABLE CONDENSERS



The smallest air variables ever built. A necessity in all types of high frequency equipment. Available in single, differential and butterfly types. Single hole mounting, flats on mounting bushing to prevent turning. Split sleeve rotor bearings—no shaft wobble. Steatite end frames.

Cat. No.	List Price	Capacity		Plates Per Sec.	L
		Max.	Min.		
<b>Single</b>					
5M11	\$1.45	5.0	1.5	5	1 1/4
9M11	1.55	8.6	1.8	9	1 1/2
15M11	1.75	14.2	2.3	15	1 3/4
20M11	2.00	19.6	2.7	21	1 7/8
<b>Differential</b>					
6MA11	\$2.10	5.0	1.5	5	1 1/4
9MA11	2.30	8.6	1.8	9	1 1/2
15MA11	2.60	14.2	2.3	15	1 3/4
19MA11	3.00	19.6	2.7	21	1 7/8
<b>Butterfly</b>					
3MB11	\$2.10	3.2	1.5	5	1 1/4
5MB11	2.30	5.1	1.8	9	1 1/2
9MB11	2.60	8.0	2.3	15	1 3/4
11MB11	2.90	10.8	2.7	21	1 7/8

L: Length Behind Panel

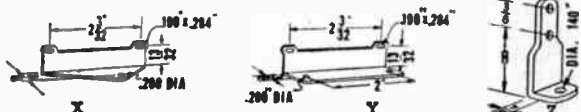
Voltage breakdown is 1250 V. peak. Nickel-plated finish.

Panel mounting space is 3/4" by 3/4". Mounting hole 1/4". Slotted for screw driver adjustment. Has 1/8" shaft.

Improved terminal provides dual low inductance path to both stator supports, eliminates possibility of loosening plates when soldering, avoids binding stresses on stator supports caused by wiring.

See knob page for 116-214-2 knob for these condensers.

### MOUNTING BRACKETS FOR C, D, E AND F CONDENSERS



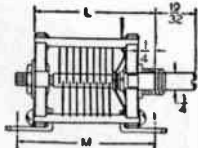
Convenient for mounting other components above condensers, or for general use.

Cat. No.	List Price	Fig.	H	Used on
115-100	\$0.15	X	1 1/2"	C or D Cond.
115-101	.15	Y	1 1/2"	C or D Cond.
115-102	.10	Z	1 1/2"	F Cond.
115-103	.10	Z	1 1/2"	E Cond.

## NEW JOHNSON TYPE L VARIABLES (167 Series)

Ceramic Soldered for Stability, Strength

With the introduction of this new line of air variables, JOHNSON brings many important design advantages never before available.



Outstanding feature of these is the use of perfected ceramic soldering which assures absolute—and permanent—rigidity and strength, absolute—and permanent—maintenance of capacities!

There are no eyelets, nuts or screws to work loose, causing stator wobble and fluctuations in capacity. JOHNSON ceramic soldering leaves a bond which is stronger than the rugged steatite end plates themselves. There's nothing to come loose, because the stator terminals, mounting posts and rotor bearings are ceramic soldered!

Silent operation on the highest frequencies is assured with a split sleeve tension bearing that also prevents fluctuations in capacity.

These new variables are ideal for peak efficiency even under the severest conditions, such as portable—mobile operation.

Two sets of stator contacts are provided for connecting components to either side of condenser without appreciably increasing inductance of the circuit. New bright alloy plating is used. It has high corrosion resistance and possesses lower electrical resistance than other common platings.

End plates are ceramic, 1 3/8" square with 2 mounting posts tapped for 6-32 screws on 1 1/8" centers.

Mounting (M) dimension is 1/4" more than the L dimension. Other capacities and spacings available on special order.

### TYPE L SINGLE SECTION

Cat. No.	List Price	Cap. per Sect.		Spacing	Plates Per Sec.	L
		Max.	Min.			
<b>Single End Plate</b>						
10L15	\$2.40	11	2.8	.030"	3	1 1/2
25L15	2.55	27	3.5	.030"	7	1 3/4
50L15	2.80	51	4.6	.030"	13	1 7/8
75L15	3.00	75	5.7	.030"	19	1 3/4
<b>Double End Plate</b>						
100L15	4.85	99	6.8	.030"	25	2 1/8
200L15	6.10	202	11.6	.030"	51	3 1/8
<b>Dual Section</b>						
25LD15	4.70	27	3.5	.030"	7	1 1/2
50LD15	5.45	51	4.6	.030"	13	2 1/8
100LD15	6.55	99	6.8	.030"	25	3 1/8
<b>Differential</b>						
10LA15	2.90	11	2.8	.030"	3	1 1/2
25LA15	3.10	27	3.5	.030"	7	1 3/4
50LA15	3.50	51	4.6	.030"	13	1 7/8
<b>Butterfly</b>						
10LB15	3.35	10.5	2.8	.030"	5	1 1/2
25LB15	3.80	26	4.3	.030"	12	1 3/4
50LB15	4.40	51	6.8	.030"	23	1 7/8

\*.020, .060, .080 spacing also available.

### TYPE J CONDENSER



The Type J condenser is a midget with big condenser characteristics. It has wider spacing than most small types, yet occupies little more space and is ideal for oscillator and low power stages. The spacing is .025" and universal type mounting brackets make possible a variety of mountings including chassis, panel, or inside tube socket type inductors. Steatite end plate is 1 1/8" wide.

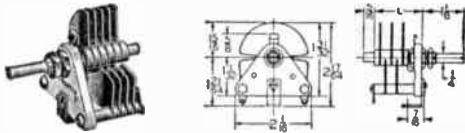
Cat. No.	List Price	Cap. per Sect.		Spacing	Plates Per Sec.	L
		Max.	Min.			
7J12	\$1.95	8	2.6	.025"	3	1 1/2
15J12	2.10	17	3.3	.025"	6	1 3/4
25J12	2.30	29	3.6	.025"	10	1 7/8
50J12	2.70	52	4.9	.025"	19	1 3/4
75J12	3.15	73	6	.025"	26	1 7/8
100J12	3.75	102	7	.025"	36	1 3/4

### EXPLANATION OF CATALOG NUMBERS

The first part of the catalog number indicates the capacity per section in mmfd. The following letter indicates the frame size or type. A second letter D indicates a two-section type. The final number multiplied by 100 is the approx. peak breakdown voltage.



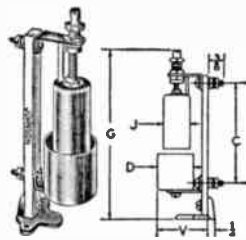
## TYPE G CONDENSER



The Type G condenser is extremely popular as a neutralizing condenser for medium and low power stages. It is also widely used for grid and plate tuning at high and ultra-high frequencies. A wide range of capacities and spacing make it adaptable to many applications. It has a single end plate of steatite and low minimum capacity. .032" rounded aluminum plates, universal mounting bracket, locking nut, and front and rear shaft extensions are among the outstanding features.

Cat. No.	List Price	Cap. per Sect.		Spacing	Number Plates	L
		Max.	Min.			
25C20	\$3.40	27	4	.045"	5	1 1/8"
50C20	3.75	52	5	.045"	9	1 3/8"
8G45	3.25	7.7	3.6	.125"	3	1 1/8"
13G45	3.45	13	4.7	.125"	5	1 1/8"
23G45	3.75	23	6.4	.125"	9	1 3/8"
6C70	3.75	5.7	3.5	.225"	3	1 1/8"
12G70	4.25	12	6	.225"	7	2 3/8"

## TYPE N CONDENSER



Small mounting space requirements, extremely high voltage rating in proportion to size, fine adjustment with uniform voltage breakdown rating throughout the full capacity range, and low cost, make these neutralizing condensers ideal for the modern transmitter. "Plates" are aluminum cups supported on a steatite frame with cast aluminum mounting bracket. Because of the design these condensers will withstand much higher voltage than conventional flat plate condensers of the same

spacing. The N375 has been improved and now features a bushing for the guide shaft for greater stability and a beaded lower cup for high voltage rating. Peak R.F. Breakdown Ratings at 2 Mc.; N125 8,500, N250 11,500, N375 14,500.

Cat. No.	List Price	Capacity		D	C	G	V	Spacing
		Max.	Min.					
N125	\$6.50	11.0	1.1	1 1/8"	3 1/8"	6 1/8"	1 1/2"	.125"
N250	7.50	10.6	1.4	1 1/8"	3 3/8"	7 1/8"	2 1/2"	.250"
N375	9.50	10.7	1.7	2 3/8"	5 1/8"	8 1/8"	2 1/4"	.375"

## TINNED COPPER SOLDERING TERMINALS



Terminals illustrated in the Order Listed

Available in ten sizes, JOHNSON soldering terminals meet the requirements of most applications. Composed of copper for low resistance, they are tinned to permit easy soldering.

Cat. No.	List Price Per C	Size Hole	Length
110-880	\$0.40	6-32	1 1/8"
110-881	.75	1/4"	1 1/8"
110-882	1.50	3/8"	1 1/8"
110-883	2.75	10-32	1 1/8"
110-884	2.75	10-32	1 1/8"
110-885	4.00	1/4"	1 1/8"
110-887	2.75	1/4"	1 1/8"
110-888	2.75	1/4"	1 1/8"
110-889	4.25	1/4"	1 1/8"
110-890	4.25	1/4"	1 1/8"

## INDUCTOR CLIPS



Clip No. 235-804 is plated phosphor bronze and is designed for making connections to the JOHNSON edgewise wound or similar inductors. No. 235-860 will take wire from No. 20 to No. 10 without danger of tilting and shorting adjacent turns.



Cat. No.	List Price	Type
235-804	\$0.30	LC4
235-860	.15	860

## FUSE CLIP



115-840

This cadmium plated phosphor bronze clip provides sure grip for 1/8" diameter fuse or resistor. Mounts with No. 8 screw.

Cat. No.	List Price
115-840	\$0.03
110-112	.07

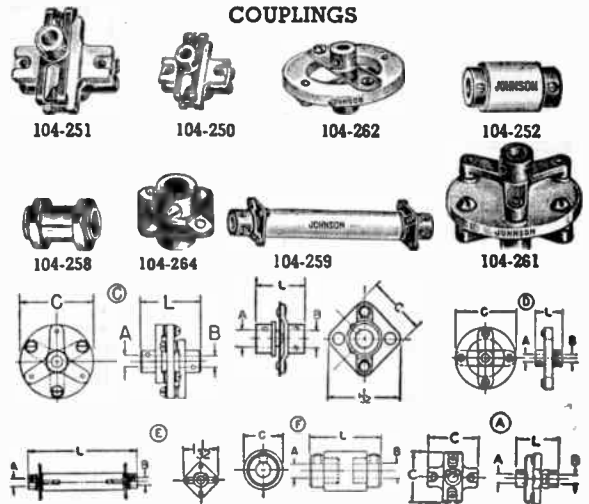
## SCREW TERMINAL

A convenient and substantial clip for use as antenna and ground connections and power terminals. Furnished complete with 2 screws.



110-112

## COUPLINGS



All JOHNSON insulated shaft couplings are characterized by best steatite insulation properly proportioned for electrical and mechanical strength, by accurate metal parts heavily plated, by advanced design, and by skillful manufacture.

The phosphor bronze springs of the -250 and -251 series couplings provide flexibility without backlash and adjust to minor shaft misalignments. Rigid types -252, -262 and -261 meet the requirements of accurate shaft alignment and high torque.

The -259 and -2593 are bar type couplings recommended for high voltages or very high frequencies.

The -264 is a small bakelite insulated flexible coupling for DC or low voltage RF applications.

Cat. No.	List Price	Modulated Dim. Peak Volt. Dwg.	C	Dimension L	A	B
104-250	\$1.00	4000	A	1 1/8"	1/4"	1/4"
104-2503	1.10	4000	A	1 1/8"	1/4"	3/8"
104-251	1.40	5000	A	2 1/8"	1/4"	3/8"
104-251A	1.40	5000	A	2 1/8"	1/4"	3/8"
104-251B	1.40	5000	A	2 1/8"	1/4"	3/8"
104-252	.90	1000	F	1 1/4"	1/4"	1/4"
104-258	.35			1/2"	1/4"	1/4"
104-259	1.50	8000	E	3 3/8"	1/4"	1/4"
104-2593	1.45	5000	E	2 3/8"	1/4"	1/4"
104-261	4.25	7500	C	2 1/2"	3/8"	3/8"
104-262	.85	5000	D	2"	1/4"	1/4"
104-264	.60	400	B	1 3/8"	1/4"	1/4"

## PANEL BEARINGS

Nickel plated brass for 1/4" shaft and up to 3/8" panels. Also with 3" and 6" nickel-plated brass shafts.



115-255, 256, 2562

Cat. No.	List Price
115-255	\$0.20
115-256	.40
115-2562	.60

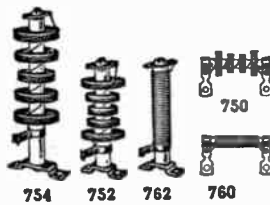
## FLEXIBLE SHAFTS

Phosphor bronze, non-rusting with 1/4" hubs. Permit out of line or up to 90 degree angular control.

115-253, 254

Cat. No.	List Price
115-253	\$0.50
115-254	.70

## RADIO FREQUENCY CHOKES



Cat. No.	List Price	Frequency	Current	Induct. (1 mc.)	Ohms DC	Length
102-750	\$1.75	1.7 to 30 mc.	150 ma	.83 mh	15	1 1/2"
102-752	2.50	1.7 to 30 mc.	500 ma	1.0 mh	5.2	2 3/8"
102-754	3.00	1.7 to 30 mc.	750 ma	1.9 mh	4	4 1/8"
101-760	.60	Ultra-high	250 ma	6.8 mh	.23	1 1/2"
101-762	1.15	Ultra-high	1.5 a	19 mh	.30	2 3/8"

JOHNSON R.F. chokes have high reactance over the range for which they are designed. Coils are of enamelled silk-covered wire of impregnated with high grade R.F. lacquer and are wound on steatite cores. Current ratings may be increased for intermittent use.



## NEW JOHNSON AIR-WOUND HAM INDUCTORS

**A Coil to Match Your Tube —  
A Link to Match Your Line**

With these new JOHNSON Ham Inductors and "plug-in" Swinging Link Assemblies the amateur can instantly match coil to tube — link to line.

### Heavier Windings on All Models

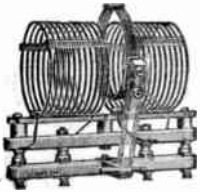
Efficiency is further increased because coil windings are a wire-size larger than on most available inductors — resulting in less heating, lower loss and consequently higher efficiency.

The new JOHNSON Inductors and "plug-in" Link Assemblies fit all conventional inductor assemblies.

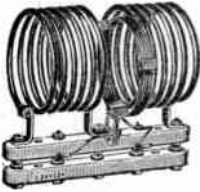
**HCS**—Inductors match high voltage, low current tubes — swinging link type.  
**LCS**—Inductors match low voltage, high current tubes — swinging link type.  
**HCF**—Inductors match high voltage, low current tubes — semi-fixed link.  
**LCF**—Inductors match low voltage, high current tubes — semi-fixed link.

### Dimensions

Height is the height from the bottom of the plug bar. Width is the outside diameter across the winding.



Inductor 1000HCS40  
Link 1000SL5



Inductor 500HCF20  
Link 150/500FL5



Inductor 150H/LCS14  
Link 150/500SL5



Jack Bar 1000JBS with  
1000SLA Arm Assembly  
and 1000SL5 Link



Jack Bars  
1000JBS, 500JBS, 150JBS

### SWINGING LINK INDUCTORS

Catalog Number	List Price
1000HCS160	\$11.50
1000LCS160	11.50
1000HCS80	10.25
1000LCS80	10.25
1000HCS40	9.25
1000LCS40	9.25
1000HCS20	8.50
1000LCS20	8.50
1000H/LCS14	8.00
1000H/LCS10	7.50
500HCS160	6.25
500LCS160	6.25
500HCS80	5.75
500LCS80	5.75
500HCS40	5.25
500LCS40	5.25
500HCS20	4.50
500LCS20	4.50
500H/LCS14	3.50
500H/LCS10	3.25
500H/LCS8	3.25
150HCS160	5.50
150LCS160	5.50
150HCS80	5.00
150LCS80	5.00
150HCS40	4.50
150LCS40	4.50
150HCS20	4.00
150LCS20	4.00
150H/LCS14	3.25
150H/LCS10	3.00
150H/LCS6	3.00

### SEMI-FIXED LINK INDUCTORS

Catalog Number	List Price
1000HCF80	\$8.90
1000LCF80	8.90
1000HCF40	8.90
1000LCF40	8.90
1000HCF20	8.50
1000LCF20	8.15
1000H/LCF14	7.65
1000H/LCF10	7.15
500HCF80	5.60
500LCF80	5.60
500HCF40	5.10
500LCF40	5.10
500HCF20	4.35
500LCF20	4.35
500H/LCF14	3.35
500H/LCF10	3.10
500H/LCF6	2.10
150HCF80	4.85
150LCF80	4.85
150HCF40	4.35
150LCF40	4.35
150HCF20	3.85
150LCF20	3.85
150H/LCF14	3.10
150H/LCF10	2.85
150H/LCF6	2.85

\*Total circuit capacity required to effect resonance at low frequency end of band. Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.  
\*\*.250 diameter copper tubing.

### JACK BAR ASSEMBLIES

Cat. No.	Description	List Price
150JBS	150 W. 3 3/4" x 3/8" x 3/8"	\$1.45
500JBS	500 W. 5 3/4" x 3/8" x 3/8"	2.00
1000JBS	1000 W. 7 1/2" x 7/8" x 1/2"	3.00

### SWINGING LINK ARM ASSEMBLIES

Cat. No.	Description	List Price
150/500SLA	Arm Assembly for 150/500 Watt Inductors	\$1.70
1000SLA	Arm Assembly for 1000 Watt Inductors	2.10

### BRACKETS

Cat. No.	Description	List Price
150/500FLB	150/500 Watt Bracket for Semi-Fixed Link Inductor	\$0.45
1000FLB	1000 Watt Bracket for Semi-Fixed Link Inductor	.80

### "PLUG-IN" LINKS

Cat. No.	No. Turns	List Price
150/500SL12	12	\$3.00
150/500SL5	5	1.90
150/500SL2	2	1.60
1000SL10	10	3.10
1000SL5	5	2.40
1000SL2	2	1.80

### SEMI-FIXED LINKS

Cat. No.	No. Turns	List Price
150/500FL12	12	\$2.20
150/500FL5	5	1.40
150/500FL2	2	1.20
1000FL10	10	2.10
1000FL5	5	1.60
1000FL2	2	1.30

## NEW JOHNSON FARADAY SHIELD

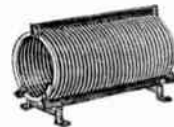


Illustrated above is JOHNSON 500HCS40 inductor, 238-172 jack bar, and 238-179 arm with 238-303 shield, hood, and lead assembly installed.

JOHNSON Faraday shields will reduce TVI caused by capacitive coupling. Designed for JOHNSON plug-in links, they are equally effective and easily installed on other links including non-plug-in types. The screen itself is a metallic plating on polystyrene sheets and is attached to the link with polystyrene cement. Grounded hood and copper braid effectively complete the shielding. Link impedance is relatively unchanged and plug-in link flexibility unimpaired. Made in two sizes and offered as the Faraday shield only or as a complete assembly.

Cat. No.	Description	List Price
238-303	150/500 watt swinging link shield, hood, and lead assembly	\$3.75
238-304	1800 watt swinging link shield, hood, and lead assembly	4.25
238-301	150/500 watt link shield, only	1.85
238-302	1000 watt link shield, only (link, coil, jack bar, and arm not included)	2.10

## EDGEWISE WOUND "HI-Q" INDUCTORS



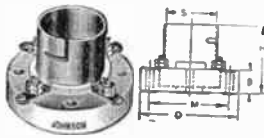
Edgewise wound, 1/4" copper strip, "bright alloy" plated, and Mycalex supporting insulation are the distinguishing features of these inductors.

Widely used commercially, they will safely handle more than 1000 watts in continuous service. Write for information on other types for industrial and broadcast applications.

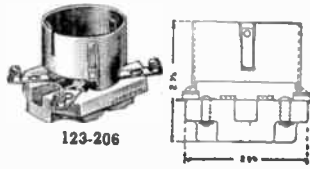
Cat. No.	List Price	Inductance μh	Winding L x ID
232-610	\$11.60	31	7 1/8" x 2 1/2"
232-611	7.90	13	4 1/8" x 2 1/2"
232-619	7.35	19	3 1/8" x 4"
232-620	15.10	84	8 1/8" x 4"
232-622	6.10	41	6 1/8" x 3 1/4"
232-623	9.10	8	2 1/8" x 3 1/4"
232-624	7.75	10	6 1/8" x 2 1/2"
232-626	5.25	2.8	4 3/4" x 2 1/2"
232-627	8.75	4.4	4 3/8" x 2 1/2"



## TUBE SOCKETS



123-209  
-210, -211, -216



123-206

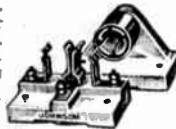
No. 123-206 Industrial bayonet socket with rugged metal shell for extremely high voltage applications. Will accommodate 8008, 5C22, FG104, GL146 and other tubes with similar bases. Has steatite insulation, silver plated beryllium copper contacts, screw terminals and three heavy springs in shell insure tube being held securely in place. No. -209 has 4 mtg. holes, -206, -210, -211, -216 have 2. Nos. -209, -210, -211 and -216 all have heavy phosphor bronze, side wiping type contacts, metal shells and white, glazed porcelain bases. No. -209 is similar to No. -210, but provides greater spacing between contacts and shell, for higher voltages. No. -211, the standard "50-watt" socket, has double filament contacts for carrying heavy currents. No. -216 is for tubes having a GIANT 5-pin bayonet base such as the 803, RK28, etc. Suffix letters "SB" indicate beryllium copper contacts and steatite bases.

Cat. No.	List Price	D	H	M	S	Pins	Tube Base
123-206	\$3.00	2 5/8 x 3 7/8	2 1/2	2 3/4	2.219	4	Super Jumbo
123-209	1.50	2	1 1/2	2 1/4	1.386	4	Med. Bay.
123-209SB	2.50	2	1 1/2	2 1/4	1.386	4	Med. Bay.
123-210	1.50	2 1/2	1 7/8	2 1/2	1.386	4	Med. Bay.
123-211	1.85	3 3/8	2 1/2	2 1/2	1.886	4	Stand. Jumbo
123-211SB	3.50	3 3/8	2 1/2	2 1/2	1.886	4	Stand. Jumbo
123-216	3.00	3 3/4	2 1/2	3 1/8	2.198	5	Giant Bay.
123-216SB	5.15	3 3/4	2 1/2	3 1/8	2.198	5	Giant Bay.



124-213

No. -213 takes Eimac 152TL and 304TL. Contacts for either series or parallel filaments. No. -214 takes Eimac 1500TH. Has air jet tube for cooling filament tube seals. No. -215 is for "250 watt" tubes such as 204A, 849, etc. The plate terminal has a "safety cup" which prevents accidental dislodgement.



124-215



124-214

Cat. No.	List Price	Base
124-213	\$2.00	"Eimac"
124-214	2.75	"Eimac"
124-215	4.25	"250 Watt"



120-277B

Cat. No.	Description	List Price
120-267	Miniature socket, all ceramic	\$0.50
120-277B	Miniature socket with shield base	.75
133-277S	Miniature socket, shield base only	.15
133-278A	1 3/8" shield for 277 B or S	.22
133-278B	1 3/8" shield for 277 B or S	.25
133-278C	2 1/4" shield for 277 B or S	.40



120-267

The -265 was designed for "acorn" tubes. Contacts silver-plated beryllium copper, base grade L-4 Steatite

Cat. No.	List Price	Mtg. Cen.
121-265	\$1.10	1 1/2



124-212

The No. -212 socket for RCA833 or 833A. Base of steatite. Filament clamps incorporate "springs" which minimize strains on the glass tube seals and prevent breakage. Plate leads include laminated phosphor bronze strips for flexibility. Regularly supplied with 5/16" plate leads. Other lengths available on special order.

Cat. No. 124-212	List Price \$10.00
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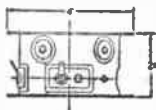


122-234

No. -234 for Western Electric 5D21, 705A, 715A, 715B includes heavy steatite base and special locking device for retaining tube in socket.

Cat. No. 122-234	List Price \$3.00
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The 122-102 is designed for Eimac 4X-500A tube. Terminals arranged to provide bypass capacity to ground through the insulation. Mounting holes are provided for adding by-pass condensers for additional capacity.



122-102

Cat. No.	List Price
122-102	\$18.00

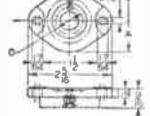
## WAFER SOCKETS

JOHNSON wafer sockets are insulated with grade L 4 steatite or better, top and sides glazed, underside impregnated in conformance with latest Army Navy specifications. Contacts are brass with steel spring, cadmium plated and are mounted against phenolic washers in molded recesses to prevent movement. Rivets are countersunk and mounting holes bossed to permit sub-panel mounting. Locating grooves facilitate tube insertion.

Cat. No.	List Price	Pin
122-217	\$0.75	7-pin small
122-224	.60	4-pin
122-225	.65	5-pin
122-226	.70	6-pin
122-227	.75	7-pin med.
122-228	.80	Octal



122-217, -224, -225, -226, -227, -228



122-237

No. -237 is a 7-pin large steatite wafer socket for transmitting tubes having a GIANT 7-pin base such as the HK257, and RCA 813.

No. -247 is a 7-pin steatite wafer socket for transmitting tubes such as the 826. It is furnished with etched aluminum base shield.

The 122-244 is a 4-pin wafer socket of steatite insulation, for transmitting tubes having a Super Jumbo base such as the 8008. Brass clip contacts and reinforcing steel springs are cadmium-plated and designed for high currents. Mounting holes 1 7/8" between centers.

Cat. No.	List Price	Dimension L
122-237	\$1.10	2 5/8
122-244	2.00	2 5/8
122-247	1.25	2 5/8



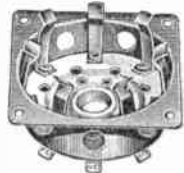
122-247

The 122-101 is a 7-pin steatite wafer socket incorporating a base shield, retainer springs and provision for mounting button mica capacitors directly to the socket. Socket is specially designed for UHF use with tubes such as the 826, 829, 832, 4D32, and 4D22. Contacts silver plated and recessed to prevent movement. Grid terminals are designed so connecting wires may be isolated from other circuits and permit small grid coils to be mounted on the terminal ends. Mounting holes 2.312 inches between centers.

Cat. No. 122-101	List Price \$3.00
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122-244



122-101

The 122-275 is a 5-pin steatite wafer socket for transmitting tubes having a GIANT 5-pin base such as the 4-125A and RK48. Contacts are designed for high currents. Adequate ventilation for tubes is provided by five 1/4" holes between contacts. Mounting holes 2 1/4" between centers.

Cat. No. 122-275	List Price \$1.75
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122-275

## TUBE CAP CONNECTORS



119-838  
119-839  
119-840  
119-841



119-843



119-852  
119-854



119-850  
119-851

Cat. No.	List Price	Tube Cap Dia.
119-838	\$1.35	.375
119-839	1.40	.437
119-840	1.50	.567
119-841	1.75	.676
119-843	1.50	.567
119-846	.35	.125
119-848	.16	.070
119-849	.12	.048
119-850	1.80 C	.250
119-851	1.80 C	.360
119-852	.06	.360
119-854	.12	.566

115-838 Scanner wrench for use with Nos. 119-838 through -841. List Price \$1.25



## MULTIPLE WIRE CONNECTORS

JOHNSON cable connectors provide a most efficient means of quickly connecting or disconnecting multiple electrical circuits in low-voltage control, audio and instrument service. Contacts accommodate No. 16 stranded wire, or No. 14 solid. Minimum surface creepage path for 12 contact types  $\frac{1}{8}$ " for 7 contact types  $\frac{3}{16}$ ". Body material of molded black bakelite, back shells are brass dull black finished, shell liners are fibre. Plug and receptacle polarized for quick accurate insertion. The cadmium plated steel mounting yokes fit standard switch boxes and cover plates and are supplied with necessary hardware.

The multiple wire connectors, tip plugs and jacks appearing on this page are former Mallory-Yaxley products.



Catalog Number	List Price	No. of Contacts	Connector Type
111-614	\$2.00	12	Chassis
111-615	2.30	12	Cord
111-644	1.00	7	Chassis
111-645	1.25	7	Cord

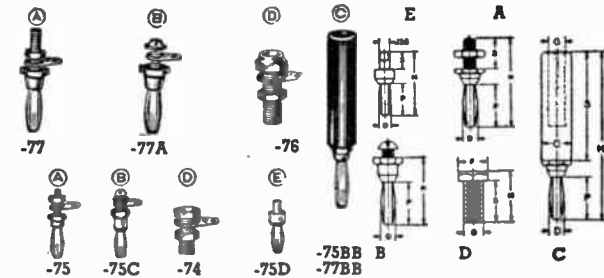
Catalog Number	List Price	No. of Contacts	Connector Type
111-617	2.10	12	Chassis
111-625	2.40	12	Cord
111-631	1.45	7	Chassis
111-635	1.70	7	Cord

Catalog Number	List Price	No. of Contacts	Connector Type
111-682	1.60	12	PIN PLATE BRACKET MOUNTED

Catalog Number	List Price	No. of Contacts	Connector Type
111-6002	.25	for 7 wire connectors	MOUNTING YOKE
111-6003	.25	for 12 wire connectors	MOUNTING YOKE



## PLUGS AND JACKS



### "BANANA SPRING" TYPE

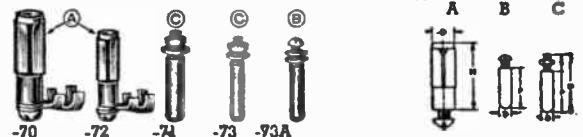
Nickel-silver springs and high grade nickel plated brass screw machine parts with accurate threads and milled nuts. Studs extend full length of springs for added support.

75D is designed for riveting. Spring is beryllium copper. 75BB has  $\frac{1}{8}$ " black plastic handle; 75BR same but red. 77BB has  $\frac{1}{4}$ " black plastic handle; 77BR same but red. 75 or 75A can be furnished with beryllium copper spring on special order, and all plugs can be furnished with nickel, cadmium or silver plating if required.

108-7451 is a red plastic insulated jack similar to the 108-74 and furnished with fibre washers. 108-7452 same but black.

If washers are used for insulated mounting, jack fits  $\frac{1}{8}$ " hole,  $\frac{3}{16}$ " maximum panel thickness.

Cat. No.	List Price	Illus.	Dwg.	S	P	D	H	G	O	Thread
108-75	\$0.12	A		$\frac{3}{16}$	.53	.170	1.115			6-32
108-75A	.13	A		$\frac{3}{16}$	.53	.170	1.490			6-32
108-75BB	.40	C		$\frac{1}{8}$	.53	.170	2.115	.215	$\frac{1}{8}$	6-32
108-75BR	.40	C		$\frac{1}{8}$	.53	.170	2.175	.215	$\frac{1}{8}$	6-32
108-75C	.13	B		$\frac{3}{16}$	.53	.170	.94			6-32
108-75D	.10	E		$\frac{1}{8}$	.40	.155	.81			
108-77	.30	A		$\frac{3}{16}$	.74	.300	1.77			$\frac{1}{4}$ -28
108-77A	.35	B		$\frac{3}{16}$	.74	.300	1.15			10-32
108-77BB	.50	C		$\frac{1}{4}$	.74	.300	2.90			
108-77BR	.50	C		$\frac{1}{4}$	.74	.300	2.90			
108-74	.11	D		$\frac{3}{16}$						Thread
108-7451	.25	D		$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{5}{16}$	.166		$\frac{1}{4}$ -28
108-7452	.25	D		$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{5}{16}$	.166		$\frac{1}{4}$ -28
108-76	.35	D		$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$1\frac{1}{8}$	.277		$\frac{5}{16}$ -24



### "SPRING SLEEVE" TYPE

These jacks have maximum current carrying capacity, minimum resistance, great mechanical strength, and snug fit. Wiping action of spring on insertion insures good electrical contact. Tension is maintained by phosphor bronze "spring sleeves." Two sizes available. Furnished regularly nickel plated, but cadmium or silver can be supplied on special order.

Cat. No.	List Price	D	S	P	H	Thread
108-71	\$0.25	.375	$\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$\frac{1}{4}$ -28 screw
108-73	.15	.250	$\frac{3}{8}$	$\frac{1}{2}$	$1\frac{1}{8}$	10-32 screw
108-73A	.15	.250	$\frac{3}{8}$	$\frac{1}{2}$	$1\frac{1}{8}$	10-32 tapped
108-70	.50	$\frac{1}{2}$			$1\frac{1}{2}$	$\frac{1}{4}$ -20 screw
108-72	.35	$\frac{3}{8}$			$1\frac{1}{8}$	10-32 screw

## PLASTIC HEAD TIP JACKS

### REMOVABLE ROUND HEAD TIP JACK

Cat. No.	List Price	Color
105-520	\$0.20	Red
105-521	.20	Black
105-522	.20	Dark Green
105-524	.20	Brown
105-525	.20	Light Blue
105-526	.20	Orange
105-527	.20	Yellow
105-528	.20	Light Green
105-529	.20	Dark Blue
105-530	.20	Ivory

Description similar to removable head type except that brass body is molded integral with head, and additional phenolic washer is furnished.  $\frac{1}{8}$ "-40 thread.

105-418 Red List Price \$0.30	105-419 Black List Price \$0.30	105-418
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### INSULATED COMBINATION JACK

Supplied with shoulder bushing, phenolic washer and one piece contact and nut. Maximum chassis thickness  $\frac{1}{8}$ ". Mounts in  $\frac{3}{16}$ " diameter hole. Provides insulated jack for phonetip plugs and No. 75 series "Banana Spring" plugs.

No. 105-420 Red List Price \$0.30	No. 105-421 Black List Price \$0.30
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### METAL HEAD TIP JACKS

#### Large Round Head

Supplied with fibre shoulder bushing, phenolic washer and hex nut. Mounts in  $\frac{1}{2}$ " hole if shoulder bushing is used.  $\frac{1}{4}$ " maximum panel thickness. Contact is phosphor bronze cadmium plated.

105-16 List Price \$0.50
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Headless Tip Jack  
Metal parts brass. Body nickel plated.  $\frac{1}{4}$ "-32" thread.

105-1 Long Solderless Tip Plug	105-1 List Price \$0.10
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#### Small Round Head

$\frac{3}{16}$ "-40" thread. Supplied with fiber bushing to fit  $\frac{3}{16}$ " panel hole.  $\frac{1}{4}$ " maximum panel thickness.

No. 105-416 List Price \$0.20
-------------------------------

#### Small Hex Head

Similar to 105-416 except has hex head and  $\frac{1}{4}$ "-32" thread. Supplied with fiber bushing to fit  $\frac{3}{16}$ " panel hole.

No. 105-417 List Price \$0.15
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Short Solderless Tip Plug



For use with tip jacks Nos. 105-16, and 105-420.

No. 105-15 List Price \$0.20
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No. 105-14 Solderless Tip Plug Long Shaped Point

List Price \$0.22
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### TWIN TIP JACKS

Mounting holes  $\frac{7}{8}$ " centers. Molded black phenolic.

#### SHORTING TYPE TWIN TIP JACKS

Circuit closes automatically when tips are removed.

No. 105-432-Black List Price \$0.60
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For use with tip jacks Nos. 105-416, 105-417, 105-418, and 105-529.

No. 105-415 List Price \$0.18
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Marking

Cat. No. 105-401	\$0.60	Blank
105-402	.60	Speaker
105-403	.60	Phono

No. 105-433-Red List Price \$0.60

No. 105-432-Black List Price \$0.60	No. 105-433-Red List Price \$0.60
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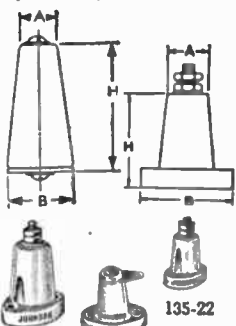
## INSULATORS AND BUSHINGS

JOHNSON insulators were introduced in the early twenties, and soon established the sort of dominance that occurs occasionally when one line offers more in choice of style and size; in advanced but practical design; and in mass production economy than others. This position has been maintained through the years by careful attention to the product, the line, and the needs of the user.

JOHNSON insulators are specifically designed for high frequencies. Insulating materials were selected after exhaustive laboratory tests. Superior grade, low absorption, well glazed electrical porcelain, and Grade L 4 or better steatite are used.

Of the insulators appearing under the headings "Steatite" all but the 500 series and the 135-55 are offered in this finer material for the first time. Their dielectric losses are but a fraction of those for the same parts in porcelain, and they are particularly recommended for high frequency work.

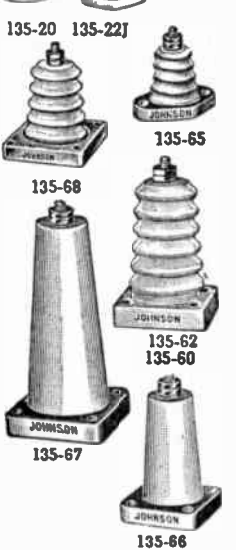
In addition to fine quality insulating materials the JOHNSON line distinguishes itself with perfection of ceramic design; logical proportions; clean-cut, accurate molding; and high grade nickel-plated brass hardware, with milled (not stamped) nuts.



### STAND-OFF AND CONE INSULATORS

The stand-off insulators feature heavy, breakage-resistant bases and adequate "glaze grooves" around mounting screw holes. Numbers 135-65, 135-66, 135-67 and 135-68 have unbreakable, drawn and etched aluminum bases.

The No. 500 cone insulator series are steatite for better high frequency insulation. Threads are tapped directly into the ceramic. Furnished complete with machine screws, brass and cushion washers.



### STAND-OFF INSULATORS

Cat. No.	List Price	Dimensions			Hard-ware	
		A	B	M*	H	
<b>Steatite</b>						
135-20	\$0.22	3/4	1 3/4	1 1/8	1 1/2	10-32
135-20J	.27	3/4	1 3/4	1 1/8	1 1/2	74 Jack
135-22	.18	3/4	1 1/2	1 1/8	1	8-32
135-22J	.23	3/4	1 1/2	1 1/8	1	74 Jack
135-24	.14	3/8	1	1/2	3/8	6-32

<b>Porcelain</b>						
135-60	.90	1 1/2	2 1/2	1 7/8	4 1/2	3/4-20
135-62	.50	7/8	1 7/8	1 3/8	2 3/4	3/4-20

<b>Metal Base Types</b>						
135-65	.30	3/8	1 7/8	1 1/2	1 3/8	10-32
135-65J	.35	3/8	1 7/8	1 1/2	1 3/8	74 Jack
135-66	.70	1 1/4	1 3/4	1 3/8	2 3/4	3/4-20
135-66J	.90	1 1/4	1 3/4	1 3/8	2 3/4	76 Jack
135-67	.85	1 1/8	2 1/4	1 3/4	4 1/2	3/4-20
135-67J	1.10	1 1/8	2 1/4	1 3/4	4 1/2	76 Jack
135-68	.40	3/4	1 3/4	1 3/8	2	10-32
135-68J	.50	3/4	1 3/4	1 3/8	2	74 Jack

\* Mounting centers.

### STEATITE CONE INSULATORS

135-500	.30	1/2	3/8	3/8	6-32
135-501	.35	1/2	3/8	1	8-32
135-502	.85	1/2	1	1 1/2	8-32
135-503	.75	3/8	1 1/8	2	10-32
135-504	1.45	3/4	1 1/2	3	10-32

### METAL BASES

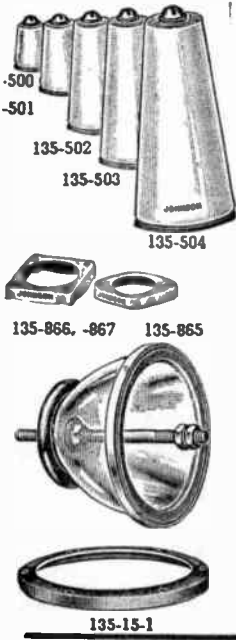
Aluminum bases for replacement on 135-65, -66, -67 and -68 insulators.

Cat. No.	List Price	For Use With
135-865	\$0.12	135-65
135-866	.15	135-66, 135-68
135-867	.20	135-67

### FEED-THRU BOWL

Low loss glass, 6 1/8" O.D., 4 3/8" high. With steel flange 7 3/4" O.D., stud threaded 1/2"-13, spun aluminum shield and cork gaskets. 135-15-1 (illustrated) has 10 1/4" stud; 135-15-3 two bowls with 16" stud for mounting on a 4" wall; 135-15-7 with 24" stud for a 12" wall.

Cat. No.	List Price	
135-15-0	\$9.25	Glass bowl only
135-15-1	17.00	One bowl and fittings
135-15-3	30.00	Two bowls and fittings
135-15-7	31.00	Two bowls and fittings



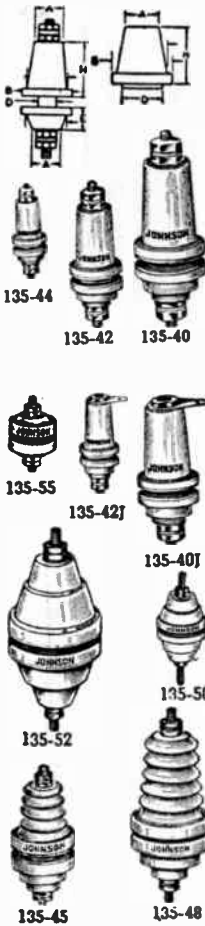
### THRU-PANEL INSULATORS AND BUSHINGS

In the thru-panel and bushing series special attention has been given to obtaining high mechanical strength through heavier construction and at the same time increasing the breakdown voltage. Flat mounting surfaces with cushion washers eliminate breakage. Bottom pieces have long internal and external portions for higher breakdown voltage rating, and grooved surfaces to increase leakage path. Jack types have terminals permitting connection above as well as below the panel.

JOHNSON lead-in bushings are designed to have even greater mechanical strength and long leakage path in proportion to size. Numbers 135-53 and 135-54 are supplied as single porcelain parts including cushion washers.

Nos. 135-50 and 135-55 are steatite and have a special interlocking feature which permits mounting on thin panels without extra spacing washers.

Nos. 20, 20J, 22, 22J and 24 are now also steatite with heavily plated brass hardware.



### THRU-PANEL INSULATORS

Cat. No.	List Price	Dimensions				Hard-ware
		A	B	E	H	
<b>Steatite</b>						
135-40	\$0.35	1 1/2	1 1/2	1/2	1 1/4	10-62
135-40J	.45	1 1/2	1 1/2	1/2	1 1/4	74 Jack
135-42	.30	1/2	3/4	.400	3/8	10-32
135-42J	.40	1/2	3/4	.400	3/8	74 Jack
135-44	.25	3/8	3/8	.305	3/8	6-32
<b>Porcelain</b>						
135-45	.45	3/8	1 1/4	1/2	1 3/8	10-32
135-45J	.60	3/8	1 1/4	1/2	1 3/8	74 Jack
135-46	1.00	1 1/2	1 1/2	1	2 3/8	3/4-20
135-46J	1.25	1 1/2	1 1/2	1	2 3/8	76 Jack
135-47	1.40	1 1/2	2 1/8	1 1/2	4 1/2	3/4-20
135-47J	1.65	1 1/2	2 1/8	1 1/2	4 1/2	76 Jack
135-48	.65	1 1/8	1 3/8	1/2	2	10-32
135-48J	.80	1 1/8	1 3/8	1/2	2	74 Jack

### LEAD-IN BUSHINGS

<b>Steatite</b>						
135-50	.35	3/8	3/8	1/2	6-32	
135-51	.50	3/8	1 1/8	1/2	10-32	
135-52	.80	3/8	1 3/8	1	1 1/8	3/4-20
135-55	.30	1/2	3/4	1/2	6-32	
<b>Porcelain</b>						
135-53	.30	1 1/8	2 1/2	1 1/2	1 3/4	
135-54	.75	1	3 1/2	2 1/2	4	

### MOUNTING FLANGES

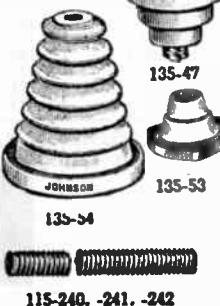
Stamped aluminum Mounting Flanges for Lead-in Bushings 135-53 and 135-54.

Cat. No.	For Bushing No.	List Price
135-90	135-53	\$0.35
135-91	135-54	.70

### THREADED BRASS ROD

Intended primarily for use with lead-in bushings 135-53 and 135-54. Accurately cut threads, heavy nickel plating, complete with 4 washers and 4 nuts, 1/4" diameter, 1/4-20 thread. It has many other uses in radio construction.

Cat. No.	List Price	Length
115-240	\$0.50	8"
115-241	.60	10"
115-242	.70	15"





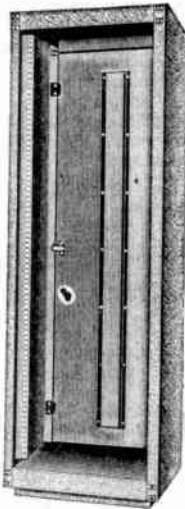
## RADIO CABINETS

### FLOOR MODELS—REAR DOOR ONLY

These beautiful JOHNSON cabinets feature unique adjustable rails for standard relay panels. These rails may be moved forward or backward to suit the user, making vertical chassis construction practical by allowing additional room at the front for mounting components so they project forward.

Other exclusive features include recessed toe spaces at front and sides; inside ventilation with inlets at the bottom of the cabinet and outlets in the top, allowing cabinets to be placed directly against other objects without restricting the air circulation; rear door with positive handle lock, which may be installed to hinge either way.

Side panels and rear doors are constructed of heavy (.051") aluminum for lightness, and sturdy steel frames, tops, and bottoms for strength. Rails for panels are tapped for 10-32 screws and will accommodate either Amateur or Western Electric notched panels. Shipped knocked-down, for your convenience and to save you freight, easily assembled in a few minutes with screws and nuts which are furnished. Available in either fine black wrinkle or a beautiful silver gray wrinkle.



197-103-3

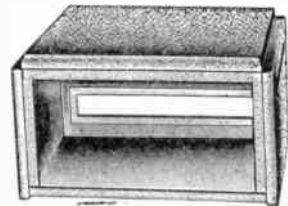
Black Cat. No.	Gray Cat. No.	List Price	Over-all Height	Panel Space	Net Weight	Ship. Weight
197-103-4	197-103-3	\$80.00	68"	19" x 6 1/4"	65 lbs.	77 lbs.
197-102-4	197-102-3	57.50	48 3/4"	19" x 42"	56 lbs.	67 lbs.

Size: 22" wide by 17 1/2" deep.

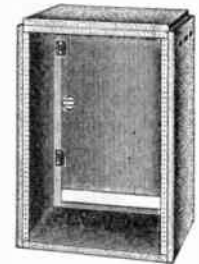
### TABLE MODELS—TOP DOOR ONLY

These JOHNSON units are superbly engineered for a lifetime of hard usage. All-aluminum construction for lightness, heavy .064" metal for strength. Rails for attaching panel are double thickness, tapped for 10-32 screws for either Amateur or Western Electric notched panels. Opening at the bottom rear for the attachment of plugs and cables, also provides ventilation which is completed through inside baffles in the sides near the top.

Shipped knocked-down, easily assembled with screws and nuts which are furnished. Available in either fine black wrinkle or beautiful silver gray wrinkle. This style available in panel heights of 8 3/4", 10 1/2", and 12 1/4".



197-111-3



197-115-3

### TABLE MODELS—BOTH TOP AND REAR DOORS

Same description as above except for the addition of the rear door, equipped with a positive flush snap-catch and may be installed to hinge from either side. Includes top door also. This style available in a panel height of 26 1/4".

Black Cat. No.	Gray Cat. No.	List Price	Over-all Height	Panel Space	Net Weight	Ship. Weight
197-111-4	197-111-3	\$17.50	11 1/4"	19" x 8 3/4"	10 lbs.	13 lbs.
197-110-4	197-110-3	19.00	13"	19" x 10 1/2"	10 3/4 lbs.	14 lbs.
197-112-4	197-112-3	21.00	14 3/4"	19" x 12 1/4"	11 1/2 lbs.	14 lbs.
197-115-4	197-115-3	32.50	28 3/4"	19" x 26 1/4"	18 1/2 lbs.	23 lbs.

Size: 21" wide by 15" deep.

### STEEL CHASSIS

JOHNSON steel chassis have all of the superior features of the aluminum described below, except the ease of machining. The "bright alloy" plating used has high conductivity, resists corrosion, and has a more permanent finish than zinc or cadmium. The result is a stronger and more durable chassis that looks better and affords greater satisfaction. The next time you buy a chassis, try JOHNSON and find the difference for yourself.



### ALUMINUM CHASSIS

JOHNSON chassis have many definite points of superiority. Accurate butt joints in the ends fit closely, preventing "working" or movement when the chassis is subjected to twisting strains. Gaskets applied to the bottom skirts with multiple spot-welds, add to the rigidity so that the practical equivalent of a solid drawn chassis is obtained. The absence of the conventional double thickness of metal in the corners, makes possible the mounting of components in the corner if desired. Most sizes of JOHNSON chassis use heavier gauges of material than corresponding sizes of conventional chassis. Fabricated of extra heavy special alloy aluminum, the strength of the aluminum chassis is adequate for the heaviest power supplies. The ease with which they can be drilled or machined makes them worth more, for most applications, than the small additional cost over steel.

### STEEL BOTTOM PLATES

Add to the attractiveness of your equipment by giving it a commercial appearance with JOHNSON chassis bottom plates. These 20 gauge "bright alloy" plated steel bottom plates, while designed to fit the JOHNSON line of chassis, will fit any standard chassis. They will provide protection for components as well as effective RF shielding. Bosses in each corner prevent marring of finished surfaces. Chassis mounting holes punched and self tapping screws furnished.



Cat. No.	List Price	Size	Gauge
195-350	\$1.40	7 x 5 x 2	18
195-351	1.55	7 x 7 x 2	18
195-352	1.75	9 x 7 x 2	18
195-353	1.70	9 1/2 x 5 1/2 x 2	18
195-354	1.90	10 x 5 x 3	18
195-355	2.10	10 x 8 x 2 1/2	18
195-356	1.80	11 x 7 x 2	18
195-357	2.25	12 x 7 x 3	18
195-358	2.25	12 x 8 x 2 1/2	18
195-359	2.75	12 x 10 x 3	18
195-360	2.05	13 x 7 x 2	18
195-361	2.50	13 x 7 x 3	18
195-363	3.35	10 x 14 x 3	16
195-364	3.00	15 x 7 x 3	16
195-366	2.75	17 x 4 x 3	16
195-367	3.25	17 x 7 x 3	16
195-368	3.00	17 x 8 x 2	16
195-369	3.45	17 x 8 x 3	16
195-370	3.25	17 x 10 x 2	16
195-371	3.75	17 x 10 x 3	16
195-372	4.35	17 x 10 x 4	16
195-373	5.00	17 x 10 x 5	16
195-374	3.40	17 x 11 x 2	16
195-375	3.90	17 x 11 x 3	16
195-376	3.90	17 x 12 x 2	14
195-377	4.55	17 x 12 x 3	14
195-378	5.25	17 x 12 x 4	14
195-379	4.15	17 x 13 x 2	14
195-380	4.80	17 x 13 x 3	14
195-381	5.50	17 x 13 x 4	14
195-382	6.25	17 x 13 x 5	14

### ALUMINUM RACK PANELS

Black Cat. No.	Gray Cat. No.	List Price	Width
196-161-4	196-161-3	\$1.00	1 3/4"
196-162-4	196-162-3	1.60	3 1/2"
196-163-4	196-163-3	2.20	5 1/4"
196-164-4	196-164-3	2.80	7"
196-165-4	196-165-3	3.40	8 3/4"
196-166-4	196-166-3	4.00	10 1/2"
196-167-4	196-167-3	4.65	12 1/4"
196-168-4	196-168-3	5.30	14"
196-169-4	196-169-3	5.95	15 3/4"
196-170-4	196-170-3	6.60	17 1/2"
196-171-4	196-171-3	7.30	19 1/4"
196-172-4	196-172-3	8.00	21"

### ALUMINUM RACK PANELS

JOHNSON aluminum rack panels are the finest that money can buy. Fabricated from 1/8" special alloy aluminum, they are easy to work, yet strong enough to support the



Cat. No.	List Price	Size	Gauge
195-150	\$1.25	7 x 7 x 2	20
195-151	1.35	7 x 7 x 2	20
195-152	1.45	9 x 7 x 2	20
195-153	1.35	9 1/2 x 5 1/2 x 2	20
195-154	1.45	10 x 5 x 3	20
195-155	1.65	10 x 8 x 2 1/2	20
195-156	1.50	11 x 7 x 2	20
195-157	1.75	12 x 7 x 3	20
195-158	1.80	12 x 8 x 2 1/2	20
195-159	2.20	12 x 10 x 3	20
195-160	1.60	13 x 7 x 2	20
195-161	1.80	13 x 7 x 3	20
195-163	2.50	14 x 10 x 3	18
195-164	2.10	15 x 7 x 3	18
195-166	1.90	17 x 4 x 3	18
195-167	2.25	17 x 7 x 3	18
195-168	2.10	17 x 8 x 2	18
195-169	2.45	17 x 8 x 3	18
195-170	2.35	17 x 10 x 2	18
195-171	2.75	17 x 10 x 3	18
195-172	3.25	17 x 10 x 4	18
195-173	3.75	17 x 10 x 5	18
195-174	2.50	17 x 11 x 2	18
195-175	3.00	17 x 11 x 3	18
195-176	3.00	17 x 12 x 2	16
195-177	3.40	17 x 12 x 3	16
195-178	3.90	17 x 12 x 4	16
195-179	3.35	17 x 13 x 2	16
195-180	3.75	17 x 13 x 3	16
195-181	4.30	17 x 13 x 4	16
195-182	5.00	17 x 13 x 5	16

### STEEL BOTTOM PLATES

Cat. No.	List Price	Size	Gauge
195-250	\$0.70	5 x 7	20
195-251	.75	7 x 7	20
195-252	.80	9 x 7	20
195-257	.85	12 x 7	20
195-258	1.00	12 x 8	20
195-259	1.05	12 x 10	20
195-260	.90	13 x 7	20
195-267	1.00	17 x 7	20
195-268	1.05	17 x 8	20
195-270	1.25	17 x 10	20
195-274	1.30	17 x 11	20
195-276	1.35	17 x 12	20
195-279	1.60	17 x 13	20

heaviest transmitter units. Perfectly square sheared edges and accurate die-cut notches with Western Electric spacing together with fine black or beautiful silver gray wrinkle finish make them worthy of the finest equipment. All are standard 19" long.

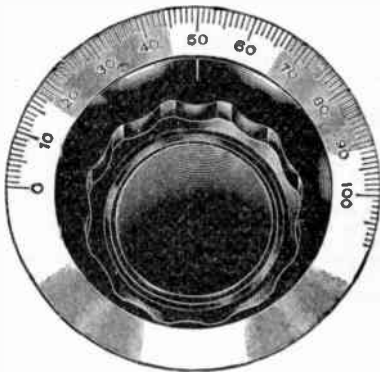
### STEEL RACK PANELS

Steel rack panels of the same dimensions and colors listed above are available on special order in reasonable quantities. Write for prices and delivery.



# E. F. JOHNSON Company WASECA, MINNESOTA

## NEW JOHNSON KNOBS, DIALS, COUNTER-DIAL



116-262, -282



116-222



116-261, -281

### KNOBS AND DIALS

JOHNSON knobs and dials feature fresh, advanced styling with all the utility of the old standard types. The molded phenolic knobs have twelve well defined flutes, with large gripping area. The knob faces are somewhat convex and the sides are slightly tapered contributing to their pleasing appearance on finished equipment.

Accurately molded from tough, thermosetting plastic and with beautiful satin chrome scales, these dials will retain their new appearance indefinitely. Every knob and dial has a brass set screw insert molded in place. In creating this distinctive, functional line, compatibility with existing knobs was carefully considered.

The 2 3/8" knob is available with an aluminum "spinner," similar to the one shown on the 116-208 counter-dial, making it ideal for gear drives or variable inductors.

Except for 116-214-2, listed below, all knobs and dials are for 1/4" shafts.

In addition to the items listed JOHNSON is also prepared to furnish many variations on special order in quantity. This includes pointer types, vernier drives, and special graduations on metal skirts. Write to JOHNSON about your requirements.

### COUNTER-DIAL

Simple, rugged, attractive, easy to install, the new JOHNSON counter-dial is a positively calibrated drive for gear reduction assemblies and rotary variable inductors. Has built-in dial lock, "spinner" knob, and attractive black phenolic escutcheon. Counter will record up to 99 turns. Vernier dial calibrated 0-100 over 360°, making possible an accurate return to any pre-determined setting.

116-208—Counter-dial with dial lock, escutcheon, and 116-286 knob. **List Price \$17.00**



116-208

### INSTRUMENT KNOB

A new and extremely versatile black phenolic knob for screwdriver or hand operation. Has set-screw for attachment. 1 1/2" long, skirt 3/4" diameter.

Cat. No. 116-214-1 for 1/4" shaft **List Price \$0.50**  
Cat. No. 116-214-2 for 3/8" shaft **List Price .50**

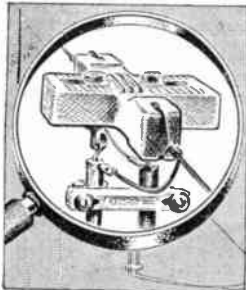


Cat. No.	Description	List Price
<b>2 3/8" SIZE</b>		
116-280	—Knob only, black phenolic	\$0.90
116-281	—Knob with black phenolic skirt 3" diameter	1.25
116-282	—Knob with 4" satin chrome dial, 0-100 scale over 180° plain (single line) indicator button	2.50
116-288	—Spinner knob for 1/4" shaft	1.25
<b>1 5/8" SIZE</b>		
116-280	—Knob only, black phenolic	.60
116-261	—Knob with black phenolic skirt 2 1/4" diameter	.95
116-262	—Knob with 2 3/4" satin chrome dial, 0-100 scale over 180° plain (single line) indicator button	1.75
<b>1 1/4" SIZE</b>		
116-220	—Knob only, black phenolic	.45
116-221	—Knob with black phenolic skirt 1 1/2" diameter	.70
116-222	—Knob with 1 1/2" beveled satin chrome dial, readings as follows:	
116-222-1	—100-0 over 180°	.85
116-222-2	—0-10 over 270°	.85
116-222-3	—1-7 over 180°	.85
116-222-4	—ON-OFF over 60°	.85
116-222-5	—Single line	.85

## JOHNSON "Q" ANTENNA AND ANTENNA ACCESSORIES

### THE JOHNSON "Q"

The consistent results obtained by the thousands of users of the JOHNSON "Q" antenna system is due to the extremely high efficiency of this famous antenna. Applications include half-wave doublet, either horizontal or vertical, harmonic or "long wire" radiator, radiator-reflector, radiator-director, "V" Beam, JOHNSON "Q" Beam, and others. The -2Q and -6Q use aluminum tubing for the radiating portion as well as for the matching section. Write to JOHNSON today for more detailed information.



### COMPLETE "Q" SYSTEMS

Cat. No.	List Price	Band (Meters)
137-2Q	\$7.00	2
137-6Q	10.50	6
137-10Q	9.75	10
137-14Q	14.00	14
137-20Q	18.50	20
137-40Q	28.00	40

### ALUMINUM "Q" TUBING

Cat. No.	List Price	Band (Meters)	Length
136-ST10	\$4.50	10	2-8'6"
136-ST14	7.50	14	3-8'6"
136-ST20	9.50	20	4-8'6"
136-ST40	18.00	40	8-8'6"

### "Q" SUSPENSION ASSEMBLY

Includes new type insulator and all necessary hardware for connecting "Q" matching section to antenna and transmission line. Insulator may also be used to bring off "Zepp" feeders from the flat top.

Cat. No. **List Price**  
136-39 —Suspension Assembly **\$3.25**  
136-108 —Antenna Feeder Insulator only **.60**



136-106

### "Q" SPACING BARS

Used for spacing tubing in matching transformer applications. Spacing is continuously variable from 7/8" to 3 5/8".

No. 136-33—Spacing Bar **List Price \$0.60**



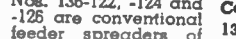
### ENAMELLED COPPERWELD ANTENNA WIRE

JOHNSON Enamelled Copperweld Antenna Wire will not stretch nor sag. Prices are per 100 feet. Carried by most suppliers in bulk, it is available from the factory in any specified length.

ENAMEL	STEEL CORE	Cat. No.	List Price	B&S Gauge	Ft. per Spool	Breaking Strength
JOHNSON	PURE COPPER WELDED TO CORE	144-348	\$4.45	10	34 1/2	1130 lbs.
		144-350	3.25	12	54	720 lbs.
		144-352	2.20	14	85	400 lbs.

### FEEDER INSULATORS

No. 136-122, -124 and -126 are conventional feeder spreaders of high grade low absorption porcelain, Silicone impregnated for finest water repellent characteristics. No. 136-122 is provided with notches for 1 1/2" line spacing. All have 3/8x1/2" cross section. No. 136-31 is a glazed porcelain transposition insulator which permits crossing transmission lines at frequent intervals to prevent radiation.



Cat. No. List Price Lg.

136-122	\$0.16	2"
136-124	.23	4"
136-126	.30	6"
136-31	.16	



136-122, -124, -126



136-31

### ANTENNA INSULATORS

The 136-151, -152, -153 are 1 1/2" in diameter, wet process porcelain and have non-corrosive aluminum end bells. The 136-107, -112 are wet process 1" in diameter. The 136-104 is dry process 5/8" square. The 136-32 is dry process compression strain type, 1 1/2" long. All are glazed to prevent moisture absorption.



136-151, -152, -153



136-107, 136-112

Cat. No.	List Price	Breaking Strength	Length	Net	Over-all
136-151	\$9.00	5000 lbs.	8"	15 1/2"	
136-152	12.00	5000 lbs.	12"	19 1/2"	
136-153	17.50	5000 lbs.	20"	25 1/2"	
136-104	.20	400 lbs.	4"	4 1/2"	
136-107	1.10	800 lbs.	7"	7"	
136-112	1.20	800 lbs.	12"	12"	
136-32	.15	Compression strain type	1 1/2"		



136-104

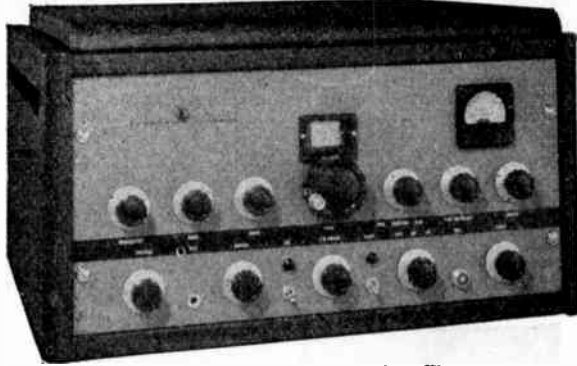


136-32





## JOHNSON VIKING I 150-WATT TRANSMITTER KIT



JOHNSON VIKING I Transmitter Kit

### features —

- Amplitude Modulation
- Front Panel Band Switching
- 100 Watts Phone Output
- 115 Watts CW Output
- VFO Input Provision
- Dual Power Supplies
- Complete with Cabinet
- Pi-Network Coupling

### A FACTORY ENGINEERED TRANSMITTER

The JOHNSON Viking I is a factory-designed and engineered transmitter, not another collection of parts called a kit. Months were spent in its development by JOHNSON engineers and many of the parts were developed and manufactured especially for it. The whole job was done as though JOHNSON were going to put it in production. An elaborate instruction book was prepared, including detailed photographs and step-by-step instructions for the assembling and wiring.

A completely self-contained, band-switching transmitter delivering full output throughout its range, consisting of the 160, 80, 40, 20, 15, and 10-meter bands, as well as adjacent frequencies.

### TECHNICAL DESCRIPTION

RF section, a 6AU6 oscillator drives a 6AQ5 buffer which drives a Raytheon 4D32 final. An 829B can also be used with slightly less output. Audio section, a 6AU6 into a 6AU6 into push-pull 807 modulators. Frequency response has been limited to the range 300 to 3000 cycles. 5R4 HV rectifiers, 5Z4 LV rectifier, and 6AL5 bias rectifier complete the tube line-up. Dual power supplies for better regulation. Rotary variable inductor and variable condenser geared together give a uniform "Q" and better efficiency throughout the tuning range. Pi-section output tank will load into a wide variety of antennas and effectively reduce the harmonic content of the output.

### EVERYTHING NEEDED IS INCLUDED

No holes to drill, every part is furnished including the cabinet, wiring harness, screws, nuts, washers, solder terminals, wire, grommets, everything. Ask your Jobber for complete catalog.

Amateur Net, complete less tubes, crystals, key, **\$209.50** mike

### INSTANT CRYSTAL SELECTOR



126-220-1

Ten frequencies with a twist of the knob with extra position for ECO. Accommodates all crystals with 1/2" spacing. With adaptors also takes 6 upright 3/4" spaced crystals, plus 4 with 1/2" spacing. Bracket permits vertical or horizontal mounting.

Cat. No.	List Price
126-220-1—Instant Crystal Selector	\$5.80
126-120-1—Crystal Mounting Board only	3.10

## JOHNSON UNIVERSAL ROTOMATIC ANTENNA ARRAY



Rotomatic Control Box

The new JOHNSON Rotomatic Antenna is truly UNIVERSAL because its construction allows it to be set up in a variety of different combinations and types of booms. The main boom is special alloy steel tubing to which the elements are attached with clamps allowing any spacing or combination of elements.

### ROTOMATIC, THE DELUXE ROTARY BEAM

Simple to erect and built to last a lifetime. Heavy, over-size gears, bearings, and shafts. Precision design and workmanship. All weather

construction, heavy duty, interference-free motor. Remote control box with selsyn direction indicator. Weatherproof RF relay box for switching with dual beams. Both parasitic and phased arrays available.

### THE NEW JOHNSON PHASED ARRAY

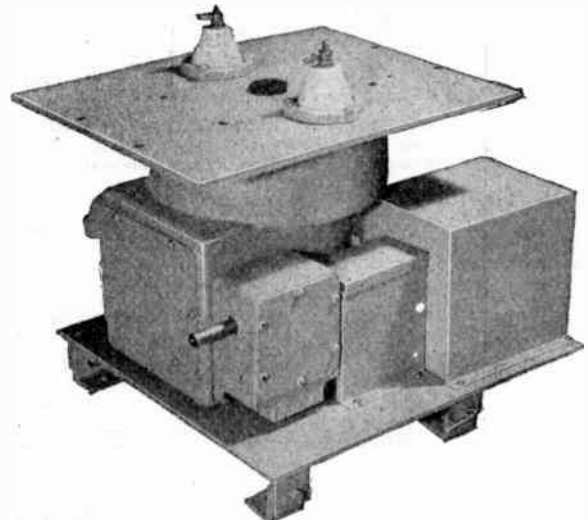
Based on the same principles used to build JOHNSON phasing equipment for broadcast stations, the new phased (all elements driven) arrays give decidedly better forward gain and front-to-back ratio than the parasitic arrays. Before you buy any beam, investigate the new JOHNSON Rotomatic and particularly the JOHNSON phased array. Write for complete Rotomatic catalog today.

Rotator  
Boom  
and Array  
Assembly



Cat. No.	Description	Amateur Net
138-11	—Rotator complete with motor and control box	\$236.00
138-101	—Rotator only, for manual operation	117.50
138-102	—Rotator with gear drive, less motor	136.50
138-108	—Weatherproof antenna relay for dual beams	15.80
138-104	—Mounting base assembly (included with 138-111)	9.50
138-106	—Motor drive assembly	39.75
138-110	—Control box including selsyn for rotator	47.50
138-105	—High speed gear box for motor drive	18.00

WRITE FOR LITERATURE AND PRICES ON  
BOOMS AND ANTENNA ARRAY KITS



JOHNSON Rotomatic Rotator

# STANWYCK COILS

Mfrd. by STANWYCK WINDING CO.

TELEVISION - I.F. - ANT. - R.F. - F.M. - OSCILLATOR COILS

## TELEVISION COILS

These components when used in a properly designed circuit can provide a gain of approximately 10,000 X in the picture I.F. amplifier with overall response as illustrated. The sound I.F. system can supply a gain of approximately 7,000 X from the converter grid to the grid of the last I.F. tube and a discriminator slope sensitivity of approximately 0.08 volts/kc. with 1.0 volt signal level at the last I.F. amplifier tube grid. The overall sound I.F. and discriminator response is linear over 150 mc.

### TELEVISION REPLACEMENT COMPONENTS

#### R.C.A. REPLACEMENTS

R.C.A. PART No.	STANWYCK PART No.	DESCRIPTION	LIST PRICE
211-T1	S-948	9 K. V. Horizontal H.V. Output (Flyback)	\$9.00
203-L1	S-943	Video Peaking Coil	.45
203-L2	S-944	Video Peaking Coil	.45
203-L3	S-945	Video Peaking Coil	.45
203-L4	S-946	Video Peaking Coil	.45
202-K2	S-949	1st Pix I.F.	2.70
202-K3	S-950	2nd Pix I.F.	1.90
202-L1	S-951	3rd and 4th Pix I.F.	.65
202-K4	S-952	Cathode Trap	2.30
201-K1	S-953	Sound I.F.	1.90
203-K1	S-954	Sound Disc.	2.30
202-K1	S-955	Converter Transformer	2.40
204-L1	S-956	Filament Choke	.15
201-R1	S-957	Horizontal Width Control	.85
201-R3	S-958	Linearity Control	.85
208-T8	S-959	Syncrolok	2.50
203-R1	S-966	Syncguide	1.80

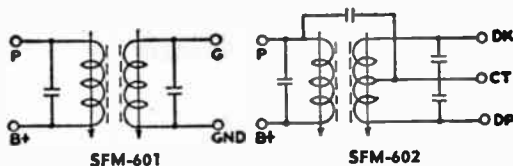
#### DuMONT REPLACEMENT

Stanwyck No. S-934—DuMont High Voltage Pulse Oscillator Transformer \$10.50

#### REPLACEMENTS FOR MOTOROLA - TELETONE - HALLICRAFTERS AND OTHER TRANSFORMLESS TELEVISION RECEIVERS

Stanwyck No. S-928—4.5 K.V. (4500-Volt) R.F. Power Supply Transformer \$ 7.50  
 Stanwyck No. S-930—10 K.V. (10,000-Volt) R.F. Power Supply Transformer 10.50

S-958 LINEARITY CONTROL — Directly interchangeable with R.C.A. No. 201-R3, this linearity control has extremely wide inductance variation and can be set to provide a linear operating condition in the horizontal deflection circuit.  
 List Price, \$0.85



## HIGH VOLTAGE COILS

S-928 4.5 Kv. POWER TRANSFORMER—A 4.5 Kv. R.F. power transformer of high efficiency for use in electrostatic deflection circuits employing a 7" tube.  
 List Price, \$7.50

S-930 10 Kv. R.F. POWER TRANSFORMER—A 10 Kv. R.F. power transformer thoroughly vacuum impregnated for efficient operation. Mechanically designed for "corona-less" performance at full rated output.  
 List Price, \$10.50

S-948 HIGH VOLTAGE FLYBACK—This horizontal output transformer is similar to the R.C.A. No. 211-T1. Used in electromagnetic deflection circuit, it provides approximately 9 Kv. for excellent picture brilliancy in a 10" or 12" tube.  
 List Price, \$9.00

S-968 HORIZONTAL OUTPUT TRANSFORMER similar to R.C.A. No. 211-T3 (Wired same as S-948).  
 List Price, \$9.00

## F.M. COILS

S-605 RATIO DETECTOR 10.7 mc.—To meet the critical demands for a sensitive and unusually stable F.M. detector, the S-605 was developed. Embodying every characteristic of a high quality product, this detector will outperform similar products. A peak to peak band width of 350 kc. with linearity exceeding plus or minus 125 kc. results in unusual quality of audio reproduction. High "Q" iron cores, stable ceramic capacitors plus ceramic construction throughout result in the ultimate for fine F.M. reproduction.  
 List Price, \$4.50

S-601 F.M. DISCRIMINATOR—Identical to I.F. electrically and mechanically. The electrically centered secondary results in perfect symmetry between positive and negative peaks. High output and excellent discrimination are obtained. A high quality transformer for production or replacement.  
 List Price, \$4.65

S-609 F.M. CHOKE—An excellent parasitic suppressor in the oscillator plate circuit.  
 List Price, \$0.40

971 4.5 Mc. MIDGET RATIO DETECTOR.  
 List Price, \$3.00

977 HORIZONTAL FREQUENCY AND PHASE COIL.  
 List Price, \$2.50

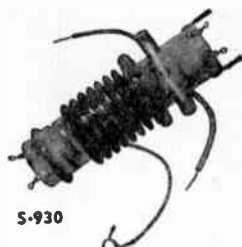
999 G-E TYPE FLYBACK  
 List Price, \$10.00



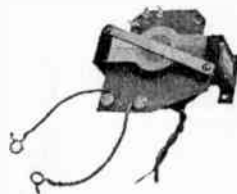
S-949



S-928



S-930



S-948

# JAMES MILLEN

MALDEN MASSACHUSETTS



### SECONDARY FREQUENCY STANDARD

A precision frequency standard for both laboratory and production uses, adjustable output, provided at intervals of 10, 25, 100 and 1000 kc, with magnitude useful to 50 mc. Harmonic amplifier with tuned plate circuit and panel range switch. 800 cycle modulator with panel control switch. In addition to oscillators, multivibrators, modulators and amplifiers, a built-in detector with phone jack and gain control is incorporated. Self-contained power supply.

Model 90505, with tubes . . . . . \$155.00

### ABSORPTION WAVEMETERS

The 90600 series of absorption wavemeters are available in several styles and many different ranges. Most popular is kit of four units, covering range of 3.0 to 140 mc.

Model 90600 . . . . . \$18.00

### GRID DIP METER

The No. 90651 MILLEN GRID DIP METER is compact and completely self contained. The AC power supply is of the "transformer" type. The drum dial has seven calibrated uniform length scales from 1.5 MC to 300 MC with generous over laps plus an arbitrary scale for use with special application inductors. Internal terminal strip permits battery operation for antenna measurement.

No. 90651, with tube . . . . . \$55.00

### LABORATORY SYNCHROSCOPES

The 5" laboratory synchroscopes are available with and without detector-video strips.

Model P-4-2, with tubes . . . . . \$350.00  
Model P-4E-2, with tubes . . . . . 445.00

### MINIATURE SYNCHROSCOPE

The compact design of the No. 90952, measuring only 7 1/2" x 5 3/4" x 13", and weighing only 17 lbs., makes available for the first time a truly DESIGNED FOR APPLICATION "field service" Synchroscope.

No. 90952, with tubes . . . . . \$375.00

### CATHODE RAY OSCILLOSCOPES

The No. 90902, No. 90903 and No. 90905 Rack Panel Oscilloscopes, for two, three and five inch tubes, respectively, are inexpensive basic units comprising power supply, brilliancy and centering controls, safety features, magnetic shielding, switches, etc. As a transmitter monitor, no additional equipment or accessories are required. The well-known trapezoidal monitoring patterns are secured by feeding modulated carrier voltage from a pickup loop directly to vertical plates of the cathode ray tube and audio modulating voltage to horizontal plates. By the addition of such units as sweeps, pulse generators, amplifiers, servo sweeps, etc., all of which can be conveniently and neatly constructed on companion rack panels, the original basic 'scope unit may be expanded to serve any conceivable industrial or laboratory application.

No. 90902, less tubes . . . . . \$ 42.50  
No. 90903, less tubes . . . . . 49.50  
No. 90905, less tubes . . . . . 100.00

### 'SCOPE AMPLIFIER—SWEEP UNIT

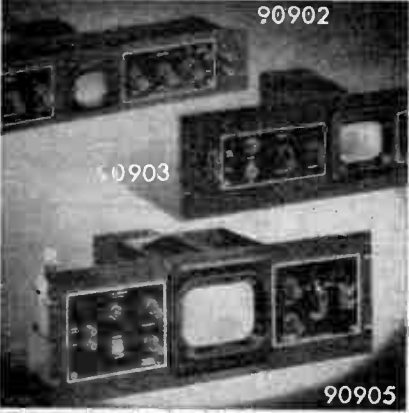
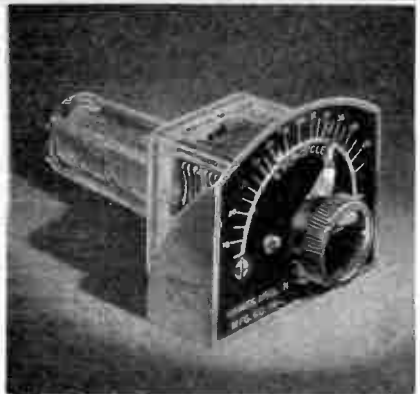
Vertical and horizontal amplifiers along with hard-tube, saw tooth sweep generator. Complete with power supply mounted on a standard 5/4" rack panel.

No. 90921, with tubes . . . . . \$75.00

### REGULATED POWER SUPPLIES

A compact, uncased, regulated power supply, either for table use in the laboratory or for incorporation as an integral part of larger equipments. 50 watts, with regulated voltage from 0 to 200 volts.

Model 90201, less tubes . . . . . \$100.00



90651

90902

90903

90905

90952

90921

90201

# JAMES M MILLEN

MALDEN · MASSACHUSETTS



92101

**R9'er MATCHING PREAMPLIFIER**  
 The Millen 92101 is an electronic impedance matching device and a broad-band preamplifier combined into a single unit, designed primarily for operation on 6 and 10 meters. Coils for 20 meter band also available.  
 No. 92101, less tubes . . . . . \$24.75



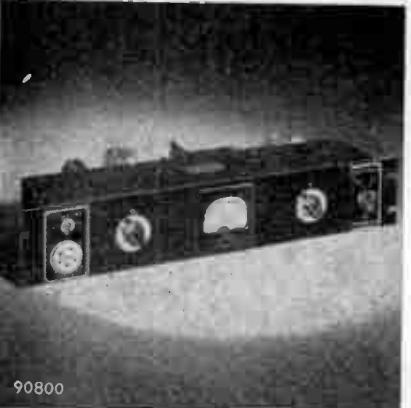
90700

**SINGLE SIDEBAND SELECTOR**  
 The No. 92105 is designed to permit Single Sideband Selection with existing receivers. Full technical details in April 1948 QST. Produced in co-operation and under exclusive U. S. patent license (2,364,863 and others) with the J. L. A. McLaughlin Research Laboratories.  
 No. 92105, with tubes and crystals . . . \$75.00



92105

**FREQUENCY SHIFTER**  
 A favorite frequency shifter, plugs in, in place of crystal, for instant finger-tip control of carrier frequency. Low drift, chirpless keying, vibration immune, big band spread, accurate calibration.  
 Model 90700, with tubes . . . . . \$42.50



90800

**VARIABLE FREQUENCY OSCILLATOR**  
 The No. 90711 is a complete transmitter control unit with 6SK7 temperature-compensated, electron coupled oscillator of exceptional stability and low drift, a 6SK7 broad-band buffer or frequency doubler, a 6A67 tuned amplifier which tracks with the oscillator tuning, and a regulated power supply. Output sufficient to drive an 807 is available on 160, 80 and 40 meters and reduced output is available on 20 meters. Close frequency setting is obtained by means of the vernier control arm at the right of the dial. Since the output is isolated from the oscillator by two stages, zero frequency shift occurs when the output load is varied from open circuit to short circuit. The entire unit is unusually solidly built so that no frequency shift occurs due to vibration. The keying is clean and free from all annoying chirp, quick drift, jump, and similar difficulties often encountered in keying variable frequency oscillators.  
 No. 90711, with tubes . . . . . \$124.50



90711

**50 WATT TRANSMITTER**  
 Based on an original Handbook design, this flexible unit is ideal for either low power amateur band transmitter use or as an exciter for high power PA stages.  
 Model 90800, less tubes . . . . . \$42.50



74400

**OCTAL BASE AND SHIELD**  
 Low loss phenolic base with octal socket plug and aluminum shield can  $1\frac{3}{8} \times 1\frac{1}{8} \times 3\frac{1}{8}$ .  
 No. 74400 . . . . . \$.75



33102

FULL SIZE

**TRANSMISSION LINE PLUG**  
 An inexpensive, compact, and efficient polyethylene unit for use with the 300 ohm ribbon type polyethylene transmission lines. Fits into standard Millen No. 33102 (crystal) socket. Pin spacing  $\frac{1}{2}$ " diameter .095".  
 No. 37412 . . . . . \$.21



69043

69041

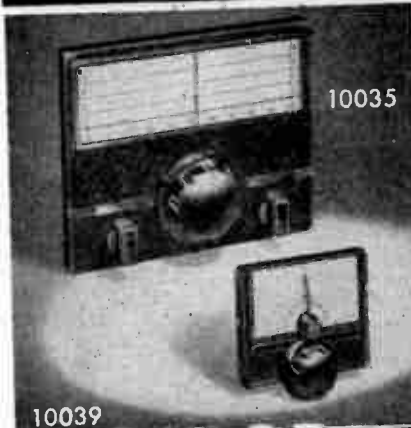
69045

69046

**PERMEABILITY TUNED CERAMIC FORMS**  
 In addition to the popular shielded plug-in permeability tuned forms, 74000 series, the 69040 series of ceramic permeability tuned unshielded forms are available as standard stock items. Winding diameters and lengths of winding space are  $1\frac{1}{2} \times \frac{3}{8}$  for 69041-2;  $\frac{1}{4} \times \frac{3}{8}$  for 69043-7-8;  $\frac{1}{2} \times 1\frac{1}{4}$  for 69045-6;  $\frac{3}{8} \times \frac{3}{8}$  for 69044.  
 No. 69041—(Copper Slug) . . . . . \$.75  
 No. 69042—(Iron Core) . . . . . .75  
 No. 69043—(Iron Core) . . . . . .75  
 No. 69044—(Copper Slug) . . . . . .75  
 No. 69045—(Copper Slug) . . . . . .90  
 No. 69046—(Iron Core) . . . . . .90  
 No. 69047—(Copper Slug) . . . . . .90  
 No. 69048—(Iron Core) . . . . . .90

# JAMES MILLEN

MALDEN MASSACHUSETTS



10035

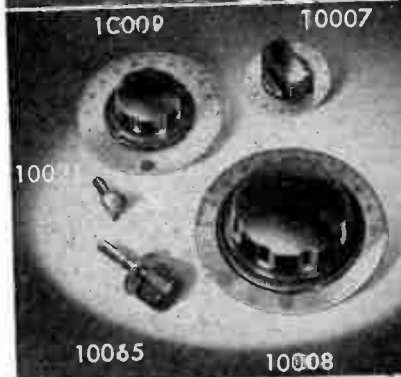
10039

### INSTRUMENT DIALS

The No. 10030 is an extremely sturdy instrument type indicator. Control shaft has 1 to 1 ratio. Vee-der type counter is direct reading in 99 revolutions and vernier scale permits readings to 1 part in 100 of a single revolution. Has built-in dial lock and 1/4" drive shaft coupling. May be used with multi-revolution transmitter controls, etc., or through gear reduction mechanism for control of fractional revolution capacitors, etc., in receivers or laboratory instruments.

The No. 10035 illuminated panel dial has 12 to 1 ratio; size, 8 1/2" x 6 1/2". Small No. 10039 has 8 to 1 ratio; size, 4" x 3 1/4". Both are of compact mechanical design, easy to mount and have totally self-contained mechanism, thus eliminating back of panel interference. Provision for mounting and marking auxiliary controls, such as switches, potentiometers, etc., provided on the No. 10035. Standard finish, either size, flat black art metal.

No. 10039.....	\$ 2.70
No. 10035.....	6.00
No. 10030.....	25.00



10009

10007

10065

10008

### DIALS AND KNOBS

Just a few of the many stock types of small dials and knobs are illustrated herewith. 10007 is 1 1/2" diameter, 10009 is 2 1/2" and 10008 is 3 1/2".

No. 10007.....	\$ .60
No. 10008.....	1.00
No. 10009.....	.85
No. 10021.....	.15
No. 10065.....	.45

### PANEL MARKING TRANSFERS

The panel marking transfers have 1/8" block letters. Special solution furnished. Must not be used with water. Equally satisfactory on smooth or wrinkle finished panels or chassis. Ample supply of every popular word or marking required for amateur or commercial equipment.

No. 59001, white letters.....	\$1.25
No. 59002, black letters.....	1.25



10050



59001

### HIGH FREQUENCY TRANSMITTER

The No. 90810 crystal control transmitter provides 75 watt output (higher output may be obtained by the use of forced cooling) on the 20, 10-11, 6 and 2 meter amateur bands. Provisions are made for quick band shift by means of the new 48000 series high frequency plug-in coils.

No. 90810, less tubes and crystals.....	\$69.75
---	---------

### HIGH FREQUENCY RF AMPLIFIER

A physically small unit capable of a power output of 70 to 85 watts on 'phone or 87 to 110 watts on C-W on 20, 15, 11, 10, 6 or 2 meter amateur bands. Provision is made for quick band shift by means of the new No. 43000 series VHF plug-in coils. The No. 90811 unit uses either an 829-B or 3E29.

No. 90811 with 10 meter band coils, less tube.....	\$33.00
--	---------

### HIGH VOLTAGE POWER SUPPLY

The No. 90281 high voltage power supply has a d.c. output of 700 volts, with maximum current of 250 ma. In addition, a.c. filament power of 6.3 volts at 4 amperes is also available so that this power supply is an ideal unit for use with transmitters, such as the Millen No. 90800, as well as general laboratory purposes. The power supply uses two No. 816 rectifiers and has a two section pi filter with 10 henry General Electric chokes and a 2-2-10 mfd. bank of 1000 volt General Electric Pyronol capacitors. The panel is standard 8 1/4" x 19" rack mounting.

No. 90281, less tubes.....	\$84.50
----------------------------	---------

### RF POWER AMPLIFIER

This 500 watt amplifier may be used as the basis of a high power amateur transmitter or as a means for increasing the power output of an existing transmitter. As shipped from the factory, the No. 90881 RF power amplifier is wired for use with the popular RCA or G.E. "812" type tubes, but adequate instructions are furnished for readjusting for operation with such other popular amateur style transmitting tubes as Taylor TZ40, Eimac 35T, etc. The amplifier is of unusually sturdy mechanical construction, on a 10 1/2" relay rack panel. Plug-in inductors are furnished for operation on 10, 20, 40 or 80 meter amateur bands. The standard Millen No. 90800 exciter unit is an ideal driver for the new No. 90881 RF power amplifier.

No. 90881, with one set of coils, but less tubes.....	\$89.50
---	---------



90810



90281

Copyright by U. C. P., Inc.

# JAMES M MILLEN

MALDEN · MASSACHUSETTS



## SHAFT LOCKS

In addition to the original No. 10060 and No. 10061 "DESIGNED FOR APPLICATION" shaft locks, we can also furnish such variations as the No. 10062 and No. 10063 for easy thumb operation as illustrated above. The No. 10061 instantly converts any plain "1/4" shaft" volume control, condenser, etc. from "plain" to "shaft locked" type. Each to mount in place of regular mounting nut.

No. 10060.....	\$ .36
No. 10061.....	.36
No. 10062.....	.45
No. 10063.....	.45

## TRANSMITTING TANK COILS

A full line—all popular wattages for all bands. Send for special catalog.

## DIAL LOCK

Compact, easy to mount, positive in action, does not alter dial setting in operation! Rotation of knob "A" depresses finger "B" and "C" without imparting any rotary motion to Dial. Single hole mounted.

No. 10050.....	\$ .45
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## RIGHT ANGLE DRIVE

Extremely compact, with provisions for many methods of mounting. Ideal for operating potentiometers, switches, etc., that must be located, for short leads, in remote parts of chassis.

No. 10012.....	\$3.75
----------------	--------

## THRU-BUSHING

Efficient, compact, easy to use and neat appearing. Fits 1/4" hole in chassis. Weld in place with a drop of solder or a "nick" from a crimping tool.

No. 32150.....	\$ .05
----------------	--------

## FLEXIBLE COUPLINGS

The No. 39000 series of Millen "Designed for Application" flexible coupling units include, in addition to improved versions of the conventional types, also such exclusive original designs as the No. 39001 insulated universal joint and the No. 39006 "slide-action" coupling (in both steatite and bakelite insulation).

The No. 39006 "slide-action" coupling permits longitudinal shaft motion, eccentric shaft motion and out-of-line operation, as well as angular drive without backlash.

The No. 39005 is similar to the No. 39001, but is not insulated and is designed for applications where relatively high torque is required. The steatite insulated No. 39001 has a special anti-backlash pivot and socket grip feature. All of the above illustrated units are for 1/4" shaft and are standard production type units.

No. 39001.....	\$ .42
No. 39002.....	.42
No. 39003.....	.21
No. 39005.....	.42
No. 39006.....	.42

## CATHODE RAY TUBE SHIELDS

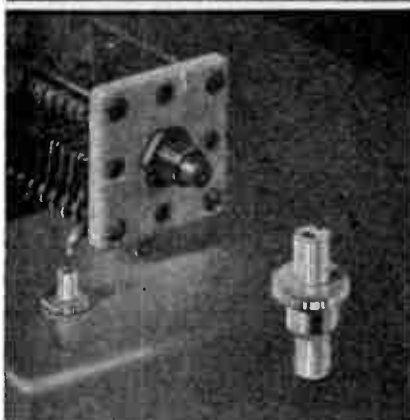
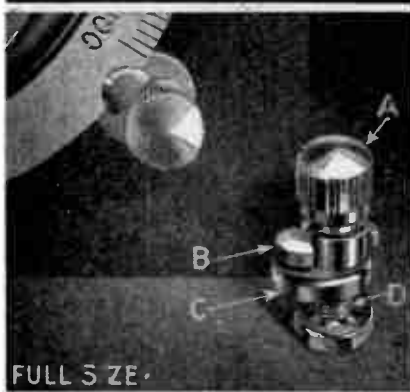
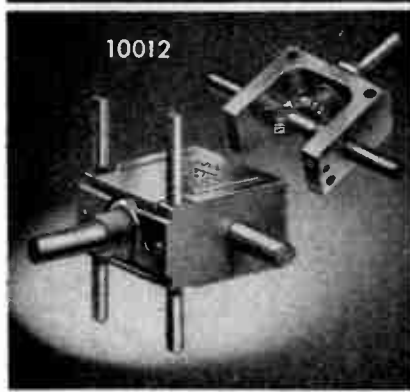
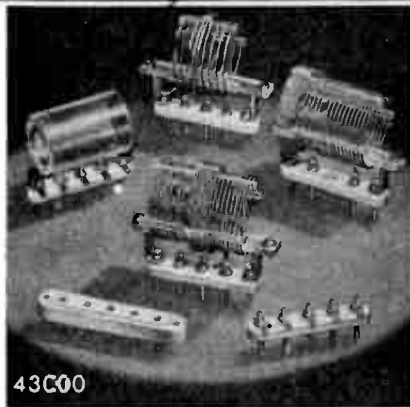
For many years we have specialized in the design and manufacture of magnetic metal shields of nicoloi and mumetal for cathode ray tubes in our own complete equipment, as well as for applications of all other principal complete equipment manufacturers. Stock types as well as special designs to customers' specifications promptly available.

No. 80045—Nicoloi for 5" tube.....	\$10.50
No. 80043—Nicoloi for 3" tube.....	6.00
No. 80042—Nicoloi for 2" tube.....	5.25

## BEZELS FOR CATHODE RAY TUBES

Five inch bezel is of cast aluminum with black wrinkle finish. Complete with neoprene cushion, green lucite filter scale and four screws for quick detachment from panel when inserting tube.

No. 80075—5".....	\$7.50
No. 80073—3".....	3.90
No. 80072—2".....	1.25



# JAMES MILLEN

MALDEN · MASSACHUSETTS



## TUBE SOCKETS DESIGNED FOR APPLICATION

MODERN SOCKETS for MODERN TUBES! Long Flashover path to chassis permits use with transmitting tubes, 866 rectifiers, etc. Long leakage path between contacts. Contacts are type proven by hundreds of millions already in government, commercial and broadcast service, to be extremely dependable. Sockets may be mounted either with or without metal flange. Mounts in standard size chassis hole. All types have barrier between contacts and chassis. All but octal and crystal sockets also have barriers between individual contacts in addition.

The No. 33888 shield is for use with the 33008 octal socket. By its use, the electrostatic isolation of the grid and plate circuits of single-ended metal tubes can be increased to secure greater stability and gain.

The 33087 tube clamp is easy to use, easy to install, effective in function. Available in special sizes for all types of tubes. Single hole mounting. Spring steel, cadmium plated.

Cavity Socket Contact Discs, 33446 are for use with the "Lighthouse" ultra high frequency tube. This set consists of three different size unhardened beryllium copper multi-finger contact discs. Heat treating instructions forwarded with each kit for hardening after spinning or forming to frequency requirements.

Voltage regulator dual contact bayonet socket, 33991 black Bakelite insulation and 33992 with low loss high leakage mica filled Bakelite insulation.

No. 33004.....	\$.30
No. 33005.....	.30
No. 33006.....	.30
No. 33007.....	.34
No. 33008.....	.30
No. 33888.....	.18
No. 33087.....	.30
No. 33002.....	.30
No. 33102.....	.30
No. 33202.....	.30
No. 33302.....	.21
No. 33446*.....	5.00
No. 33991.....	.45
No. 33992.....	.55

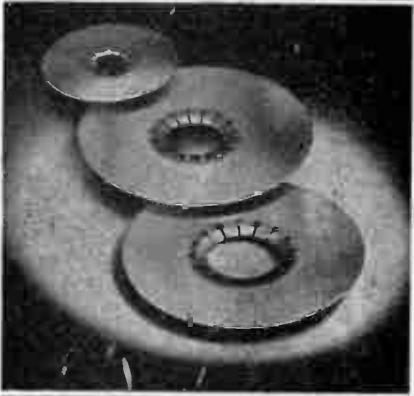
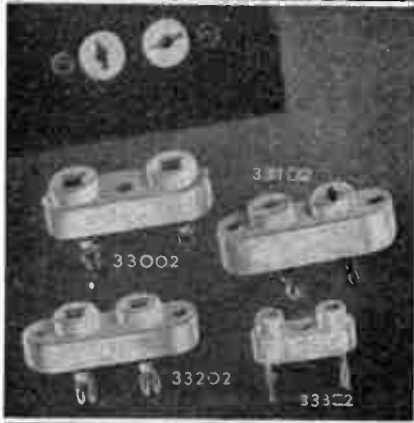
\* For set of 3. Single discs \$2.00 each.

## RF CHOKES

Many have copied, few have equalled, and none have surpassed the genuine original design Millen Designed for Application series of midget RF Chokes. The more popular styles now in constant production are illustrated herewith. Special styles and variations to meet unusual requirements quickly furnished.

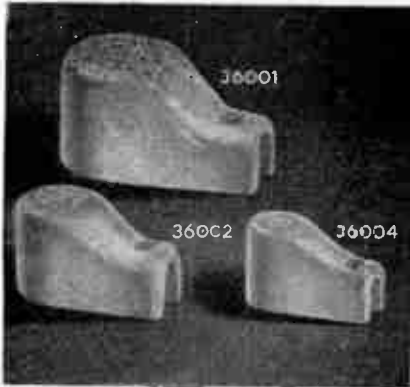
General Specifications: 2.5 mH, 250 mA for types 34100, 34101, 34102, 34103, 34104, and 1 mH, 300 mA for types 34105, 34106, 34107, 34108, 34109.

No. 34100.....	\$.42
No. 34101.....	.36
No. 34102.....	.42
No. 34103.....	.36
No. 34104.....	.42



# JAMES MILLLEN

MALDEN · MASSACHUSETTS



## CERAMIC PLATE OR GRID CAPS

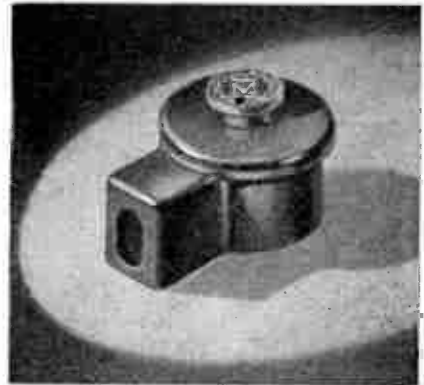
Soldering lug and contact one-piece. Lug ears annealed and solder dipped to facilitate easy combination "mechanical plus soldered" connection of cable.

No. 36001—9/16"	\$.21
No. 36002—3/8"	.21
No. 36004—1/4"	.21

## SNAP LOCK PLATE CAP

For Mobile, Industrial and other applications where tighter than normal grip with multiple finger 360° low resistance contact is required. Contact self-locking when cap is pressed into position. Insulated snap button on top releases contact grip for easy removal without damage to tube.

No. 36011—9/16"	\$.60
No. 36012—3/8"	.60



## SAFETY TERMINAL

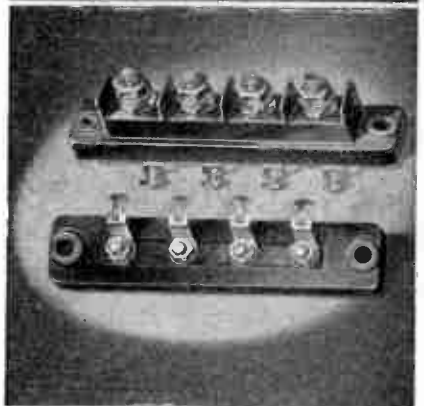
Combination high voltage terminal and thru-bushing. Tapered contact pin fits firmly into conical socket providing large area, low resistance connection. Pin is swivel mounted in cap to prevent twisting of lead wire.

No. 37001, Black or Red	\$.40
No. 37501, Low loss	.55

## TERMINAL STRIP

A sturdy four-terminal strip of molded black Textolite. Barriers between contacts. "Non turning" studs, threaded 8/32 each end.

No. 37104	\$.60
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## POSTS, PLATES and PLUGS

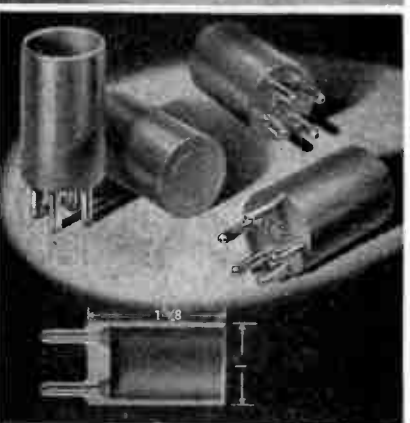
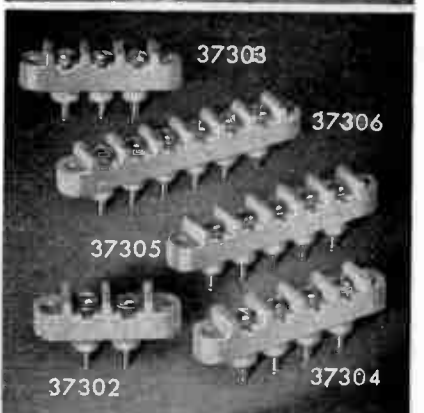
Designed for Application! Compact, easy to use. Made in black and red regular bakelite as well as low loss brown mica filled bakelite or steatite for R.F. uses. Posts have captive head.

No. 37202 Plates (pr.)	\$.30
No. 37212 Plugs	.70
No. 37222 Posts (pr.)	.40

## STEATITE TERMINAL STRIPS

Terminal and lug are one piece. Lugs are Navy turret type and are free floating so as not to strain steatite during wide temperature variations. Easy to mount with series of round holes for integral chassis bushings.

No. 37302	\$.60
No. 37303	.70
No. 37304	.80
No. 37305	.90
No. 37306	1.00



## MIDGET COIL FORMS

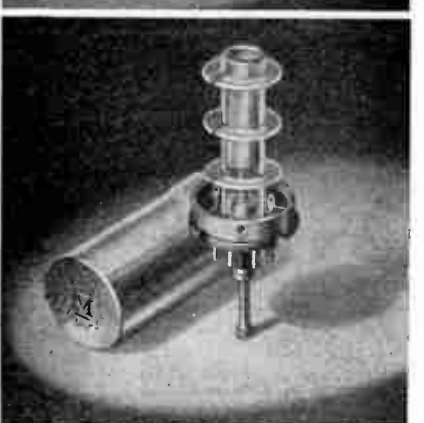
Made of low loss mica filled brown bakelite. Guide funnel makes for easy threading of leads through pins.

No. 45000	\$.35
No. 45004	.45
No. 45005	.45

## TUNABLE COIL FORM

Standard octal base of low loss mica-filled bakelite, polystyrene 1/2" diameter coil form, heavy aluminum shield, iron tuning slug of high frequency type, suitable for use up to 35 mc. Adjusting screw protrudes through center hole of standard octal socket.

No. 74001, with iron core	\$1.85
No. 74002, less iron core	1.50





# JAMES M MILLEN

MALDEN · MASSACHUSETTS

## 04000 and 11000 SERIES TRANSMITTING CONDENSERS

A new member of the "Designed for Application" series of transmitting variable air capacitors is the 04000 series with peak voltage ratings of 3000, 6000, and 9000 volts. Right angle drive, 1-1 ratio. Adjustable drive shaft angle for either vertical or sloping panels. Sturdy construction, thick, rounded, polished aluminum plates with 1 3/4" radius. Constant impedance, heavy current, multiple finger rotor contactor of new design. Available in all normal capacities.

The 11000 series has 16/1 ratio center drive and fixed angle drive shaft.

Code	Volts	Capacity	Price
11035	3000	35	\$ 6.90
11050	3000	50	7.14
11070	3000	70	7.80
04050	6000	50	16.00
04060	9000	60	18.00
04100	6000	90	18.00
04200	3000	205	20.00

## 12000 and 16000 SERIES TRANSMITTING CONDENSERS

Rigid heavy channeled aluminum end plates Isolantite insulation, polished or plain edges. One piece rotor contact spring and connection lug. Compact, easy to mount with connector lugs in convenient locations. Same plate sizes as 11000 series above.

The 16000 series has same plate sizes as 04000 series. Also has constant impedance, heavy current, multiple finger rotor contactor of new design. Both 12000 and 16000 series available in single and double sections and many capacities and plate spacing.

## THE 28000-29000 SERIES VARIABLE AIR CAPACITORS

"Designed for Application," double bearings, steartite end plates, cadmium or silver plated brass plates. Single or double section .022" or .066" air gap. End plate size: 19/16" x 11/16". Rotor plate radius: 3/4". Shaft lock, rear shaft extension, special mounting brackets, etc., to meet your requirements. The 28000 series has semi-circular rotor plate shape. The 29000 series has approximately straight frequency line rotor plate shape. Prices quoted on request. Many stock sizes.

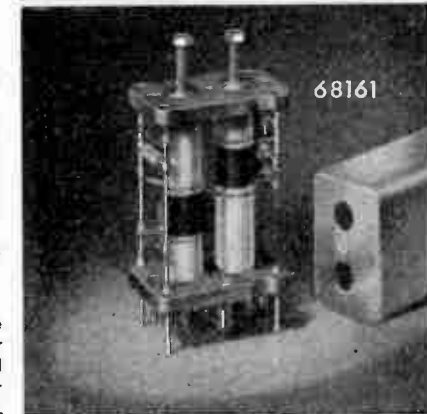
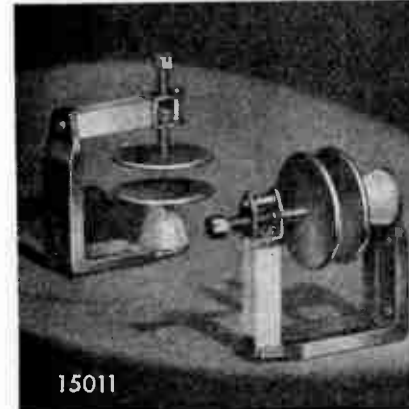
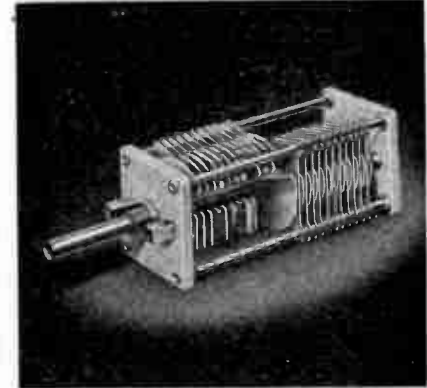
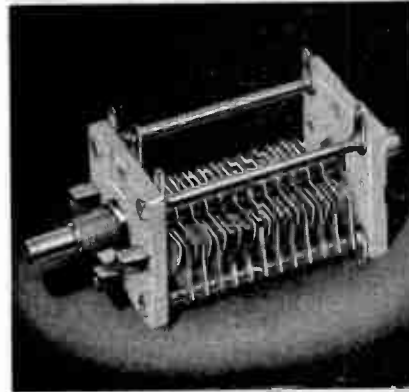
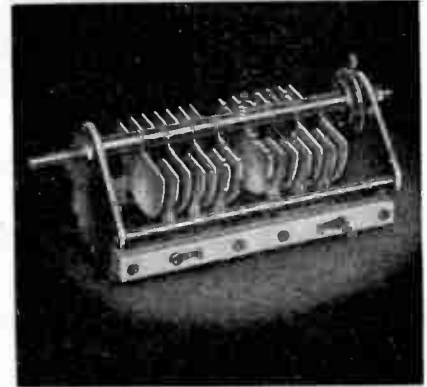
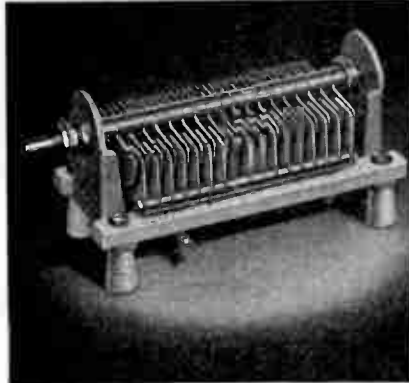
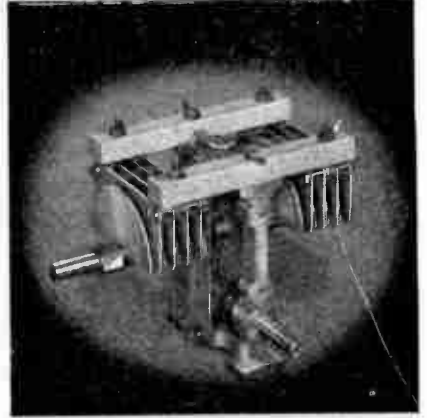
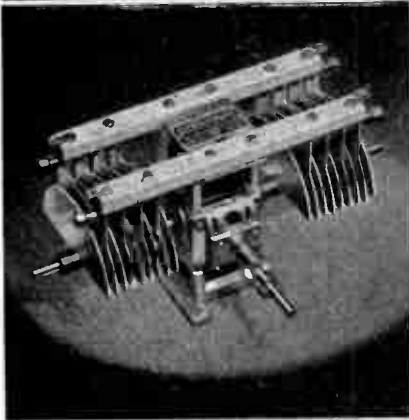
## NEUTRALIZING CAPACITOR

Designed originally for use in our own No. 90881 Power Amplifier, the No. 15011 disc neutralizing capacitor has such unique features as rigid channel frame, horizontal or vertical mounting, fine thread over-size lead screw with stop to prevent shorting and rotor lock. Heavy rounded-edged polished aluminum plates are 2" diameter. Glazed Seatite insulation.

No. 15011..... \$3.15

## I.F. TRANSFORMERS

The Millan "Designed for Application" line of I.F. transformers includes air condenser tuned, and permeability tuned types for all applications. Standard stock units are for 456, 1600 and 5000 kc.B.F.O. also available.



15011

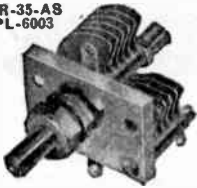
68161

# STANDARDS OF COMPARISON

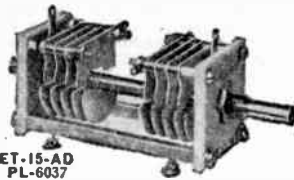
## TRIM-AIR MIDGET CAPACITORS

Combine essential sturdiness with the flexibility obtained only in a spacer-built rotor and stator type of assembly.

ZR-35-AS  
PL-6003



ET-15-AD  
PL-6037



### GENERAL SPECIFICATIONS:

#### CAPACITY CHARACTERISTIC: S.L.C.

**FRAME:** End Plates of 5/32" thick Isolantite.

**SHAFT:** 1/4" diameter, nickel plated brass.

**PLATES:** .020" thick aluminum, specially treated to remove burrs.

**FINISH:** Spacers, bushing nuts and screws nickel plated brass.

**MOUNTING:** Singles require one 3/8" hole in panel; Duals provided with four No. 4-36 screws in square brass tie rods. Trim-Air mounting posts or brackets fit both single and dual types. Singles are fitted with tapered nuts acting on split bushing for locking rotor shaft for fixed tune. Duals have rear shaft extension for coupling to other units and have a removable inter-section shield, on airgaps of .020 and .030.

**Note:** Single section Trim-Airs normally stocked with full length shaft for knob or dial. Stub shaft equivalents, with slot for screw driver adjustment only, available to order. "ZS" type singles have .040" thick plates with rounded buffed edges.

#### SINGLE TRIM-AIR CONDENSERS (Long Shaft Construction)

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length	List Price
PL 6016	ZU-75-AS	75	2.7	15	.020	1 1/2	\$2.50
PL 6017	ZU-100-AS	100	3	19	.020	1 1/2	2.55
PL 6018	ZU-140-AS	140	5	27	.020	1 3/32	4.60
PL 6000	ZR-10-AS	10	1.2	3	.030	3/4	1.85
PL 6001	ZR-15-AS	15	1.5	5	.030	3 1/32	1.90
PL 6002	ZR-25-AS	25	2	7	.030	1 1/16	2.10
PL 6003	ZR-35-AS	35	2.5	11	.030	1 9/32	2.20
PL-6004	ZR-50-AS	50	2.8	13	.030	1 1/2	2.30
PL 6055	ZR-100-AS	108	6.6	29	.030	2 3/4	3.30
PL 6024	ZV-5-TS*	5	1.5	3	.060	3/4	1.85
PL 6044	ZT-5-AS	5	2	3	.070	3 1/32	2.10
PL 6010	ZT-10-AS	11	3.6	6	.070	1 1/16	2.15
PL 6011	ZT-15-AS	15	3	9	.070	1 1/2	2.25
PL 6012	ZT-30-AS	30	4	17	.070	2 1/32	2.75
PL 6022	ZS-4-SS	4	1.5	5	.140	1 1/2	2.75
PL 6023	ZS-7-SS	7	4	7	.140	1 7/32	3.05

\* Supplied with 2 segment stator for UHF circuits. Extra plate also supplied, making 3 plates as listed.

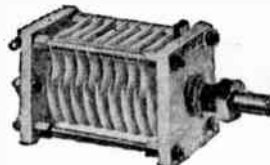
#### DUAL TRIM-AIR CONDENSERS

Per Section

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length	List Price
6041	EU-75-AD	75	2.7	15	.020	3 1/32	\$4.80
6042	EU-100-AD	100	3	19	.020	3 1/32	5.00
6043	EU-140-AD	140	5	27	.020	3 11/16	8.85
6028	ER-10-AD	10	1.2	3	.030	2 3/16	3.85
6029	ER-15-AD	15	1.5	5	.030	2 3/16	3.85
6030	ER-25-AD	25	2	7	.030	2 3/16	3.95
6031	ER-35-AD	35	2.5	11	.030	3 1/32	4.30
6032	ER-50-AD	50	2.8	13	.030	3 1/32	4.55
6065	ER-100-AD	100	6.9	25	.030	3 11/16	8.15
6037	ET-15-AD	15	3	9	.070	3 1/2	4.40
6039	ET-30-AD	30	4	17	.070	4 1/32	5.30
6033	ES-4-SD	4	1.5	5	.140	3 1/2	5.30
6035	ES-7-SD	7	4	7	.140	3 11/16	5.90
6298	ER-25-AD1*	25	2	7	.030	2 3/16	5.80

\* Insulated coupling between rotor sections.

## TRIM-AIR HEAVY DUTY SPECIALS



ET-30-ASP  
PL-6058

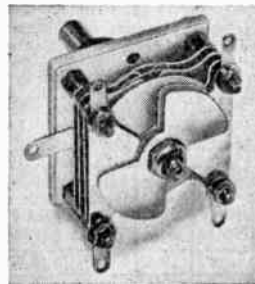
Four-tie-rod frame, ball and strap rear bearing construction, augmenting the simplified Trim-Air construction, to give even greater strength and rigidity. General characteristics otherwise same as standard Trim-Airs.

Dual section units have balanced rotor and stator sections and both single and dual section types may be single hole mounted or used with standard Trim-Air

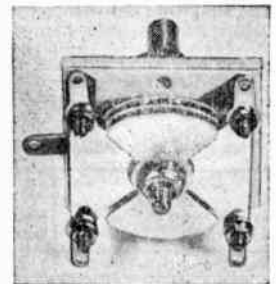
mounting accessories. Standard Trim-Air shaft locking nut may be used for fixed tune. PL-6069 and PL-6068 are duals with rear shaft extended; all others have ball and strap type rear bearing.

SINGLES	LIST	DUALS	LIST
PL 6056	ER-50-ASP \$4.35	PL 6057	ER-50-ADP \$4.80
PL 6059	EU-75-ASP 3.95	PL 6059	ER-50-ADP (rear sh. ext.) 8.70
PL 6058	ET-30-ASP 4.05	PL 6068	EU-140-ADP (rear sh. ext.) 11.60

## A NEW LINE OF CARDWELL MIDGET CONDENSERS FOR V.H.F.



PL-6113



PL-6076

Cardwell offers a new line of 90 degree condensers with butterfly rotor plates, fulfilling a demand created by engineers and amateurs since the publication of an article "Stabilizing The 144 Megacycle Transmitter" in April, 1946 "QST." Also see pages 351 to 353 inclusive in the 1946 ARRL Radio Amateurs Handbook. PL-6113 and PL-6076 are specified in these articles. Features of these 90 degree midget condensers are as follows:

Electrical Symmetry  
Low Distributed Inductance.  
No Moving Contacts.

Plates easily removable to change capacity range.  
Isolantite Insulation.

Single Hole Mounting.

Small Size; 1 7/16" x 1 13/32" per general outline dimensions for differential "Trim-Airs" as shown on Page 6 of Catalog No. 46.

These condensers are made to fit all standard Cardwell "Trim-Air" hardware.

Note maximum and minimum capacity values shown are measured from stator-to-stator and are effective values as used when a coil is connected stator-to-stator, with rotor floating.

#### CARDWELL V.H.F. 90 DEGREE TRIM-AIR MIDGETS

Part List No.	Type	Max. Cap.	Min. Cap.	No. Plates Rotor	No. Plates Stator	Air Gap	Length Over-all	List Price
6075	ER-3-BF/H	3	1.5	2	1	.030"	1 1/8"	\$2.60
6076	ER-6-BF/H	5	1.5	3	2	.030"	1 1/8"	2.70
6077	ER-9-BF/3	7	2.0	4	3	.030"	1 1/8"	2.80
6078	ER-15-BF/H	13	3.0	7	6	.030"	2 1/2"	3.40
6079	EU-25-BF/H	20.4	3.4	8	7	.020"	2 1/8"	3.65
6080	EU-35-BF/H	27	4.0	10	9	.020"	2 1/8"	3.80
**6081	EU-50-BF/S	38	6.0	14	13	.020"	2 1/8"	7.65
*6113	ER-14-BF/SL	13	10.4	(3) Disc (2) 90°	(2) 150° (2) 90°	.030"	2 1/8"	4.00

\* Minimum capacity loaded by circular rotor plates.

\*\* Iso. rear end plate—ball and strap rear bearing.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

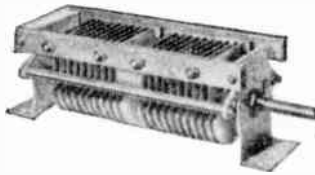
# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## MIDWAY TRANSMITTING CAPACITORS

The Midway is ideal for low and medium power transmitters for portable Mobile and aircraft equipment, due to its light weight, compact size and extremely sturdy construction. Incorporates original patented features of the larger "X" type standard transmitting condenser.



MT-100-GD PL-7030  
with PL-5051 Mtg. Brackets

### GENERAL SPECIFICATIONS:

**CAPACITY CHARACTERISTIC:** S.L.C.

**FRAME:** All aluminum end plates and tie rods.

**SHAFT:** 1/4" C.R. steel, cadmium plated.

**PLATES:** .025" aluminum. On sizes having airgap of .070" or over, plates have rounded edges, buffed to minimize corona loss.

**BEARINGS:** Brass, nickel plated shoulder type front bearing with ball thrust rear bearing.

**INSULATION:** Mycalex.

**MOUNTING:** 3 point front panel mounting by means of 3 screws and hex. posts. Two aluminum mounting feet with screws, Cardwell Part List No. 5052 for regular chassis mounting, provided instead, if so ordered. Type "M" special brackets (Part List No. 5051) permit inverted mounting.

### MIDWAY SINGLE CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Over End Plates	List Price
PL7000	MR-25-BS	25	6	3	.030	1 1/2	\$3.95
PL7001	MR-50-BS	50	6	5	.030	1 1/2	5.00
PL7002	MR-70-BS	70	7	7	.030	1 1/2	5.15
PL7003	MR-105-BS	112	9	11	.030	1 1/2	5.35
PL7004	MR-150-BS	150	10	15	.030	1 1/2	5.80
PL7005	MR-260-BS	260	13	25	.030	2 1/2	6.40
PL7006	MR-365-BS	365	16	35	.030	2 1/2	7.00
PL7015	MT-20-GS	25	8	5	.070	1 1/2	4.80
PL7016	MT-35-GS	35	6	7	.070	1 1/2	5.15
PL7017	MT-50-GS	50	10	11	.070	1 1/2	5.75
PL7018	MT-70-GS	70	10	15	.070	2 1/2	6.55
PL7019	MT-100-GS	100	14	21	.070	2 1/2	7.20
PL7020	MT-150-GS	150	18	31	.070	3 1/2	8.85
PL7021	MG-35-NS	35	14	15	.171	3 1/2	8.85
PL7024	MO-165-BS	165	15	25	.050	2 1/2	4.90

### MIDWAY DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL7007	MR-25-BD	25	5	3	.030	1 1/2	\$6.40
PL7008	MR-50-BD	47	7	5	.030	2 1/2	6.85
PL7009	MR-70-BD	70	8	7	.030	2 1/2	7.20
PL7010	MR-100-BD	112	9	11	.030	2 1/2	7.50
PL7011	MR-150-BD	150	10	15	.030	2 1/2	7.75
PL7013	MR-260-BD	260	13	25	.030	3 1/2	8.75
PL7026	MT-20-GD	20	6	5	.070	2 1/2	8.15
PL7027	MT-35-GD	35	8	7	.070	2 1/2	8.85
PL7028	MT-50-GD	50	9	11	.070	2 1/2	9.35
PL7029	MT-70-GD	70	11	15	.070	3 1/2	10.30
PL7030	MT-100-GD	100	13	21	.070	5 1/2	11.75
PL7031	MO-180-BD	190	15	29	.050	5 1/2	11.75

## "N" TYPE TRANSMITTING CAPACITORS

Designed for medium power high frequency transmitters and short wave therapy apparatus, the Cardwell "N" series maintains the customary high standard of Cardwell construction, yet eliminates closed circuit loops completely.



NP-85-DD  
PL-7107

**GENERAL SPECIFICATIONS:**  
**CAPACITY CHARACTERISTIC:** S.L.C.

**FRAME:** Improved aluminum end plates support heavy lateral ceramic insulating bars which carry the stators.

**SHAFT:** 1/4" diameter cadmium plated steel.

**PLATES:** Aluminum, .040" thick, with rounded edges. PL-7106 and 7116 have buffed and polished edges. PL-7105 has .025" thick plates, buffed and polished edges.

**BEARINGS:** Cardwell shoulder type front bearing, with ball thrust rear bearing.

**MOUNTING:** Can be single hole mounted, or by three mounting posts and screws, to front panel. Chassis mounting on feet which form part of end plates, or use Cardwell "M" brackets, Cardwell part No. 301, for inverted mounting, for lowest stator-to-ground capacity.

### ULTRA-HIGH FREQUENCY SINGLE CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Back of Panel	List Price
PL7100	NP-50-DS	50	9	13	.084	3 1/2	\$5.15
PL7101	NP-75-DS	75	11	19	.084	4 1/2	6.05
PL7102	NP-100-DS	100	13	25	.084	5 1/2	6.85
PL7103	NP-150-DS	150	19	39	.084	6 1/2	8.95
PL7104	NG-35-DS	35	11	15	.171	5 1/2	6.75

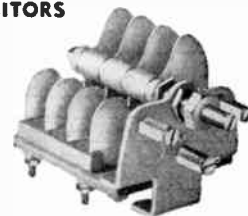
### ULTRA-HIGH FREQUENCY DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Back of Panel	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL7105	NT-50-GD	50	7	11	.070	4 1/2	\$8.85
PL7116	NP-15-ND	17	4	5	.084	4 1/2	8.40
PL7106	NP-35-ND	35	5	9	.084	4 1/2	8.85
PL7110	NP-15-DD	17	4	5	.084	4 1/2	7.50
PL7107	NP-35-DD	35	5	9	.084	4 1/2	7.90
PL7108	NP-50-DD	50	9	13	.084	5 1/2	8.85
PL7109	NP-75-DD	75	11	19	.084	6 1/2	10.60
PL7115	NA-12-NDI	13	6	7	.218	5 1/2	22.10

Note: NA-12-NDI is dual neutralizer, rotor sections insulated from each other. Capacity and nr. plates shown, is PER SECTION.

## "NA" NEUTRALIZING CAPACITORS

The "NA" group offers 180° neutralizing capacitors of restricted range, for dial or screw driver adjustment. Shaft lock for permanent setting. Adjustable airgap on NA-4-NS only by adjusting threaded bushing in aluminum end plate. Single rotor bearing with beryllium tension washer and special bushing for rigidity. Plates are .040" thick aluminum, rounded and buffed edges. Three point panel mounting or foot mounting.



NA-16-NS  
PL-7114

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Back of Panel	List Price
PL7111	NA-4-NS	4	3.25	2	.218	1 1/2	\$5.30
PL7112	NA-6-NS	6	4	3	.218	1 1/2	5.30
PL7113	NA-10-NS	12	6	6	.218	2 1/2	6.65
PL7114	NA-16-NS	16	7	8	.218	3 1/2	7.40

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## "X" TYPE STANDARD TRANSMITTING CAPACITOR

The original grounded rotor, metal frame variable air capacitor.

Rounded edges, polished aluminum plates, .040" thick on all but "XT" and "XR" types.

Frames, tie rods, bearing bushings, spacers and stator blocks, nicked brass. Cadmium plated 1/4" steel shaft supports securely locked rotor assembly. Mycalex insulation. Panel spaces 4/16" x 3/16". Panel mounting. N.P. brass mounting feet provided on special order, for chassis mounting. See Accessories.



XC-100-XS  
PL-8023

## "T" TYPE HEAVY DUTY TRANSMITTING CAPACITORS

6/4" wide, 5/8" high, plates unmeshed. Corona shields on stators for wider airgap types. End plates 1/8" thick, heavy nickel plated. Massive bearings, 3/8" stainless steel shafts; heavy, two finger phosphor bronze rotor contactor bears on sturdy contact ring built to carry very heavy current without power loss. Rotor plates 4 1/2" diameter, .050" thick aluminum. Heavy mounting feet formed as part of end plates. Ball thrust rear bearing. Mycalex insulation.



TK-300-US  
PL-9110

## "X" TYPE STANDARD SINGLES

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Over End Plates	List Price
PL8000	XR-50-PS	50	11	3	.080	1 1/2	\$5.05
PL8001	XR-100-PS	100	12	5	.080	1 1/2	5.15
PL8002	XR-160-PS	150	12.6	7	.080	1 1/2	5.30
PL8003	XR-250-PS	250	18	11	.080	1 1/2	5.40
PL8004	XR-375-PS	375	16	17	.080	2 1/4	6.15
PL8005	XR-500-PS	475	18	21	.080	2 1/4	7.55
PL8007	XR-1000-PS	950	30	41	.080	3 1/4	14.50
PL8013	XR-1500-PS	1500	50	65	.080	5	16.00
PL8048	XT-220-PS	220	20	21	.070	8 1/4	7.35
PL8050	XT-440-PS	440	40	48	.070	5	11.30
PL8040	XP-90-KS	90	16	11	.084	2 1/4	6.65
PL8041	XP-165-KS	165	22	19	.084	3 1/4	9.55
PL8043	XP-290-KS	290	35	33	.084	5	14.00
PL8044	XP-330-KS	330	37	37	.084	5 5/8	16.00
PL8029	XE-120-XS	120	19	17	.100	3 1/4	8.85
PL8031	XE-240-XS	240	30	33	.100	5 5/8	16.00
PL8025	XD-160-XS	160	28	27	.125	5 5/8	13.30
PL8032	XG-25-XS	25	8	5	.171	2 1/4	5.15
PL8033	XG-50-XS	50	15	11	.171	3 1/4	9.55
PL8034	XG-110-XS	110	26	23	.171	5 5/8	14.25
PL8020	XC-18-XS	19	8	5	.200	2 1/4	6.65
PL8021	XC-40-XS	40	15	11	.200	8 1/4	9.55
PL8022	XC-65-XS	65	20	17	.200	5	12.50
PL8023	XC-100-XS	100	28	25	.200	6 5/8	15.50
PL8037	XK-55-XS	55	20	15	.230	5	14.75

## "X" TYPE STANDARD DOUBLES

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL8018	XR-500-PD	500	18	21	.080	3 1/4	14.00
PL8068	XT-80-PD	80	11	9	.070	3 1/4	9.30
PL8070	XT-210-PD	210	22	21	.070	5	12.80
PL8065	XP-90-KD	95	15	11	.084	3 1/4	11.05
PL8066	XP-165-KD	165	23	19	.084	5 5/8	16.20
PL8067	XP-325-KD	325	38	37	.084	10 1/4	32.45
PL8061	XE-120-XD	120	19	17	.100	5 5/8	14.75
PL8062	XE-240-XD	240	32	33	.100	10 1/4	30.85
PL8060	XD-160-XD	160	28	27	.125	10 1/4	28.05
PL8063	XG-50-XD	50	14	11	.171	5 5/8	15.75
PL8064	XG-110-XD	110	27	21	.171	10 1/4	26.50
PL8056	XC-40-XD	40	14	11	.200	6 5/8	16.95
PL8057	XC-75-XD	75	21	19	.200	10 1/4	22.10
PL8081	XE-160-70-XQ Multi-Band				.100	10 1/4	40.60

## SINGLE HEAVY DUTY TRANSMITTING CONDENSERS

Parts List No.	Type	Max. Cap.	Min. Cap.	No. Plates	Air Gap	Length Inside End Plates	List Price
PL9009	TJ-315-US	315	36	31	.168	8 1/2	40.50
PL9001	TC-200-US	200	35	23	.200	7	35.40
PL9002	TC-300-US	300	42	35	.200	10	40.50
PL9036	TK-300-US	312	53	39	.230	12 1/4	47.00
PL9011	TL-50-US	45	15	7	.294	3 1/8	20.90
PL9013	TL-80-US	85	24	13	.294	5 5/8	26.55
PL9014	TL-100-US	98	26	15	.294	6 1/4	27.85
PL9016	TL-160-US	160	40	25	.294	9 5/8	37.95
PL9019	TZ-40-RS	43	18	11	.500	7	30.35
PL9020	TZ-80-RS	88	32	21	.500	12 1/2	40.50

## DOUBLE HEAVY DUTY TRANSMITTING CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Inside End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL9026	TJ-150-UD	150	21	15	.168	8 1/2	40.50
PL9027	TJ-200-UD	211	30	21	.168	10 3/4	45.55
PL9021	TC-100-UD	112	20	13	.200	8 1/2	39.20
PL9022	TC-160-UD	160	30	19	.200	11	43.00
PL9023	TC-200-UD	200	35	23	.200	13	48.05
PL9024	TC-250-UD	255	40	29	.200	16	53.15
PL9030	TL-50-UD	45	15	7	.294	6 1/8	31.65
PL9031	TL-70-UD	70	19	11	.294	9	36.70
PL9033	TL-100-UD	98	26	15	.294	11 1/4	43.65
PL9034	TL-160-UD	160	40	25	.294	18 3/4	55.65
PL9029	TKD-100-UD	110	30	21	.350	18 3/4	55.65
PL9035	TZ-40-RD	43	18	11	.500	13 1/8	48.55

## TYPE "J" PLUG-IN FIXED AIR CONDENSERS

For fixed capacity loading.

Plates easily removed. All "J" types have 2/4" square x 1/4" Aisimag No. 196 ceramic end plates. Supplied with banana plugs to fit "JB" Jack Base. On special order provided with hexagonal brass mounting pillars and mounting screws for permanent installation.



JCO-50-OS  
PL-9705



"JB" Jack Base  
PL-5102

## TYPE "J" PLUG-IN FIXED AIR CONDENSERS

Parts List No.	Type	Capacity	No. Plates	Air Gap	Length Overall	List Price
PL9705	JCO-50-OS	50 mmf.	13	.250	5 5/8	18.10
PL9704	JCO-25-OS	25 mmf.	7	.250	3 3/4	5.85
PL9703	JD-100-OS	100 mmf.	17	.125	4 3/8	9.55
PL9702	JD-80-OS	80 mmf.	13	.125	4	8.10
PL9701	JD-50-OS	50 mmf.	8	.125	3 3/8	5.85
PL9700	JD-25-OS	25 mmf.	4	.125	2 1/2	4.10
PL9706	JIR-750-OS	750 mmf.	33	.030	4 5/8	13.00
PL9707	JKD-50-OS	50 mmf.	18	.350	8 1/4	9.70

## JACK BASE FOR "J" FIXED AIR CONDENSERS

Size: 2 1/2" x 3 1/2" x 1/4".

Material: Aisimag No. 196.

Complete with mounting posts, screws and nuts.

Type "JB" (PL-5102) List Price \$1.25

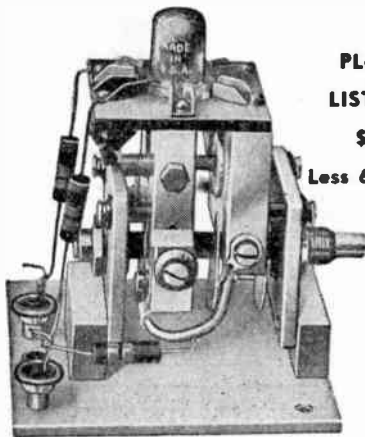
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# CARDWELL CONDENSERS

## THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## V.H.F. OSCILLATOR KIT



**PL-20,024**  
**LIST PRICE**  
**\$18.00**  
 Less 6-F-4 Tube

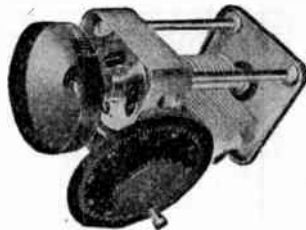


This kit includes 3 sets of coils covering 144-148 mc, 220-225 mc, 420-450 mc bands. (The 6F4 tube is not included.) Ideally suited for local oscillator, for super-heterodyne receiver,

as plate modulated oscillator for low power transmitter or receiver, driver unit for amplifier tube in higher powered transmitter, V.H.F. signal generator, etc., etc.

## CARDWELL PRECISION CAPACITOR Type PL-24,050

Designed for frequency meters requiring maximum mechanical and electrical precision. Type No. 4.080 gear and worm driven capacitor incorporates special design features representing years of research and usage of this component in special measurement equipment which has successfully withstood most rigorous usage our armed forces could give it.



Frequency Meter Condenser  
 PL-24,050

**CAP. RANGE:** Max. Cap. 220 mmfd., Min. Cap. 21 mmfd.  
**PLATE SHAPE:** S.L.F.  
**DI-ELECTRIC SUPPORTS:** Steatite.  
**BACKLASH:** Negligible.  
**RESETTABILITY:** To 10 parts in one million.  
**GEAR DRIVE:** Precision split worm gear, equipped with precision ball bearings. Ratio—100 : 1 over 360 degrees.  
**DIALS:** 3" DRUM: 50 divisions over 180° condenser rotation. 3" FAST RUNNING DIAL: Graduated 100 divisions, makes 1 revolution for each drum division. VERNIER RING: Divides each division on fast running dial into 10 parts.  
**DIMENSIONS:** 5 5/8" lg. (over drum dial) x 3 1/8" deep x 3 1/8" high.  
**WEIGHT:** 1 1/2 lbs. (with cast aluminum frame).  
**ROTOR CONTACT:** Silver plated phosphor bronze spring, with 2 silver contacts bearing on silver plated disc.  
**MOUNTING:** 3 point, to bottom of main casting.  
**PRICE:** Capacitor, PL-24,050, Type 4.080, only..... List \$95.00  
 Drum Dial ..... List \$ 5.95  
 Fast Running Dial ..... List \$12.75  
 Vernier Ring ..... List \$ 2.50

## TYPE "P" LIGHT HEAVY WEIGHT TRANSMITTING CAPACITORS

Designed to accommodate capacitance values up to 150 mmfd. per section in a dual section type having an airgap of .500", the "P" type construction permits higher capacity for a given airgap, and therefore a shorter frame than the "T" type construction. Typical Cardwell sturdiness is built-in, and the "P" type is probably the lightest transmitting condenser built for its size, yet completely satisfactory for heavyweight use. No single section types are catalogued; parallel or series connect for double or half single section capacity listed in table.



PK-125-QD  
 Special

**GENERAL SPECIFICATIONS:**  
**FRAME:** End plates are 1/8" thick formed aluminum, satin finish.  
**SHAFT:** 3/8" diameter, non-magnetic stainless steel, extended both front and rear end.  
**PLATES:** .064" thick, rounded and buffed edges. Rotor plates are 6 3/4" in diameter.  
**BEARINGS:** Heavy nickel plated brass front and rear shoulder bearings.  
**ROTOR CONNECTION:** Heavy, two finger N.P. phosphor bronze wiper bears on 1/4" thick N.P. brass contact ring, at each end.  
**STATOR CONSTRUCTION:** Plates permanently staked into slotted, rounded edge aluminum stator blocks.  
**INSULATION:** Mycalex (glass bonded mica).  
**MOUNTING:** 3 clearance holes for No. 10 screws in each side of each end plate permitting mounting on any side, as well as provision for mounting associated components such as inductance coil mountings, etc.

## TYPE "P" LIGHT HEAVYWEIGHT DUAL CONDENSERS

Parts List No.	Type	Per Section			Air Gap	Length Over End Plates	List Price
		Max. Cap.	Min. Cap.	No. Plates			
PL9208	PJ-750-QD	750	50	35	.168	20 1/2	Special
PL9210	PK-200-QD	210	30	13	.230	11 1/2	Special
PL9203	PKD-70-QD	70*	15*	7	.350	9 1/2	\$75.00
PL9204	PKD-100-QD	115	22	9	.350	11 1/2	83.50
PL9205	PZ-50-QD	50*	15*	7	.500	11 3/4	82.25
PL9206	PZ-70-QD	70*	20*	9	.500	14 1/4	87.90
PL9207	PZ-100-QD	91	23	11	.500	16 1/2	100.00
PL9209	PZ-150-QD	150	40	19	.500	24 3/8	125.00

\* Estimated value.  
 Tolerance for maximum and minimum capacity values: ±10%.

## DISC TYPE NEUTRALIZER

For neutralizing low capacity transmitting triodes. Glazed steatite insulation. Polished aluminum discs. Fine screw thread adjustment in long nickel silver bearing—no wobble. Knurled thumb nut for easy locking. Heavy satin finish aluminum support and base plate.



ADN, Neut. Conds.  
 PL-7118

## DISC TYPE NEUTRALIZING CONDENSERS

Item No.	Parts List No.	Type	Max. Cap.	Air Gap	Min. Cap.	Air Gap	List Price
1	PL7118	ADN	7 mmfd.	.100"	1 mmfd.	.700"	\$4.40
2	PL7119	BDN	15 mmfd.	.200"	3 mmfd.	1.000"	7.40

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION

# STANDARDS OF COMPARISON

## INSULATED COUPLINGS

For isolating R.F. controls. Ceramic insulation (Alsimag No. 196). All flexible types have N.P. phosphor bronze springs, and heavy N.P. brass hubs, permanently swedged or spin riveted into the springs. Two fillister head, cup point, case hardened steel set screws in each hub insure positive lock to shaft.

All rigid types have improved three-point-spider construction, carefully machined solid brass castings, and are absolutely rigid.

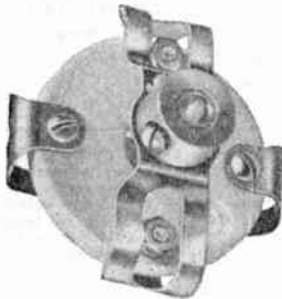
Flexible types C, D, E and F fit both 1/4" diameter shaft or a 3/8" shaft by removing bushing supplied.



"ENF" Rigid Coupling  
PL-5201



"FNF"  
PL-5013



"C"  
PL-5004



"A"  
PL-5000

### INSULATED COUPLINGS—Flexible

Parts List No.	Type	DIMENSIONS		Peak Flashover	To Fit Shaft Diameter	List Price
		"A" (Width)	"B" (Length)			
5000	A	1 3/8"	3/4"	3,700 V.	1/4"	\$0.75
5002	B	1 3/8"	1 3/8"	7,000 V.	1/4"	.75
5202	AB	1 3/8"	3 1/8"	5,000 V.	1/4"	1.00
5004	C	2 5/8"	2 3/4"	13,500 V.	1/4" & 3/8"	3.55
5006	D	2 5/8"	1 3/4"	9,000 V.	1/4" & 3/8"	3.55
5008	E	2 1/4"	1 3/4"	10,000 V.	1/4" & 3/8"	1.90
5010	F	2 1/8"	1 1/8"	5,000 V.	1/4" & 3/8"	1.90

### INSULATED COUPLINGS—Rigid

5014	CNF	2 1/4"	2 1/4"	12,000 V.	3/8"	4.45
5201	ENF	1 3/8"	1 1/8"	10,000 V.	1/4"	1.50
5013	FNF	1 3/8"	1 1/8"	7,500 V.	1/4"	1.25

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

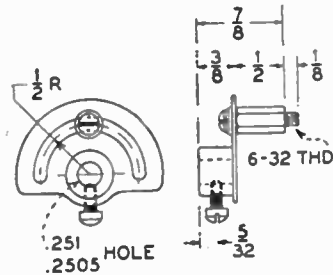
## ACCESSORIES

### "MIDWAY" MOUNTING FEET

Heavy aluminum, with 2 screws; for Midway condensers. Parts List No. 5052.....List (Pair) \$0.25

### INDUCTANCE CLIPS

For tapping air-wound inductors. Cadmium plated phosphor bronze spring clips for No. 12 or 14 wire. Thin blades prevent shorting turns. Type 804-A. Parts List No. 5104.....List Price \$0.20



### ROTOR LOCK

For locking "X" standard or "M" Midway rotor shafts in position for fixed tune. Can be set behind panel or attached to any 1/4" shaft, mounted directly on front of panel. Nickel plated brass; diameter 1/2".

Parts List No. 5100 (Type ARL).....List Price \$0.75

### SHAFT LOCK PANEL BUSHING

Long panel bushing for 1/4" shafts, has tapered nut for locking shaft in position. Fits 3/8" hole in panel. Complete with panel nuts. Nicked brass.

Parts List No. 5055 (Type ALB).....List Price \$0.40

### TYPE "M" BRACKET

Use with type "N" U.H.F. duals or "M" Midway condensers. Turns condenser upside down for shortest plate leads in balanced R.F. amplifier. Regular mounting feet can be used to support a tank coil or jack base. Made of strong, satin finished, 1/16" aluminum, and supplied with proper screws and lock washers.

Parts List No. 5051.....List Price, each \$0.25

### "STANDARD" TYPE "X" MOUNTING FEET

Heavy nickel plated brass; for "X" transmitting types, with four screws.

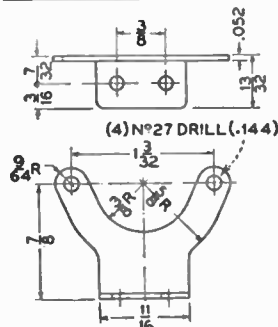
Parts List No. 5053.....List Price, pair \$0.25

### TRIM-AIR ACCESSORIES

As catalogued, Trim-Air singles are equipped for single hole mounting. Additional mounting accessories listed below are sold separately.

MOUNTING POSTS—(1/4" hex. x 3/4" long, tapped 6-32 N.P. brass). Pair, with screws and lockwashers.

Parts List No. 5054.....List Price \$0.25



### "TRIM-AIR" MOUNTING BRACKET

For dual and single Trim-air condensers. Insulated from rotor and stator; N.P. brass. with two screws and nuts.

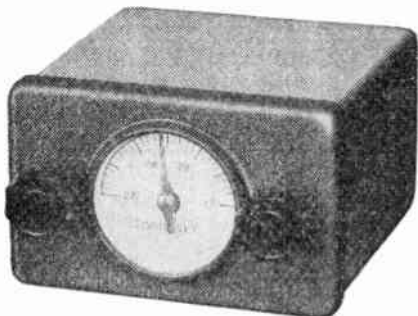
Parts List No. 5050.....List Price, each \$0.20

# CARDWELL CONDENSERS

THE ALLEN D. CARDWELL MANUFACTURING CORPORATION



**GONSET CO.**  
BURBANK, CALIF.



### STANDARD MOBILE CONVERTER

The GON-SET 10-11 Meter Converter, complete with built-in pre-selection, is designed for use with either broadcast, auto, or communications receivers. Attaching the Converter to your present radio provides unexcelled mobile or fixed reception. GON-SET converters have been manufactured since 1938 and are used world-wide. Long experience, together with precision design and construction assures a superior product. Ideal for surplus receivers.

#### SPECIFICATIONS

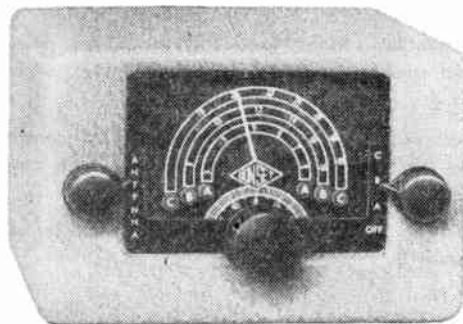
- Tubes: 6AK5 - R.F. 6AK5 - Mixer. 6C4 - OSC. 0B2 Voltage Regulator.
- Output: 1500-2000 KC.
- 8-1 Vernier.
- Illuminated Dial.
- Connecting Cables Included.
- Weight: 2 lbs.
- Single Dial Control.

#### MODELS AVAILABLE

6 (50-54 M.C.)    10-11 (27-30 M.C.)    15 (21-22 M.C.)    20 (14-14.5 M.C.)    75 (3-4 M.C.)

- Other Frequencies on Special Order •

Price Complete **\$39.95\***



### "3-30" MOBILE CONVERTER

- Continuous coverage, 3 to 30 Mc.
- Bandsread dial with plenty of bandsread on amateur bands.
- High sensitivity on a short whip.
- High stability. No "warm up" drift.
- Four working (r.f.) tubes give lots of reserve gain.
- Extremely compact. Same size as famous GONSET "10-11" mobile converter, only 5 1/4" by 3 1/2" by 5 1/4" deep.
- Low plate current drain (approximately 10 ma.).

Price Complete **\$39.95\***



**CLIPPER**

A simple, inexpensive noise silencer designed specifically to aid in reduction of such interference as ignition noise, power leaks, electric razors, etc. The unit is small in size, 2" x 4" x 1 1/2", and weighs less than one pound. This silencer makes an ideal attachment for communication and mobile receivers. Complete with installation instructions and connecting cables.

Price Complete **\$8.25\***

### 10-20-75 MOBILE CONVERTER

Complete bandsread on 10-20-75 meter fone bands. The finest converter for mobile ham operation: 4 Tubes, same case and general dial arrangement as "3-30".

## Announcing --- "GONSET LINE"

LOW LOSS OPEN WIRE LINE (lowest loss lead-line manufactured)

The new GONSET LINE is the answer to television and amateur lead line requirements. Its extremely low loss (lowest loss line manufactured) makes it ideal for any lead in use where highest efficiency is desired. The loss of GONSET LINE is less than 1/6th that of ordinary molded, 300 ohm ribbon (when new) and still less when molded ribbon ages. GONSET LINE utilizes air for insulation, with polystyrene for spacers every 6 inches. Due to air insulation and polystyrene spacers it is practically not affected by weather such as ordinary molded ribbon. GONSET LINE therefore, is ideally suited for television reception in fringe and beach areas as well as long runs.

The wire itself is 18 gauge double formvar spaced 1". It is packaged with a continuous strip of corrugated paper to make easy handling.

Universal screw eye type of insulators are available that will take either GONSET LINE or ordinary molded ribbon. The impedance is 450 ohms, and will substitute for 300 ohm ribbon without any special matching. There are, however, 450-300 ohm transformers available for those who wish to experiment.

**GONSET LINE**..... \$0.20 per ft. list  
(Available 100', 250', 500' Packages)

**Standoff Insulators**.....\$7.42 per 100 list  
Universal 5/2" screweye type. (Fits either Gonset Line or ordinary ribbon.) Part #1501

**STANDOFF SPRING**...\$45.00 per 100 list  
Used with Standoff Insulators to provide constant spring tension to GONSET LINE (see back page). Part #1502

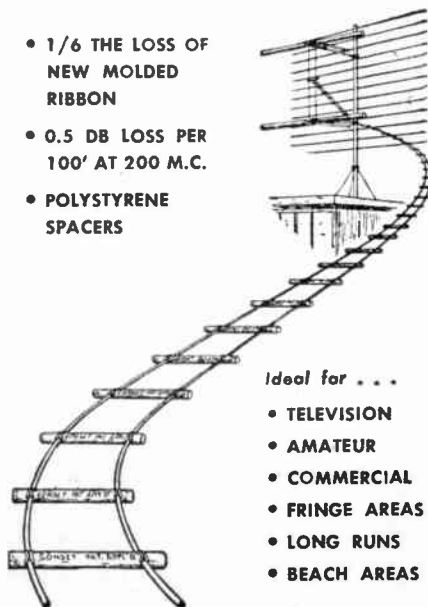
**Universal 7 1/2" Mast Mounting**  
\$22.50 per 100 list  
Type for masts up to 2 3/4" diameter. (Fits either Gonset Line or ordinary ribbon.) Part #1503

**Matching Transformers**.....\$1.75 list  
450-300 ohm. For all channel reception. Part #1504

**Matching Transformers**.....\$1.50 list  
450-300 ohm. For high channel reception only. Part #1505

**Splicing Blocks**.....\$0.50 list  
Part #1506

- 1/6 THE LOSS OF NEW MOLDED RIBBON
- 0.5 DB LOSS PER 100' AT 200 M.C.
- POLYSTYRENE SPACERS



Ideal for . . .

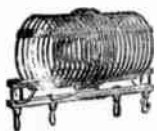
- TELEVISION
- AMATEUR
- COMMERCIAL
- FRINGE AREAS
- LONG RUNS
- BEACH AREAS

"YOUR ANTENNA IS NO BETTER THAN ITS LEAD-LINE."



# AIR INDUCTORS

BARKER & WILLIAMSON • UPPER DARBY, PA.



## ANTENNA INDUCTORS TYPES TA AND HDA

Wound with tinned copper wire for ease in tapping feeders to coils. Equipped with fixed center links for coupling to either fixed or variable linked final tank circuits through a low impedance line. Two tinned clips come with each coil. TYPE TA COILS for power input up to 500 watts. TYPE HDA COILS for power inputs of one kilowatt.

### SPECIFICATIONS

Band	Stock No.	Type	Capacity to Res. L.F. End of Band mmfd.	Net Price
<b>TA TYPES</b>				
10	3601	10TA	20	\$2.89
15	3602	15TA	23	2.96
20	3603	20TA	23	2.96
40	3604	40TA	34	3.30
80	3605	80TA	50	3.65

Stock No. 3321 Jack Bar Assembly for TA Inductors.

### HDA TYPES

Band	Stock No.	Type	Capacity to Res. L.F. End of Band mmfd.	Net Price
10	3607	10HDA	20	5.85
15	3608	15HDA	20	6.54
20	3609	20HDA	20	6.54
40	3610	40HDA	20	6.88
80	3611	80HDA	34	7.56

Stock No. 3721 Jack Bar Assembly for HDA Inductors.

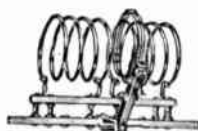


## B & W MININDUCTORS

For use in limited space—can be cut to size. Amazingly high Q characteristic. Useful for tank circuit coils, R-F chokes, high-frequency I-F transformers, loading coils, etc.

### SPECIFICATIONS

Catalog No.	Diameter	Turns per Inch	Length	Net Price
3001	1/2"	4	2"	\$0.31
3002	1/2"	8	2"	.31
3003	1/2"	16	2"	.31
3004	1/2"	32	2"	.31
3005	5/8"	4	2"	.37
3006	5/8"	8	2"	.37
3007	5/8"	16	2"	.37
3008	5/8"	32	2"	.37
3009	3/4"	4	3"	.44
3010	3/4"	8	3"	.44
3011	3/4"	16	3"	.44
3012	3/4"	32	3"	.44
3013	1"	4	3"	.50
3014	1"	8	3"	.50
3015	1"	16	3"	.50
3016	1"	32	3"	.50



## TYPE TVH INDUCTORS

For Powers up to 500 Watts Input

A special group of units with eight contact plug bars which gives greater flexibility than otherwise possible.

### SPECIFICATIONS

Band	Stock No.	Type	*Capacity to Res. L.F. End of Band mmfd.	Net Price
10	3501	10TVH	11	\$3.93
15	3502	15TVH	23	3.93
20	3503	20TVH	23	3.93
40	3504	40TVH	28	3.93
80	3505	80TVH	49	3.93

Stock No. 3507—Jack Bar Assembly for Type TVH Inductor 5.16

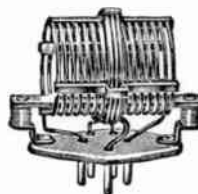
\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

## JUNIOR INDUCTORS

For Powers Up to 75 Watts Input

Fitted with standard five-prong steatite base. Small size for compact construction. May be used in the oscillator, buffer or final amplifier stage with input powers up to 75 watts and plate voltages up to 850. Three different assemblies provided, any of which may be used in capacity-coupled circuits by omitting connection to the links.

AMATEUR NET ..... \$1.38 ea.



### SPECIFICATIONS

Band	Stock No.	Type	*Capacity to Res. L.F. End of Band mmfd.
<b>End Linked Models</b>			
5	3100	5JEL	15
10	3101	10JEL	22
15	3102	15JEL	22
20	3103	20JEL	34
40	3104	40JEL	47
80	3105	80JEL	60

### Center Linked Models

5	3107	5JCL	15
10	3108	10JCL	16
15	3109	15JCL	16
20	3110	20JCL	16
40	3111	40JCL	33
80	3112	80JCL	58

### Variable Link Models

5	3114	5JVL	15
10	3115	10JVL	22
15	3116	15JVL	27
20	3117	20JVL	21
40	3118	40JVL	31
80	3119	80JVL	46

\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

## B & W TURRET ASSEMBLIES

Makes possible fast, positive band switching. Unique switching assembly allows unused coils to be shorted, thus eliminating absorption effects. All units cover 80, 40, 20, 15 and 10 meter bands.

B & W 75-WATT 2A "BAND HOPPERS"

Uses same coil design as B & W Juniors.

Unusually compact panel controlled unit.

It may be used for interstage coupling

between two beam power tubes or between beam power tubes and triodes.

Stock No. 3121 ..... Amateur Net \$4.81

B & W 75-WATT TURRETS—provide a means for link coupling

single ended or push-pull low power stages. Complete assembly is

mounted on a positive action switch arranged for panel mounting

through a single 3/8" hole. Turrets may be used with tubes

operating at voltages up to 850.

Stock No. 3810—Type JTCL—Center linked, center tapped coils.

Amateur Net \$9.25

Stock No. 3811—Type JTEI—End linked, untapped coils.

Amateur Net \$9.38

B & W 150-WATT TURRETS—Supplied in both center and end

link models for both single- and double-ended circuits. Operation

is by a positive action switch arranged for panel mounting through

a single 3/8" hole. Turrets may be used with tubes operating at

voltages up to 1000 volts.

Stock No. 3812—Type BCL—Center linked, center tapped coils.

Amateur Net \$11.69

Stock No. 3813—Type BEL—End linked, untapped coils.

Amateur Net \$11.69



## 3400 SERIES INDUCTORS

FOR POWERS UP TO 500 WATTS

Give the utmost in sturdy construction and

electrical flexibility. Same as those supplied

by B & W to the armed forces during the war.

Each coil has an individual internal center

coupling, adjustable over 360°—permitting pre-

cision impedance matching up to 600 ohms, thus providing flexibility

far in excess of any installation requirements.

Amateur Net \$7.50 each

### SPECIFICATIONS

Band	Stock No.	*Capacity to Res. L.F. End of Band mmfd.
10	3401	24
15	3402	25
20	3403	30
40	3404	30
80	3405	50

Stock No. 3321—Steatite Jack Bar Assembly.

\*Actual condenser capacity will be smaller by the sum of the tube output and wiring capacities, generally between 5 and 20 mmfd.

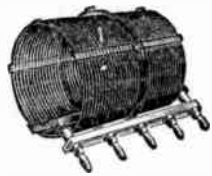




# AIR INDUCTORS

**BARKER & WILLIAMSON · UPPER DARBY, PA.**

- MINIMUM DIELECTRIC IN THE FIELD OF THE COIL
- EXTREMELY LOW LOSSES
- RUGGED CONSTRUCTION
- EXCELLENT APPEARANCE
- LOW COST



**TYPE HD1  
(Fixed Link)**

Each AIR INDUCTOR is a completely finished unit. All coils are equipped with banana type plugs . . . Type "B" is for use in oscillator and buffer-doubler stages developing up to 100 Watts power. Type "T" is especially suited for high powered neutralized buffer and final tank stages where powers of 500 Watts are developed. Type "HD" is for maximum power — handles a Kilowatt with ease.

## SPECIFICATIONS

Stock No.	Type	Net Price
<b>TYPE B</b>		
<b>MODELS WITHOUT LINK— CENTER TAPPED</b>		
5	8200 5B	<b>\$1.38</b>
10	8201 10B	<b>1.38</b>
15	8202 15B	<b>1.45</b>
20	8203 20B	<b>1.45</b>
40	8204 40B	<b>1.79</b>
80	8205 80B	<b>2.14</b>

Stock No.	Type	Net Price
<b>END LINK MODELS— WITHOUT TAP</b>		
5	8207 5BEL	<b>2.41</b>
10	8208 10BEL	<b>2.41</b>
15	8209 15BEL	<b>2.48</b>
20	8210 20BEL	<b>2.48</b>
40	8211 40BEL	<b>2.83</b>
80	8212 80BEL	<b>3.16</b>

Stock No.	Type	Net Price
<b>CENTER LINK MODELS— CENTER TAPPED</b>		
5	8214 5BCL	<b>2.41</b>
10	8215 10BCL	<b>2.41</b>
15	8216 15BCL	<b>2.48</b>
20	8217 20BCL	<b>2.48</b>
40	8218 40BCL	<b>2.83</b>
80	8219 80BCL	<b>3.16</b>

Stock No.	Type	Net Price
<b>VARIABLE LINK MODELS— CENTER TAPPED</b>		
5	8221 5BVL	<b>1.93</b>
10	8222 10BVL	<b>1.93</b>
15	8223 15BVL	<b>2.00</b>
20	8224 20BVL	<b>2.00</b>
40	8225 40BVL	<b>2.28</b>
80	8226 80BVL	<b>2.61</b>

Stock No. 3228—Steatite Jack Bar Assembly for end or center link type B Inductors, old Type A56.  
Stock No. 3229—Jack Bar and Swinging Link for BVL Inductors.

Stock No.	Type	Net Price
<b>TYPE T</b>		
10	8301 10T	<b>1.51</b>
15	8302 15T	<b>1.59</b>
20	8303 20T	<b>1.59</b>
40	8304 40T	<b>1.93</b>
80	8305 80T	<b>2.28</b>

Stock No.	Type	Net Price
<b>CENTER LINKED MODELS— CENTER TAPPED</b>		
10	8308 10TCL	<b>\$2.89</b>
15	8309 15TCL	<b>2.96</b>
20	8310 20TCL	<b>2.96</b>
40	8311 40TCL	<b>3.30</b>
80	8312 80TCL	<b>3.65</b>

Stock No.	Type	Net Price
<b>VARIABLE LINKED— CENTER TAPPED</b>		
10	8315 10TVL	<b>2.20</b>
15	8316 15TVL	<b>2.28</b>
20	8317 20TVL	<b>2.28</b>
40	8318 40TVL	<b>2.61</b>
80	8319 80TVL	<b>2.96</b>

Stock No. 3321—Steatite Jack Bar Assembly for end or center link Type T Inductors, old Type A64.  
Stock No. 3322—Base Assy. and Swinging Link for TVL Inductors.

Stock No.	Type	Net Price
<b>TYPE HD</b>		
<b>MODELS WITHOUT LINK— CENTER TAPPED</b>		
10	8701 10HD	<b>3.10</b>
15	8702 15HD	<b>3.79</b>
20	8703 20HD	<b>3.79</b>
40	8704 40HD	<b>4.13</b>
80	8705 80HD	<b>4.81</b>

Stock No.	Type	Net Price
<b>CENTER LINKED MODELS— CENTER TAPPED</b>		
10	8708 10HDCL	<b>5.85</b>
15	8709 15HDCL	<b>6.54</b>
20	8710 20HDCL	<b>6.54</b>
40	8711 40HDCL	<b>6.88</b>
80	8712 80HDCL	<b>7.56</b>

Stock No.	Type	Net Price
<b>VARIABLE LINKED MODELS— CENTER TAPPED</b>		
10	8715 10HDVCL	<b>4.48</b>
15	8716 15HDVCL	<b>5.16</b>
20	8717 20HDVCL	<b>5.16</b>
40	8718 40HDVCL	<b>5.50</b>
80	8719 80HDVCL	<b>6.19</b>

Stock No. 3721—Jack Bar Assembly for HD and HDCL Inductors.  
Stock No. 3722—Base Assembly and SL for HDVCL Inductors.

## TYPE CX CONDENSER

Superior design! Only half the length of conventional units. Perfect electrical and mechanical symmetry. Designed for built-in neutralization. Integral mounting of B & W coils reduces lead lengths and resulting lead inductance to an absolute minimum.

Stock No. 3722-1—Type HD Jack Bar and SL assembly mounted on any type of condenser.  
Stock No. 3721-1—Type HD or HDL Jack Bar mounted on condenser.  
Stock No. 3507-1—Type TVH Jack Bar and SL mounted on condenser.  
Stock No. 3930-1—Single Vacuum Condenser mount.  
Stock No. 3930-2—Twin Vacuum Condenser mount.

### NEUTRALIZING PLATES AVAILABLE IN FOUR TYPES, DESIGNATED N1, N2, N3, and N4.

N1—will neutralize the HY114, HK24, RK31, HK54, TW75, and similar tubes.  
N2—will neutralize the 75T, 35T, 808, RK35, 852, and similar tubes.  
N3—will neutralize the 801, T-T220, T-T240, RK18, HK154, 811, 812, T55, 100TH, . . . 0TH, 806, 810, and similar tubes.  
N4—will neutralize the 833, T200, 805, GL152, 838, 203A, RK52, and similar tubes.

### "A" TYPE—.500" AIRGAP

Type	Capacity Per Section		Capacity Sections in Series		Net Price
	Max.	Min.	Max.	Min.	
CX11A	11	8	8	6	<b>\$12.52</b>
CX20A	20	11	13	8	<b>15.32</b>
CX30A	30	14	18	10	<b>17.59</b>
CX40A	40	18	23	12	<b>19.81</b>
CX49A	49	21	28	14	<b>22.08</b>
CX59A	59	24	33	16	<b>24.29</b>
CX68A	68	27	38	18	<b>26.50</b>
CX77A	77	30	43	20	<b>28.78</b>
CX87A	87	34	48	22	<b>30.99</b>
CX96A	96	37	53	24	<b>33.20</b>
CX105A	105	40	58	26	<b>35.47</b>
CX115A	115	43	62	29	<b>37.69</b>
CX124A	124	46	68	30	<b>39.90</b>

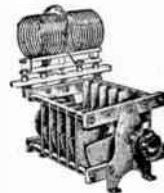
### "B" TYPE—.375" AIRGAP

CX11B	11	8	9	6	<b>12.17</b>
CX22B	22	11	15	8	<b>14.91</b>
CX34B	34	14	21	10	<b>17.18</b>
CX45B	45	17	28	12	<b>19.34</b>
CX58B	58	20	33	13	<b>21.49</b>
CX70B	70	23	38	15	<b>23.71</b>
CX82B	82	26	45	17	<b>25.80</b>
CX94B	94	29	50	19	<b>28.08</b>
CX106B	106	32	56	20	<b>30.17</b>
CX118B	118	36	62	22	<b>32.33</b>
CX130B	130	39	68	24	<b>34.60</b>
CX141B	141	42	74	26	<b>36.76</b>
CX153B	153	45	80	27	<b>38.91</b>

### "C" TYPE—.250" AIRGAP

CX13C	13	8	10	6	<b>11.88</b>
CX30C	30	11	18	8	<b>14.56</b>
CX45C	46	13	26	9	<b>16.72</b>
CX62C	62	16	34	11	<b>18.81</b>
CX78C	78	19	42	12	<b>20.97</b>
CX95C	95	22	50	14	<b>23.13</b>
CX111C	111	25	59	15	<b>25.16</b>
CX127C	127	28	67	17	<b>27.32</b>
CX143C	143	31	75	18	<b>29.42</b>
CX159C	159	33	83	20	<b>31.46</b>
CX175C	175	36	91	21	<b>33.73</b>
CX192C	192	39	100	23	<b>35.82</b>
CX208C	208	42	110	24	<b>37.86</b>

Standard plate thickness in all models, 1/16". Available on special order, 3/32" plates at 10% additional. Special features: Explanation: The type of each condenser designates its capacity and plate spacing as follows: CX100 indicates 100 mmfd. per section. Letters A, B, C, or D denotes plate spacing: A—.500"; B—.375"; C—.250"; D—.187". Following N# denotes Neutralizing plates.



## "BABY" AIR INDUCTORS

(25 WATT RATING)

Just the thing for crowded layouts, portables, field transmitters! The smallest, most efficient, most practical 25-watt coils ever available to amateurs. "BABIES" measure only 1 1/2" x 1 3/4", are made by a special B&W process which insures

perfect air-spacing, maximum strength, fine appearance and ultra-high efficiency with an absolute minimum of insulating material. Available in five types, from 10 to 160 meters. Conservatively rated. Universal 5-prong Aismag 196 bases. . . . . **Net Any Type \$1.04**

	Straight Coil	Center Tapped	End Linked	Center Linked	Inductance	Capacity
80M	MC	MEL	MCL	40	50	
40M	MC	MEL	MCL	14	35	
20M	MC	MEL	MCL	3.5	35	
15M	MC	MEL	MCL	2.7	35	
10M	MC	MEL	MCL	1.1	80	

\*Total effective capacity required to effect resonance on low frequency end of specified band.



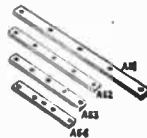
## "BABY" TURRETS

35-WATT RATING

These compact 5-band switching units cover amateur bands from 10 to 80 meters. They may be tuned in all types of service with any of the 50 mmfd. midget condensers. Their sturdy construction and unique design assure permanent coil alignment and maximum efficiency with a minimum number of tubes. Four types—BTM, straight untapped BTCT, center tapped; BTEL, end linked and BTCL, center linked—provide vastly improved band-switching efficiency in low-power transmitters and exciter stages. **Net, Any Type . . . . . \$8.44**

## B & W PLUG AND JACK BARS

Made of high quality steatite. Ample size to insure excellent strength. They provide experimenter with the same units that are used in B & W inductors. Can also be used as spreaders for feeders and other parts of the antenna system.



### SPECIFICATIONS

Stock No.	Type	Length	Width	Thick. ness	Mounting Dimen- sion	Used on Series	Net Price
8914	Plug	3 1/2"	1/2"	3/16"	4 1/2"	B	<b>\$0.20</b>
8915	Jack	4 1/2"	1/2"	3/16"	4 1/2"	B	<b>.60</b>
8916	Plug	5 1/2"	1/2"	3/16"	6 1/2"	T	<b>.30</b>
8917	Jack	7"	1/2"	3/16"	6 1/2"	T	<b>1.00</b>
8918	Plug	6 1/2"	1/2"	3/16"	7 1/2"	TVH	<b>.60</b>
8919	Jack	8 1/2"	1/2"	3/16"	7 1/2"	TVH	<b>1.10</b>
8920	Plug	8 1/2"	1/2"	3/16"	9 1/2"	HD	<b>1.10</b>
8921	Jack	10 1/2"	1"	3/16"	9 1/2"	HD	<b>1.25</b>

**UNIVERSAL ADJUSTABLE COILS**



These Adjustable - Inductance Ferrocart (iron-core) coils will replace the Broadcast band coils in practically any receiver. It is no longer necessary to order hard-to-get "exact duplicates" when an Antenna, R.F. or Oscillator coil requires replacement.

Continuously variable in inductance over a wide range, these coils will accurately "track" with the other coils in the receiver when properly adjusted. The exact inductance of the old coil is easily matched by a simple screwdriver adjustment, regardless of the value of the tuning condenser.

High "Q" iron cores used in these coils add gain and selectivity to the receiver. The oscillator coil provides complete adjustment for intermediate frequencies between 175 and 520 kc. May be used in either "cut-plate" tuning condenser or padded circuits. Available shielded or unshielded, furnished with complete instructions. 1 1/4" square by 2 1/2" high.

UNSHIELDED		
No.	Description	List
14-1026	Universal Ant. Coil	\$1.75
14-1027	Universal R.F. Coil	1.75
14-1028	Universal Osc. Coil	1.75

SHIELDED		
No.	Description	List
14-7413	Universal Ant. Coil	\$2.80
14-7558	Universal R.F. Coil	2.80
14-7560	Universal Osc. Coil	2.80

**SLIP-OVER PRIMARIES**



Designed to provide economical replacement of burned out primaries on all types of Antenna and R.F. coils. All windings are high-impedance type for improved performance. Sizes given below are outside diameter of coil over which the replacement winding will fit. Complete instructions for repair and replacement given.

No.	Size	List
14-6850	For 1 1/4" O.D. Coil	\$0.40
14-6852	For 1 1/2" O.D. Coil	.35
14-6854	For 1 3/4" O.D. Coil	.35
14-6856	For 1 7/8" O.D. Coil	.35
14-6858	For 2" O.D. Coil	.30

**STANDARD ANTENNA R. F. COILS**

Standard type air-core coils of superior construction, designed to cover the Broadcast band from 545 to 1620 kc with a 365-mmfd. tuning condenser. These coils make excellent replacement units and are used as original parts by discriminating set-builders and experimenters in the design and construction of Broadcast receivers.



All coils have high-impedance primaries. Secondaries are wound with Litz wire. Fully protected against humidity. Shielded coils are in non-magnetic cans, 1 1/4" diameter by 2 1/2" high.

UNSHIELDED		
No.	Type	List
14-1010	Standard Antenna Coil	\$0.85
14-1011	Standard R.F. Coil	.95

SHIELDED		
No.	Type	List
14-1004	Standard Antenna Coil	\$1.25
14-1005	Standard R.-F. Coil	1.25

**DOWEL TYPE PRIMARY**

Popular replacement for burned out primaries in high impedance antenna coils. Universal wound on 1/4" dia. by 1/2" long dowels moisture protected. Inductance 1700 uh.



No. 14-6865 List Price..... .42

**FM-AM "COMPOSITE" I.F. TRANSFORMER**



Contains a 455 kc. AM and a 10.7 mc. FM I.F. transformer. Can size: 1 1/4" square x 2 1/2" long. Spade bolt mounting.

16-6675      10.7 mc.-455 kc. I.F. Trans., List ..... \$4.00

**STANDARD OSCILLATOR COILS**

High-quality Broadcast band oscillator coils designed for use with any of the Antenna and R. F. coils listed above, using a 365-mmfd. tuning condenser. Frequency coverage is 545 to 1580 kc; units are provided for all popular intermediate frequencies.



Coils are mounted on bakelite base with tinned soldering lugs for connections. Unshielded coils have single-hole stud mounting. All coils are thoroughly impregnated to resist severe climatic conditions. Shielded coils are in cans. 1 1/2" diameter by 1 1/4" high, black crackle finish.

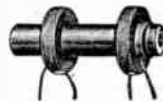
UNSHIELDED				
No.	I.F. Freq.	Padder Required	List	
14-3732	175 kc	900 mmf	\$1.05	
14-6590	262 kc	700 mmf	1.05	
14-6592	370 kc	500 mmf	1.05	
14-4034	456 kc	850 mmf	1.06	

SHIELDED				
No.	I.F. Freq.	Padder Required	List	
14-4242	175 kc	900 mmf	\$1.35	
14-4243	456 kc	350 mmf	1.35	

14-1033 Special Unshielded Osc. for 88A7; 456 kc      350 mmf      \$0.85

**REPLACEMENT I. F. WINDINGS**

Coils are wound on wood dowels, 3/8" diameter and 1 1/4" long; coupling is adjustable by sliding primary coil. Complete instructions furnished with each coil.



No.	Freq.	Type	List
18-6800	175	Standard	\$0.85
16-6601	455	Standard	.85
18-6602	175	Center-tap	1.10
16-6803	455	Center-tap	1.10

**"PLASTIC" I. F. TRANSFORMERS**



Particularly suitable for use in small receivers, where space is at a premium and yet superior performance is required, these remarkable transformers are only 1 1/4" square and 2 1/2" high! Made in a complete series of frequency ranges and positions, they will provide results second to none in any type of receiver.

The one-piece molded plastic coil-form and trimmer-base eliminates many separate parts that were required with other types of construction. The assembly is, therefore, simpler and more rigid. The iron core series are highly recommended for use in compact receivers and auto sets where only one I-F stage is permitted. It is not recommended that they be used in a two-stage system because of their high-gain which would cause instability and oscillation.

No.	Freq. Range	Peak Factory Setting	Selectivity Band Width			Use
			2x	10x		
16-6649	140-200	175	6.0	17.5		Input
16-6650	140-200	175	5.7	15.0		Interstage
16-6651	140-200	175	11.2	29.5		Output
16-6652	200-310	262	9.5	24.7		Input
16-6653	200-310	262	10.4	27.6		Interstage
16-6654	200-310	262	20.5	52.1		Output
16-6655	305-480	370	8.4	24.4		Input
16-6656	305-480	370	11.8	30.0		Interstage
16-6657	305-480	370	18.8	47.7		Output
16-6658	400-550	455	18.8	46.6		Input
16-6659	400-550	455	12.5	33.0		Interstage
16-6660	400-550	455	17.5	50.5		Output

Air-Core "PLASTIC" I-F Transformers, List Price Each ..... \$1.40

IRON-CORE "PLASTIC" I-F's

No.	Freq. Range	Peak Factory Setting	2x	10x	Use	
16-6662	380-600	455	80	11.2	30.0	Input
16-6663	380-600	455	85	15.0	41.0	Output

Iron-Core "PLASTIC" I-F Transformers, List Price Each ..... \$2.10

**CARTWHEEL I. F. TRANSFORMER**



A brand new, ultra-compact, unshielded I-F Transformer, complete with dual trimmers; finds useful application in many types of compact AC-DC or Midget type receivers. Only 1 1/4" by 1 1/4" by 1 1/4" high; one-piece molded plastic trimmer base; for 456-kc only.

No. 16-6661 List Price ..... \$1.40

**STANDARD I. F. TRANSFORMERS**

The Meissner series of Air-Core I. F. Transformers has been accepted as "standard" for general replacement purposes. Gain characteristics have been designed to correspond closely with average values found in the majority of commercial receivers. All transformers are double-tuned with ceramic-base, mica-dielectric trimmers. Windings are fully impregnated. Well-insulated RMA color-coded lead wires. Bright aluminum finish shield is 1 1/4" square by 3" high.



No.	Freq. Range	Peak Factory Setting	Use	
			Input	Output
16-5700	121-235	175	Input	
16-5702	121-235	175	Output	
16-3781	121-235	175	Output	C. T.
16-5704	220-360	262	Input	
16-5706	190-325	262	Output	
16-5712	425-650	455	Input	
16-6183	485-1000	455	Interstage	
16-5714	425-650	455	Output	
16-3786	255-550	455	Output	C. T.

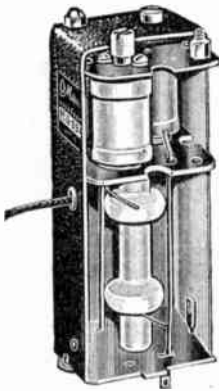
List Price Each ..... \$2.10

**FERROCART I. F. TRANSFORMERS**

Designed primarily as original parts in high-gain receivers of superior quality, these transformers find consistent application in stepping up the performance of old receivers. The special powdered-iron core used in the coils permits higher "Q" with resultant increase in selectivity and gain. All units are double-tuned with ceramic-base, mica-dielectric trimmers. Windings are of high-grade Litz wire, thoroughly impregnated. Shield is bright aluminum finish, 1 1/4" square by 3" high.

No.	Freq. Range	Peak Factory Setting	Use	
			Input	Output
16-5728	127-206	175	Input	
16-5730	127-206	175	Output	
16-5740	360-600	455	Input	
16-5742	360-600	455	Output	
16-8091	1050-2000	1500	Input-Interstage	
16-8099	1050-2000	1500	Output	

List Price Each ..... \$2.80



## "ALIGN-AIRE" I-F TRANSFORMERS

The result of years of engineering experience in designing high grade transformers for the finest commercial receivers! The exacting requirements of modern high-fidelity and communications type receivers demand units that can be depended upon under any and all conditions. They must be absolutely stable under temperature and humidity variation and unaffected by vibration. These requirements are all met by

the "Align-Aire" I-F Transformer. Provides 3600 degrees of micro-meter smooth trimmer adjustment instead of the usual 180 degree rotation! Accurate trimming can thus be readily accomplished. Available with special "Iron-core" design for maximum gain and selectivity. Double-tuned and offered in a complete range of frequencies for any application. Shield cans are black crackle finish, 2"x2"x1 1/4".

No.	Frequency Range (kc)	Peak Factory Setting	Gain Factory Setting	Selectivity Band Width			Use
				2X	10X	20X	
16-6643	415-540	456	77	7.0	16.0	22.0	Input
16-6123	415-540	456	29	7.0	18.0	21.4	Interstage
16-6645	415-540	456	105	9.0	25.6	36.2	Output
16-6139	415-540	456	100	9.5	23.2	33.5	Output C.T.

LIST PRICE, EACH ..... \$6.95

## AIR-CORE R-F CHOKES

Accurately wound and individually tested; coils wound on specially treated forms, mounted on bakelite terminal base and thoroughly moisture proofed. Available in shields or without; both single-hole mounting. Shielded chokes have terminals thru top of can so unit may be mounted on inside wall of chassis. Shields are bright aluminum finish, 1 1/2" square.



MH Induct.	Shielded		Unshielded	
	No.	List	No.	List
2.5	19-5582	\$0.90	19-1994	\$0.85
5.5	19-5584	.90	19-4551	.85
8.0	19-5588	.95	19-2078	.70
10.0	19-1900	1.05	19-8770	.75
16.0	19-5590	1.10	19-1995	.85
30.0	19-5592	1.20	19-2330	.90
60.0	19-5594	1.35	19-3247	1.05
80.0	19-5596	1.40	19-2709	1.10

## TRANSMITTER CHOKES

Highly efficient for Amateur and Commercial use; six lateral wound sections provide effective action over wide frequency range. Windings on ceramic form with tapped ends; mounting brackets included.



Cat. No.	Induct.	Current	Ohms	Net
19-3019	2.8 MH	1000 MA	5.0	\$1.68
19-3022	5.5 MH	500 MA	12.5	1.47
19-3025	5.9 MH	200 MA	34.9	1.47

## IRON-CORE R-F CHOKES

Universal-wound on special powdered-iron cores, these chokes provide maximum efficiency—lower DC resistance per MH. Coils are wax-impregnated; laminated bakelite terminal base; single-hole mounting; without shielding.



No.	MH	List	No.	MH	List
19-6834	2.5	\$0.95	19-6844	60.0	\$1.60
19-6840	10.0	1.20	19-6846	80.0	1.80
19-6842	30.0	1.40	19-6848	125.0	2.30

## PHONO-OSCILLATOR COIL

For use in building either wireless or direct-connected phonograph-oscillator units for record reproduction through the radio receiver. Knob adjustment permits selection of clear frequency in the broadcast band. Coil is in bright aluminum shield, 1 1/2" square by 3 1/2" high.



No. 17-9373 List ..... \$2.80

## B. F. O. COIL

For use with standard I. F.'s in super-het receivers. They supply the "beat" note necessary to reception of C. W.;

materially aid in tuning and locating weak stations. Mica trimmed. Freq. Range 290-650 KC. Peaked at 456 KC. In 1 1/2" sq. x 3 1/2" h. can with knob for pitch control.

No. 17-6753 Net Price ..... \$2.45

## F. M. COILS—I. F. TRANSFORMER

Permeability tuned; designed for use on newly assigned F. M. Frequencies. Mounted in 1-7/16" x 3/4" x 1-29/32" can. Tuned to 10.7 mc.

No. 16-6665 List Price ..... \$2.95

## DISCRIMINATOR TRANSFORMER

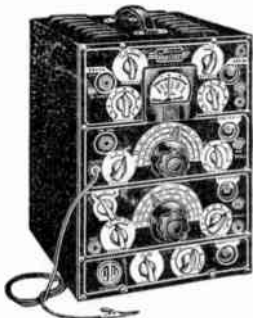
Mounted in same size can as I.F. Transformer listed above. Permeability tuned to 10.7 mc.

No. 17-3424 List Price ..... \$3.90



## MEISSNER "ANALYST"

**THE MODERN SERVICE INSTRUMENT**—Undoubtedly the most modern complete servicing instrument on the present day market. Handles the receivers of yesterday, today and tomorrow — with equal efficiency and facility! Entirely fundamental in its testing procedure. Will never become obsolete. **SAVES TIME — SAVES MONEY**—The use of the new Meissner ANALYST will not only permit you to make more money by handling a greater number of service jobs in a given time but it will give you additional assurance that these jobs will "stay sold." **SERVICES BY "SIGNAL TRACING"** — The Meissner ANALYST tests receivers and locates faults by the "Signal tracing" method — proven to be the fastest and most reliable method known at the present time. It is NOT, however, just another signal tracer! It is completely equipped with all devices that might be needed to make simultaneous checks on various parts of the receiver circuit.



Five separate and distinct "channels"; all controls are accurately calibrated with functions clearly indicated.

### Complete—Ready to Go to Work

The Meissner ANALYST is completely wired, aligned and laboratory tested. Furnished complete with a full set of 12 tubes. It is all ready to be put into service the minute it is unpacked and connected to the 110-volt line! No alignment or adjustments are necessary—just read the instructions, hook it up and go to work! Complete Book of Instructions, supplied with the new Meissner ANALYST, gives detailed directions for use of this instrument in locating all kinds of radio troubles.

No. 9-1040—New Meissner ANALYST, complete with tubes, prods, and Instruction Book; ready to operate. Net Price.....\$113.8.

## NEW MEISSNER WAVE-TRAPPERS



AVAILABLE IN 5 MODELS  
6 to 13 mc, 13 to 27 mc, 27 to 54 mc, 54 to 108 mc, 108 to 216 mc  
You can now attenuate interfering signals on fundamental or harmonic frequencies with these new, highly efficient tunable wave traps. Several may be connected in series if interference exists on more than one frequency. Efficient with any balanced or unbalanced line from 50 to 400 ohms impedance.  
List Price.....\$5.00

## NEW MEISSNER LINE FILTERS



(Grounded & Shielded)

Reject interference from electric shavers, electric fans, food mixers, vacuum cleaners, etc. 300-watt rating.

List Price.....\$6.50

## "6SA7" OSCILLATOR COIL



Tapped type coil for currently popular 6SA7 tube. For use with 420 uufd. condenser and padder

14-1033 List ..... \$0.85

For use with 162 uufd. "cut" section condenser

14-1053 List ..... \$0.85

## "UNIVERSAL" ADJ. IND. OSCILLATOR COIL

A truly universal oscillator coil for 455 kc. I.F. Primary is tapped for use with any of 25 different type oscillator tubes. Instructions included.

14-1040 List ..... \$2.00

## MIDGET SHIELDED ANT. AND R.F. COILS



A compact, super quality shielded antenna and R.F. coil. Provides full coverage of the broadcast band with a 365 tuning condenser. Special wound 142 wire secondaries. High impedance primaries. Capacity coupling used to level gain over frequency range. Coil forms are bakelite 1/2" diameter; winding protected by wax impregnation. Shields are 1 1/2" square x 2" high.

14-2436 Shielded Ant. Coil, List ..... \$1.25

14-2437 Shielded R.F. Coil, List ..... \$1.25

## MIDGET UNSHIELDED B.C. ANT.—R.F. COILS

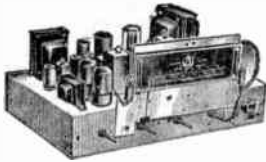


Highly efficient antenna and R.F. coils, especially designed for use where space is at a premium. Cover the regular broadcast band with a 365 uufd. tuning condenser. Coils have high impedance primaries and 142 wire secondaries. Windings are impregnated for moisture protection and wound on 1/2" diameter x 1 1/2" long forms.

14-1022 Unshielded Ant. Coil, List ..... \$0.85

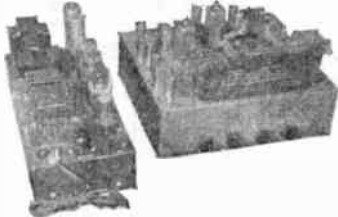
14-1023 Unshielded R.F. Coil, List ..... \$0.85

## Meissner AM-FM TUNER MODEL 9-1091-C



High fidelity reception! Covers AM Broadcast Band from 527 to 1620. FM Band from 88 to 108 MC (channels 200 to 300). Frequency response is flat with plus or minus 2 db from 30 to 15,000 cycles! Input jack provided for crystal or high level magnetic type phonograph pickup. Extreme sensitivity and selectivity.  
List Price.....\$245.00

## MODEL 9-1093 AM-FM TUNER AND AMPLIFIER



A high-quality AM-FM tuner and amplifier that is hard to beat. Power output, 18 watts at less than 2% harmonic distortion. Audio fidelity flat within plus or minus 2 db from 50 to 15,000 CPS. Hum level 65 db below full output. Slide rule dial is calibrated in kilocycles (535 to 1620 KC) on the AM band and in megacycles (88 to 108 MC) on the FM band. Sensitivity less 20 microvolts. A phonograph input jack controlled by a front switch is mounted in rear. The circuit is com-

## MODEL 6BK 3-BAND AC KIT



Frequency Range: 535 KC to 18 MC in 3 overlapping bands.  
Sensitivity: 15 microvolts on all bands.  
Audio Output: 3 watts maximum, 2 watts at 5% distortion.  
Intermediate Frequency: 455 KC.  
Tube Complement: 2-6SK7, 1-6SA7, 1-6SQ7, 1-6V6GT and 1-5Y3GT.  
Size: Chassis size — 12" x 10" x 3". Mounting space required — 12 1/2" w. x 7 1/4" h. x 1 1/2" d.  
Power Supply: 105 to 125 and 210 to 250 volts, 50 to 60 cycles. Power consumption, 35 watts.  
Controls: Band switch, combination volume-line switch, continuous tone control and tuning control.  
Dial: Slide rule, 5 1/2" x 1 1/2", calibrated in megacycles on all three bands. Dial edge lighted.  
Speaker: Speaker not supplied with kit. Any good quality FM type of speaker may be used which has an impedance of 2,2 ohms and the ability to handle the power of this set.  
Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included.  
Weight: 8 1/2 lb. actual.  
List Price.....\$67.25

## Meissner MODEL 8C FM RECEPTOR

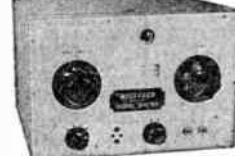


Adds superb frequency modulation to any regular AM set. Precision built for simple connection to your present AM radio. Audio fidelity: Flat within plus or minus 2 db from 50 to 15,000 CPS. Frequency range 88 to 108 MC. Power supply 115 volts AC.  
List Price.....\$57.50

pensated for either magnetic or crystal pickup. The Tuner can also be used with the new GE Reluctance Pick-up because of a new phonograph preamplifier that has been incorporated in the circuit. Simply plug a 6SC7 in the socket provided. The 6SC7 is not supplied. A combination tone control provides bass boost up to 11 db at 40 CPS and treble attenuation up to 13 db at 10,000 CPS. Amplifier is designed for an 8 to 16-ohm speaker. Power supply: 105-125 volts, 50-60 cycles; consumption, 190 watts.

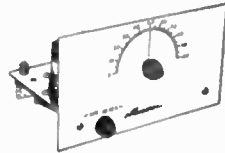
Tube Complement: 2-6SK7, 1-6SA7, 1-6H6, 5-6AQ5, 1-6C4, 2-900L, 1-6AL5, 2-6J5, 1-6SN7-GT, 2-6L6 Power Amplifiers, 1-5Y3GT Rectifier, 1-5V4G Rectifier and 1-6U5/6G5 Tuning Eye.  
Chassis Mounting Space: Tuner — 14 1/2" w. x 12 1/2" d. x 8 3/4" h. Amplifier — 7 1/4" w. x 18 1/2" d. x 7 1/4" h. (Allow clearance above amplifier for ventilation). Tuner weight is 18 lbs.; amplifier, 27 lbs.  
Supplied complete with tubes, two antennas and all hardware required to mount chassis units in cabinet. Antennas consist of a low impedance, 12" x 16", noise reducing loop for AM broadcast and an indoor type folded dipole, 300-ohm, for FM broadcast. Cabinet and speaker not included.  
List Price.....\$110.00

## New Meissner SIGNAL SHIFTER KIT



For the amateur with limited budget, the new MEISSNER Signal Shifter Kit is ideal, making it possible for him to save 50% by building it himself.  
Everything is provided including tubes — even wire and solder! All coil strips are furnished, plus a blank for an additional band.  
Directions for assembly are comprehensive and clear, supplemented with schematic diagram, a host of photos and pictographs, all large size and easy to read. Directions are so simple to follow that even the beginning ham will have no trouble. The only two difficult jobs are already completed. The complicated shielded turret assembly and the band spread gear mechanism come already built up — ready to install!  
Only equipment needed is a pair of pliers, a screw-driver and a soldering iron.  
No difficulty at all will be encountered to exactly duplicate the peak performance of the factory-built model.  
Complete Meissner Signal Shifter Kit, Part No. 10-1207, Amateur Net.....\$64.75

## MODEL 2BK BATTERY TRAINER KIT

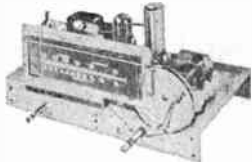


Circuit: Regenerative grid leak detector with resistance coupled pentode audio stage. • Tube Complement: 1-1T4 and 1-5Y4. • Tuning Range: Shipped with coil to cover the broadcast range of 520 to 1530 KC. Other coils available to cover the following ranges: 175 to 540 KC, 1350 KC to 5.4 MC, 3.5 to 8 MC, 7.9 to 18.5 MC, and 15 to 34 MC. • Controls: Combination regenerative control battery switch and vernier tuning control. • Dial: 1 1/2" pointer swings through 180 degrees are over scale graduated 0 to 100. • Batteries Required: Shipped less batteries. Requires 4 1/2-volt "A" battery and 90-volt "B" battery. Battery drain: "A" 50 MA, "B" 5 MA. • Headphones: Shipped less phones. Uses any good-quality magnetic type phones having an impedance of 2,000 ohm or more. • Assembly: The kit is easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included. • Size: 7 1/2" x 4 1/4" tall x 4 1/2" deep. • Weight: 1 1/2 lb. actual.  
List Price.....\$13.50  
Extra Coils: 170 to 540 KC and 540 to 1500 KC.....List Price 2.10  
1.4 to 4.50 MC, 3.2 to 8.2 MC, 8 to 18 MC and 15 to 34 MC. Weight each 1 oz.....List Price .85

## MODEL 3BK AC-DC TRAINER KIT

Circuit: Regenerative grid leak detector with resistance coupled pentode audio stage and AC-DC type power supply. • Tube Complement: 1-6B36 and 2-50B5. • Tuning Range: Shipped with coil to cover the broadcast range of 520 to 1530 KC. Other coils available to cover the following ranges: 175 to 540 KC, 1350 KC to 1.4 MC, 3.5 to 8 MC, 7.9 to 18.5 MC and 15 to 34 MC. • Controls: Combination regenerative control-line switch and vernier tuning control. • Dial: 1 1/2" pointer swings through 180 degrees are over scale graduated 0 to 100. • Power Supply: 105 to 125 volts, AC or DC. Power consumption, 18 watts. • Headphones: Shipped less phones. Uses any good-quality magnetic type phones having an impedance of 2,000 ohms or more. • Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included. • Size: 7 1/2" x 4 1/4" tall x 4 1/2" deep. • Weight: 1 1/2 lb. actual.  
List Price.....\$18.50  
Extra Coils: 170 to 540 KC and 540 to 1500 KC.....List Price 2.10  
1.4 to 4.50 MC, 3.2 to 8.2 MC, 8 to 18 MC and 15 to 34 MC. Weight each 1 oz.....List Price .85

## MODEL 8CK RECEPTOR KIT



Frequency Range: New FM band, 88 to 108 MC. Audio Fidelity: Flat within plus or minus 2 db from 50 to 15,000 CPS.  
Sensitivity: 40 microvolts.  
Audio Output: 3 volts R.M.S. at minimum usable signal input, 30% modulation. For greater signal inputs, output voltages as high as 15 volts R.M.S. may be obtained without distortion.  
Amplifier Requirements: Any high-quality audio power amplifier may be used which has high impedance input (100,000 ohms or greater) and which will produce full output with 3 volts R.M.S. audio input. The MEISSNER Model 4A and 4AK amplifiers are suitable for use with this Model 8CK FM Receptor.  
Antenna Input Impedance: Standard 300-ohm balanced line.  
Controls: Tuning control and combination volume control-line switch.  
Tube Complement: 2 type 6AV6, 2 type 6BA6, 2 type 6C4, 1 type 6AL5 and 1 type 6X3GT/G.  
Power Supply: 105 to 125 volts, 50 or 60 cycle AC. Consumption, 35 watts.  
Dial: Silver, 5 1/2" x 1 1/2", calibrated in megacycles and in channel numbers. Edge lighted.  
Assembly: Easily assembled from detailed pictorial diagram and simplified schematic. Front end factory assembled and aligned. Wire, hardware and solder included. IF Coils pre-aligned.  
Weight: 4 1/2 lb. actual.  
List Price.....\$44.95

## THE NEW FMX PHASE MODULATOR



The new MEISSNER FMX Phase Modulator is designed exclusively for use with the Model EX Signal Shifter. Combination of the two — the FMX Modulator and EX Signal Shifter — gives the radio amateur a complete low power phone and CW transmitter at a very low price. Higher power, up to one KW, can be obtained with a power amplifier driven by the Signal Shifter.  
The deviation control of the FMX Phase Modulator allows a swing of 5 to 10 KC on all amateur frequencies including the 80-meter band. Input for high impedance crystal or dynamic mike is provided. Any class C amplifier that the Signal Shifter is capable of driving becomes a phase modulated amplifier.  
The FMX Modulator is installed in the position normally occupied by the power supply, the latter becoming a remotely located unit.  
Plate and filament voltages for the FMX are secured from the Signal Shifter power supply.  
Tubes required are 6SL7, 6SG7, and 6V150.  
The FMX Phase Modulator is another precision-built product, designed by MEISSNER for the discriminating amateur who wants only the best.  
Model FMX Phase Modulator, complete, less tubes, Amateur Net.....\$15.00

## MODEL 4AJ POWER AMPLIFIER



Fidelity: Flat within 2 db from 45 to 20,000 CPS. Power Output: 20 watts with 1.5% harmonic distortion.  
Power Input: 105-125 volts, 50-60 cycles only. Power Consumption: 87 watts.  
Hum and Noise: 150 db below full output.  
Output Impedance: 1, 8, 15, 250 and 500 ohms. Unbalanced.  
Controls: On-off power switch and pilot lamp on front skirt. All other connections made at rear. Volume control on rear skirt with screwdriver slot adjustment.  
Input: High Impedance (500,000 ohms) through standard RMA phone jack.  
Input Requirements: 3 volts RMS for full output.  
Tube Complement: 1-6SN7GT, 2-6L6G, 1-5Y3GT.  
Size: 10" x 8 3/4" x 10" deep.  
Weight: 17 lb. actual.  
Cover: Well ventilated protective cover.  
Finish: Etched aluminum.  
List Price.....\$91.25

## MODEL 4AK POWER AMPLIFIER KIT

Easily assembled from detailed pictorial diagram and simplified schematic. Wire, hardware and solder included.  
List Price.....\$78.50

### BUD DE LUXE RELAY RACKS

These relay racks are made of 16 gauge steel with 1/2" panel supports. The panel mounting supports are recessed so that no edges of the panel will be exposed.

The front and back of the top, the two sides and the door are well louvered to provide adequate ventilation. Snap catches are positioned on the door. A stream-lined appearance is achieved by the use of rounded corners and red-lined chrome trim. The relay rack is shipped knocked-down and complete with all necessary hardware for assembly. All standard 19" panels will fit these racks.

A SPECIAL FEATURE IS THE USE OF FOUR STURDY SUPPORTS ON THE BOTTOM SO THAT CASTERS CAN BE FASTENED DIRECTLY TO THE BASE. THEREBY ACHIEVING READY MOBILITY. Bud RC-7756 casters will fit this unit. Casters are not included in price of cabinet. These relay racks are supplied in either black or grey wrinkle finish. The overall width is 22" and the depth is 17 1/2" on all sizes listed.

Catalog No.	Overall Height	Panel Space	Shipping Wt.	Dealer Cost
CR-1774	42 1/2"	36 3/4"	90 lbs.	\$28.50
CR-1771	47 1/2"	42"	100 lbs.	35.45
CR-1772	66 1/2"	61 1/4"	135 lbs.	42.30
CR-1773	82 1/2"	77"	155 lbs.	50.40

### BUD DE LUXE CABINET RACKS

These cabinet racks have rounded corners and attractive red-lined chrome trim. There is a recessed, hinged door on the top with a snap catch. These cabinet racks are made of heavy gauge steel and are of sturdy construction. The three large sizes have a hinged rear door, while the small sizes have a welded panel in the rear.

Adequate ventilation is assured by means of louvered sides and a two inch opening in the bottom of the back extends the entire width.

**"NO-SCRATCH" BOSSSED ON THE BOTTOM TO MINIMIZE MARRING OF A TABLE TOP.** These relay racks are furnished in either black or grey wrinkle finish. Depth 14 3/4", width 22" Will fit standard 19" panels.

Catalog No.	Overall Height	Panel Space	Shipping Wt.	Dealer Cost
CR-1741	10 3/8"	8 3/4"	29 lbs.	\$10.05
CR-1740	12 1/8"	10 1/2"	31 lbs.	11.30
CR-1742	14 1/8"	12 1/2"	32 lbs.	12.25
CR-1739	15 1/8"	14 1/2"	36 lbs.	13.85
CR-1743	19 1/8"	17 1/2"	40 lbs.	16.77
CR-1727	22 1/8"	21"	45 lbs.	18.00
CR-1744	28 1/8"	26 1/2"	50 lbs.	19.20
CR-1728	33 1/8"	31 1/2"	55 lbs.	21.20
CR-1745	36 1/8"	35"	60 lbs.	21.57

### BUD JUNIOR CABINET RACKS

This cabinet rack is a multi-purpose unit that is inexpensive. The cabinet is constructed to accommodate two panels, one is 10 1/2" by 18 1/2", the other 8 3/4" by 18 1/2", these panels are supplied with the cabinet. The BUD Junior Cabinet Rack is spacious enough to accommodate a chassis up to 10" by 17"

The rear of the cabinet is covered by a hinged door with a locking device. The cabinet is furnished in black wrinkle finish only.

Catalog No.	Overall Height	Depth	Width	Shipping Wt.	Dealer Cost
RC-1749A	21 1/2"	10 1/2"	19 3/4"	25 lbs.	\$14.50

### BUD DESK TYPE RELAY RACKS

Perfect for table mounting of low and medium power transmitters, public address systems, and other electronic instruments. Rack has strong chassis for mounting heavy components. Shipped knocked-down, with necessary hardware, easy to assemble. Standard notched 19" wide panels can be used, panels set in recess so that no edges are exposed. Furnished in black wrinkle finish only. Depth 12"

Catalog No.	Height	Panel Space	Shipping Wt.	Dealer Cost
RR-1248	24"	21"	15 lbs.	\$5.55
RR-1249	31"	28"	17 lbs.	6.93

### BUD CHASSIS MOUNTING BRACKETS

Mounting brackets are essential to insure proper support of the chassis. Formed of heavy gauge steel, cut away at the bottom to provide chassis clearance so that chassis can be mounted flush against panel. Finished in Black. Numbers MB-450 and MB-451 designed for chassis height of 4" Sold in pairs only.

Catalog No.	Height	Depth	Dealer Cost Per Pair
MB-458	6 1/2"	8"	\$0.69
MB-448	6 1/2"	10"	.93
MB-459	6 1/2"	11"	1.02
MB-449	6 1/2"	12"	1.20
MB-460	6 1/2"	13"	1.23
MB-450	8 1/2"	10"	1.45
MB-451	8 1/2"	13"	1.55

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices on above slightly higher west of the Mississippi River

These pages show only a few of many BUD Products. For complete catalog, write BUD RADIO INC., Dept. ANH, 2118 E. 55th St., Cleveland 3, Ohio

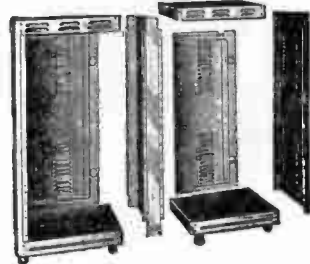
### NEW BUD ADD-o-RACK SERIES

It has always been necessary to buy special racks without louvers on one side to obtain a maximum of panel space with a minimum of floor space. Now, you no longer need to buy a whole new cabinet when you want additional panel space. Through our new and exclusive Add-a-Rack series, BUD not only offers additional racks at a lower cost, but provides you with a sturdier, better looking assembly.

The illustration at top shows two Add-a-Rack cabinets assembled together. The illustration below shows the unique and ingenious method of adding a unit to your present equipment.

Instead of buying an entire new outfit, you purchase only four parts: (1) a door (2) a top (3) a bottom and (4) an Add-a-Rack coupling-unit. The right (or left) hand side of your present relay rack is removed and replaced by the Add-a-Rack coupling-unit; next, a top and bottom is fastened into place, and the side taken from the first rack is fastened onto the second rack which has been added. Place the additional door into position and you have two racks properly and efficiently coupled together. In the same simple way, more racks can be added at any time and every one will be in a CONTINUOUS ONE-PIECE assembly.

This series is available in two ways: (1) a double unit consisting of two racks and the Add-a-Rack coupling unit, consisting of a door, a top, a bottom and an Add-a-Rack coupling-unit. These units are furnished with all necessary assembling and panel mounting hardware.



Add-a-Rack Unit	Used to Add-a-Rack to	Dealer Cost
AR-1778	CR-1774	\$26.25
AR-1775	CR-1771	32.50
AR-1776	CR-1772	40.75
AR-1777	CR-1773	48.00

Complete unit consisting of the knocked-down parts necessary for two relay racks coupled together.

CR-1779	two coupled relay racks same size as CR-1774	\$54.75
CR-1780	two coupled relay racks same size as CR-1771	67.95
CR-1786	two coupled relay racks same size as CR-1772	83.05
CR-1799	two coupled relay racks same size as CR-1773	98.40

Bud RC-7756 Casters will fit this unit. Casters are not included in price of cabinet.

### BUD TELEPHONE TYPE RELAY RACKS

Nos. RR-1263 and RR-1264 are made of 1/2" steel channels, three inches deep and are held together by angle cross pieces of the same material. The design of the base has been improved to incorporate a chassis type bottom, together with the usual side angles, making the rack stronger and more stable.

RR-1265 is heavy duty and is made of heavy channel iron supported by two 3/8" thick iron angles that are bolted to the channels to provide additional support to the unit. Supplied in black wrinkle finish only. All racks accommodate standard 19" panels in accordance with standards set by RMA.

Catalog No.	Height	Depth	Panel Space	Shipping Wt.	Dealer Cost
RR-1263	35 1/2"	22"	31 1/2"	38 lbs.	\$14.55
RR-1264	70 1/2"	22"	66 1/2"	48 lbs.	17.40
RR-1265	72 1/2"	15"	66 1/2"	97 lbs.	31.50

### BUD VENTILATING GRILLE PANELS

Made of 1/8" thick steel. The grille is stamped into the panel itself, and is recommended for use where additional ventilation is desirable. All panels are 19" long, furnished in either black or grey wrinkle finish.

Catalog No.	Height	Grille Size	Dealer Cost
PS-808	5 1/4"	3 3/8" x 14 3/8"	\$2.31
PS-809	7"	4 7/8" x 14 3/8"	2.46
PS-810	8 3/4"	3 7/8" x 14 3/8"	2.70
PS-811	10 1/2"	5 7/8" x 14 3/8"	3.00
PS-812	12 1/2"	7 3/8" x 14 3/8"	3.45

\* Allows 3 1/2" space for chassis mounting.



### BUD STANDARD RELAY RACK PANELS



Made of Steel, Masonite or Aluminum. Steel Panels are made of high grade steel 1/8" thick. Masonite Panels are made of 3/16" Tempered Masonite. Aluminum Panels are made of 1/8" thick Aluminum. All Panels are 19" wide. Furnished in either Black or Grey Wrinkle. Aluminum panels 3/16" thick may be had if desired at 60% increase in cost over 1/8"

STEEL			MASONITE			ALUMINUM		
Catalog No.	Height	Dealer Cost	Catalog No.	Height	Dealer Cost	Catalog No.	Height	Dealer Cost
PS-1250	1 1/2"	\$ .60	PM-1588	1 1/2"	\$ .48	PA-1101	1 1/2"	\$ .66
PS-1251	3 1/2"	.69	PM-1589	3 1/2"	.60	PA-1102	3 1/2"	.67
PS-1252	5 1/2"	.84	PM-1590	5 1/2"	.75	PA-1103	5 1/2"	1.04
PS-1253	7 1/2"	.93	PM-1591	7 1/2"	.87	PA-1104	7 1/2"	1.37
PS-1254	8 3/4"	1.08	PM-1592	8 3/4"	1.05	PA-1105	8 3/4"	1.56
PS-1255	10 1/2"	1.32	PM-1593	10 1/2"	1.20	PA-1106	10 1/2"	1.85
PS-1256	12 1/2"	1.59	PM-1594	12 1/2"	1.35	PA-1107	12 1/2"	2.32
PS-1257	14"	1.80	PM-1595	14"	1.50	PA-1108	14"	2.40
PS-1258	15 1/2"	2.10	PM-1596	15 1/2"	1.65	PA-1109	15 1/2"	2.70
PS-1259	17 1/2"	2.28	PM-1597	17 1/2"	1.92	PA-1110	17 1/2"	3.00
PS-1260	19 1/2"	2.46	PM-1598	19 1/2"	2.07	PA-1111	19 1/2"	3.30
PS-1261	21"	2.76	PM-1599	21"	2.31	PA-1112	21"	3.60

### BUD ENCLOSED METER PANEL



PS-439 Meter Panel is designed to give maximum protection to meters. The steel panel has a large cut-out, behind which is mounted a blank Masonite sub-panel. This sub-panel has a meter mounting area of 4 1/2" x 15 1/2" — sufficient space to mount four 3" meters. The meters are protected by a glass insert that mounts in slides. Due to danger from breakage during shipment, this glass is not supplied with the panel. The glass insert should be cut 16" long x 4 3/4" wide. Finished in either Black or Grey Wrinkle.

Cat. No.	Length	Width	Dealer Cost
PS-439	19"	5 1/4"	\$4.68

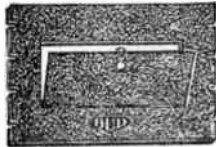
### BUD METER PANELS STEEL AND MASONITE



All meter panels are 5 1/4" high, 19" wide, available in either black or grey wrinkle finish. Small holes fit either 2" square or round meters, large holes fit either 3" square or round meters.

Catalog No.	Number of Holes	Diameter	Type Material	Dealer Cost
PM-509	3	2 1/2"	Masonite	\$1.20
PM-510	4	2 1/2"	Masonite	1.32
PM-511	3	2 3/4"	Masonite	1.20
PM-512	4	2 3/4"	Masonite	1.32
PS-440	3	2 1/2"	Steel	1.14
PS-441	5	2 1/2"	Steel	1.65
PS-442	3	2 3/4"	Steel	1.14
PS-443	5	2 3/4"	Steel	1.65

### BUD METAL DOOR RACK PANELS



If it is desirable to have accessibility to component parts on the chassis, this panel is very useful. Door opening on No. 615—15 1/2" x 6"; door opening on No. 616—15 1/2" x 7 1/2". These panels are available in either Grey or Black Wrinkle finish. Panels are made of 1/8" high grade sheet steel.

Catalog No.	Length	Width	Dealer Cost
PS-615	19"	10 1/4"	\$3.45
PS-616	19"	12 1/4"	3.90

### BUD HEAVY DUTY CHASSIS (Furnished with Bottom Plates)



These chassis, made of heavy gauge steel, are intended for applications requiring unusual sturdiness and where large weights are involved. Available in either Black Wrinkle finish or Electro-Zinc Plate.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Dealer Cost
CB-1757	CB-1764	8"	17"	2"	\$2.16
CB-1758	CB-1765	8"	17"	3"	2.43
CB-1759	CB-1766	11"	17"	2"	2.64
CB-1760	CB-1767	11"	17"	3"	2.88
CB-1761	CB-1768	13"	17"	2"	3.12
CB-1762	CB-1769	13"	17"	3"	3.45
CB-1763	CB-1770	13"	17"	4"	3.84

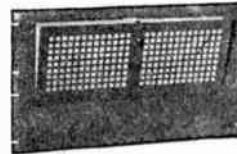
### BUD TRIANGULAR MOUNTING BRACKETS



For panel and chassis assemblies where large weights are involved, these Triangular Mounting Brackets make convenient supports. Constructed of heavy steel. Black finish. Sold in pairs only.

Cat. No.	Height	Depth	Dealer Cost Per Pair
MB-1266	5"	5"	\$0.78
MB-1267	7"	7"	.85
MB-1268	9"	9"	1.00

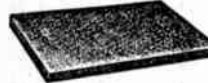
### BUD VENTILATED DOOR RACK PANEL



These panels have a generous perforated area in the door, providing adequate ventilation for adjacent units. The panels are 19" long and available in either Black or Grey Wrinkle finish. Door opening on P. S. 814 15 1/2" x 6". Opening on P. S. 815 15 1/4" x 7 1/2".

Cat. No.	Height	Door Height	Dealer Cost
PS-814	10 1/2"	6"	\$4.65
PS-815	12 1/4"	7 1/2"	5.25

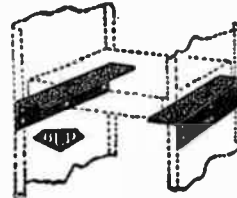
### BUD RACK SHELVES



Heavy power supplies, modulator units, etc., can be mounted on these rack shelves which are supported in the cabinet by the chassis-supporting angles listed on this page. They are designed to slide in from the rear of the cabinet. Made of heavy gauge steel, finished in Black Wrinkle Enamel only.

Catalog No.	Width	Height	Depth	Dealer Cost
CB-1976	19"	1"	15"	\$2.85
CB-1977	19"	1"	12"	2.25

### BUD CHASSIS SUPPORTING ANGLES



When heavy weights are encountered in chassis construction, Bud Chassis Supporting Angles will distribute the weight on the sides of the rack and relieve the panel. Made in two sizes from Black Painted Steel, 1/8" thick. Sold in pairs only.

Cat. No.	Length	Width	Dealer Cost Per Pair
SA-1349	14 1/2"	3"	\$1.80
SA-1350	12"	3"	1.80

### BUD CHASSIS BOTTOM PLATES



These bottom plates make excellent dust covers and protect all wiring and component parts under the chassis. Each plate has four formed bosses that prevent sharp edges from scratching the table top. Supplied in Black Wrinkle finish or Electro-Zinc Plated finish.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Width	Length	Dealer Cost
BP-705	BP-706	5"	7"	\$0.36
BP-680	BP-667	5"	9 1/2"	.33
BP-536	BP-538	5"	10"	.39
BP-681	BP-668	7"	7"	.48
BP-682	BP-669	7"	9"	.48
BP-683	BP-670	7"	11"	.54
BP-537	BP-539	7"	12"	.57
BP-685	BP-671	7"	13"	.57
BP-685	BP-672	5"	13 1/2"	.45
BP-516	BP-513	7"	15"	.63
BP-541	BP-540	8 1/2"	15"	.65
BP-1069	BP-1067	4"	17"	.48
BP-686	BP-673	7"	17"	.66
BP-707	BP-708	8"	10"	.57
BP-709	BP-710	8"	12"	.66
BP-687	BP-674	8"	17"	.69
BP-688	BP-675	10"	12"	.69
BP-517	BP-514	10"	14"	.75
BP-689	BP-676	10"	17"	.84
BP-690	BP-677	11"	17"	.84
BP-691	BP-678	12"	17"	.90
BP-692	BP-679	13"	17"	1.08
BP-518	BP-515	10"	23"	1.15

Where materials are specified Black Wrinkle Finish only, and Grey is desired, a charge of 15% additional will be made.

Prices on above slightly higher west of the Mississippi River

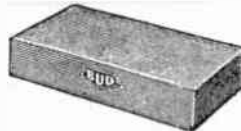
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### BUD STEEL CHASSIS BASES

These chassis are made from one piece of steel, all corners are reinforced and spot welded. The four sides are folded on bottom for additional strength. This also permits a bottom plate to be attached if desired. These Chassis Bases are furnished in either Black Wrinkle or Electro-Zinc plated.

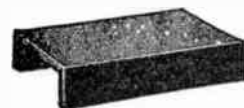
Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Oauge	Dealer Cost
CB-628	CB-629	5"	7"	2"	22	\$0.72
CB-644	CB-645	5"	9 1/2"	2 1/2"	22	.75
CB-688	CB-776	5"	9 1/2"	1 1/4"	22	.60
CB-604	CB-605	5"	10"	3"	22	.90
CB-789	CB-1191	7"	7"	2"	22	.69
CB-790	CB-1192	7"	9"	2"	22	.81
CB-791	CB-1193	7"	11"	3"	20	.90
CB-792	CB-793	7"	12"	3"	20	1.05
CB-646	CB-1194	7"	13"	3"	20	.96
CB-647	CB-1198	7"	13 1/2"	2 1/4"	20	1.08
CB-649	CB-1189	7"	15"	3"	20	1.23
CB-655	CB-666	8 1/4"	15"	3"	20	1.41
CB-1068	CB-1066	4 1/2"	17"	3"	20	1.02
CB-648	CB-1199	7"	17"	2 3/4"	20	1.29
CB-701	CB-702	8"	10"	2 1/2"	20	1.17
CB-703	CB-704	8"	13"	2 1/2"	20	1.25
CB-650	CB-774	8"	17"	2 1/2"	20	1.32
CB-651	CB-775	8"	17"	3"	20	1.38
CB-652	CB-1195	10"	12"	3"	20	1.32
CB-653	CB-779	10"	14"	3"	20	1.38
CB-654	CB-769	10"	17"	2"	20	1.38
CB-636	CB-637	10"	17"	3"	20	1.32
CB-655	CB-1196	10"	17"	3"	18	1.55
CB-656	CB-1197	10"	23"	3"	18	1.74
CB-657	CB-770	11"	17"	2 1/2"	18	1.65
CB-658	CB-771	11"	17"	3"	18	1.85
CB-663	CB-661	12"	17"	2 1/2"	18	1.50
CB-664	CB-662	12"	17"	3"	18	1.62
CB-659	CB-772	13"	17"	2 1/2"	18	2.05
CB-660	CB-773	13"	17"	3"	18	2.20
CB-640	CB-641	10"	17"	4"	18	2.74
CB-642	CB-643	13"	17"	4"	18	3.15
CB-623	CB-624	10"	17"	5"	18	3.15
CB-625	CB-626	13"	17"	5"	18	3.50



### BUD ALUMINUM CHASSIS

The construction and design of these chassis is exactly the same as our steel chassis. The aluminum chassis are welded on government approved spot welders that are the same as used in the welding of aluminum airplane parts. The gauges in table below are aluminum gauges. As a result, you can depend on BUD Aluminum Chassis to do a perfect job.

Catalog Number	Depth	Width	Height	Gauge	Dealer Cost
AC-430	4"	6"	3"	18	\$ .78
AC-431	4"	6"	2"	18	.78
AC-432	4"	17"	3"	16	1.43
AC-402	5"	7"	2"	18	.69
AC-429	5"	7"	3"	18	.81
AC-403	5"	9 1/2"	2"	18	.81
AC-421	5"	9 1/2"	3"	18	.89
AC-404	5"	10"	3"	18	.99
AC-422	5"	13"	3"	18	.98
AC-433	6"	17"	3"	16	1.44
AC-405	7"	7"	2"	18	.81
AC-406	7"	9"	2"	18	.90
AC-407	7"	11"	3"	18	1.14
AC-409	7"	12"	3"	18	1.02
AC-411	7"	13"	3"	16	1.68
AC-423	7"	17"	2"	16	1.43
AC-424	8"	12"	3"	16	1.38
AC-425	8"	17"	2"	16	1.52
AC-412	8"	17"	3"	16	1.77
AC-413	10"	12"	3"	16	1.44
AC-414	10"	14"	3"	16	1.92
AC-415	10"	17"	2"	16	1.80
AC-416	10"	17"	3"	16	2.04
AC-426	11"	17"	2"	14	1.89
AC-417	11"	17"	3"	14	2.40
AC-418	12"	17"	3"	14	2.52
AC-419	13"	17"	2"	14	2.25
AC-420	13"	17"	3"	14	2.67
AC-427	10"	17"	4"	14	2.36
AC-428	13"	17"	4"	14	3.05



### BUD OPEN-END CHASSIS

Primarily intended to be used with the various sizes and styles of Bud metal cabinets, these chassis are ideal for any type of small built-up unit such as a record amplifier, code oscillator, etc. U-shaped construction is used with ends folded over 3/8" for additional strength. Finish is Electro-Zinc Plating.

Cat. No.	Depth	Width	Height	Fits Cab. No.	Dealer Cost
CB-38	7"	6"	2"	C-1584	\$0.60
CB-30	5"	7"	1 1/2"		.54
CB-41	7"	8"	1 1/2"	C-973	.62
CB-39	7"	8"	2"	C-1585	.76
CB-996	5 1/2"	9"	1 1/2"	C-993	.60
CB-976	7 1/2"	9"	1 1/2"	C-999, C-1746	.82
CB-40	7"	10"	2"	C-1586	.82
CB-997	7"	11"	1 1/2"	C-994, C-1747	.56
CB-998	7"	13"	1 1/2"	C-995, C-1748	1.00
CB-34	10 1/2"	14"	2"	C-975A	1.38
CB-35	7 3/4"	15"	2"	C-1190A	1.26



### BUD CHASSIS DECKS

These chassis are suitable for use in carrying cases and utility cabinets. Each unit is folded over 1 1/2" on the front, 1/2" on the side and made from Zinc Plated steel. These decks are also useful for interstage shielding and supports in regular panel-and-chassis layouts.

Cat. No.	Width	Depth	Fits Cab. No.	Dealer Cost
CB-522	4 1/2"	5 1/2"	CU-1098	\$0.46
CB-523	4 1/2"	4 1/2"	CU-1099	.43
CB-524	6 1/2"	6 1/2"	CU-879	.56
CB-525	5 1/2"	5 1/2"	CU-1124, CC-1098	.50
CB-526	8 1/2"	7 1/2"	CU-880	.79
CB-527	9 1/2"	7 1/2"	CU-581	.82
CB-528	7 1/2"	6 1/2"	CU-882	.66
CB-36	6 1/2"	6 1/2"	CC-1097	.60
CB-37	8 1/2"	6 1/2"	CC-1100	.76



### BUD INTERSTAGE SHIELDS

These shields are useful on receiver and transmitter chassis for eliminating interstage coupling and isolating individual circuits. Formed angles on front and bottom facilitate mounting on either chassis or panel. Both angles punched with two mounting holes.

Cat. No.	Height	Depth	Dealer Cost
IS-1246	5 1/2"	7"	\$0.45
IS-1247	5 1/2"	10"	.47
IS-1243	6 1/2"	10"	.50



### BUD REMOVABLE TOP CHASSIS

Amateurs and experimenters who make periodic changes can do so with a minimum of waste by just discarding the top that has been drilled and replacing it with a new top. Supplied in Black Wrinkle finish or Electro-Zinc Plated.

Black Wrinkle Cat. No.	Zinc Plated Cat. No.	Depth	Width	Height	Dealer Cost
CB-196	CB-193	10"	17"	3"	\$2.75
CB-197	CB-194	10"	17"	4"	3.00
CB-251	CB-210	13"	17"	3"	3.15
CB-252	CB-211	13"	17"	4"	3.90

### REPLACEMENT CHASSIS TOPS

RT-198	RT-195	10"	17"	1 1/2"	\$1.00
RT-253	RT-212	13"	17"	1 1/2"	1.32

### TRUCK CASTERS



No. RC-7756—Heavy Duty type casters, for weights of 400 lbs. or less. No. RC-7757 Casters are Light Duty for lighter weights. Wheels, hard rubber composition and ball bearing.

Catalog No.	Height	Type	Dealer Cost
RC-7756	2 3/4"	Heavy Duty	\$ .90
RC-7757	2"	Light Duty	.40

### RELAY RACK SCREWS AND WASHERS



No. RS-7140 Machine Screws, 1/2" long, threaded 10-32, Oval Head, finished in Nickel Plate.  
No. RW-7161 Cup Washers, to fit 10-32 Screws. Nickel plated, finish. These are available in packages of 100, 250, 500 and 1000.

Catalog No.	Description	Dealer Cost
RS-7140	Screw	\$ .90 per 100
RW-7161	Washer	1.00 per 100



### BUD CABINET RACK DOLLIES

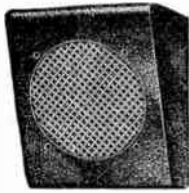
These dollies have been introduced to overcome the difficulty of moving heavy relay racks when repairs are necessary. They will fit cabinets having bases measuring from 14" x 18" to 17" x 21" and are especially suited for our Standard Relay Racks. No. RD-506 Dolly is furnished with light duty casters. No. RD-505 has heavy duty casters. Finished in Black Wrinkle only. Bud De Luxe Relay Racks require four RC-7756 casters only.

Cat. No.	Length Outside	Length Inside	Width Outside	Width Inside	Dealer Cost
RD-505	21 1/2"	17 1/2"	17 1/2"	13 1/2"	\$6.00
RD-506	21 1/2"	17 1/2"	17 1/2"	13 1/2"	7.75

Where materials are specified Black Wrinkle Finish only, and Grey is desired, a charge of 15% additional will be made.

Prices on above slightly higher west of the Mississippi River

These pages show only a few of many BUD Products. For complete catalog, write BUD RADIO INC., Dept. ANH, 2118 E. 55th St., Cleveland 3, Ohio



### BUD WALL OR TABLE TYPE SPEAKER CASE

A distinctive line of new metal speaker cabinets with reproduction capabilities equal to wood cabinets. All troubles with wood warping and splitting are eliminated. Keyway holes are provided for wall mounting and four embossed feet on the bottom are provided to prevent damaging table surfaces. Finished in Brown Wrinkle only.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-1948	3 1/2"	4"	7 1/2"	6 1/2"	4 1/2"	\$2.85
CS-1939	4"	5"	7 1/2"	6 1/2"	4 1/2"	3.00
CS-1940	4 1/2"	6"	9 1/2"	8"	5 3/4"	3.40
CS-1941	4 1/2"	8"	11 1/2"	9 1/2"	7"	3.90
CS-1942	6 1/2"	10"	13 1/2"	11 1/2"	8 1/2"	4.50
CS-1943	8 1/2"	12"	15 1/2"	13 1/2"	9 1/2"	5.00



### BUD STREAMLINED SPEAKER CASES

For an attractive Speaker Housing that is portable, choose these Speaker Cases. No baffle required with these Speaker Cases. Quality of reproduction is equal to that of a good wood speaker housing. Front vertical corners are rounded and the speaker opening is covered with artistic metal grille. Two trips of chrome trim are mounted on front.

Drilled to take size of speaker intended for case. Black or Grey Wrinkle finish.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-1935	4 1/2"	6"	8"	9"	6"	\$3.35
CS-1936	6 1/2"	8"	9 3/4"	11"	7"	4.20
CS-1937	8 1/4"	10"	11 1/2"	13"	8"	5.70
CS-1938	11"	12"	13 1/2"	15"	8"	7.00



### BUD GENERAL SPEAKER CABINETS

In making permanent or portable public address installations, this line of speaker cabinets will be found very useful. No baffle required with these speaker housings. Quality of reproduction is equal to that of fine wood speaker cases. Construction is of heavy, cold-rolled steel. A carrying handle is attached to each cabinet for portable purposes. Finished in Black Wrinkle Enamel only.

Cat. No.	Hole Size	Speaker Size	Height	Width	Depth	Dealer Cost
CS-471	4 1/2"	6"	9"	9"	6"	\$2.88
CS-472	6 1/2"	8"	11"	11"	7"	3.60
CS-473	8 1/4"	10"	13"	13"	8"	4.65
CS-474	11"	12"	15"	15"	8"	6.15



### BUD IMPROVED UTILITY HANDLES

These handles are designed to provide sufficient strength and comfortable hand-grip. They are made from aluminum tubing and are given an etched aluminum finish. Made in two sizes and furnished complete with screws, washers and nuts.

Catalog Number	Overall Length	Overall Width	Mtg. Hole Center	Dealer Cost
UH-70A	5 1/2"	3 1/2"	4 3/8"	\$0.22
UH-71A	3 1/2"	3 1/2"	3 1/2"	.18



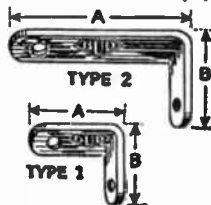
### BUD MOUNTING BRACKETS

These Brackets are designed to permit the mounting of Midget Condensers, volume controls, etc., at any desired position under or on top of a chassis, at the proper distance from the chassis. Bracket is made of steel, cadmium-plated. AB-550 same as AB-549 except that slot does not have 1/2" hole in center.

Cat. No.	Height	Width	Slot	Dealer Cost
AB-549	2"	3/4"	3/8" & 1/2"	\$0.06
AB-550	2"	3/4"	3/8"	\$0.06

### BUD ANGLES AND BRACKETS

A wide selection in sizes of these angles provides for numerous uses as brackets in all types of radio transmitter and receiver construction, and other electronic equipment. Made of Brass, Nickel Plated.



#### TYPE 2 Dealer Cost

AB-633	2"	3/4"	3/8"	\$4.20
AB-634	3"	3/4"	3/8"	5.00
AB-635	4"	3/4"	3/8"	6.00

#### TYPE 1 Dealer Cost

Cat. No.	Height	Depth	Width	Per 100	Dealer Cost
AB-444	1 1/2"	1 1/2"	3/8"		\$2.10
AB-445	1 1/2"	1 1/2"	3/8"		2.85
AB-446	1 1/2"	1 1/2"	3/8"		3.15
AB-447	1 1/2"	1 1/2"	3/8"		4.05
AB-631	1 1/2"	1 1/2"	3/8"		2.65
AB-632	1 1/2"	1 1/2"	3/8"		3.50

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made. Prices on above slightly higher west of the Mississippi River

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### BUD STREAMLINED AMPLIFIER FOUNDATIONS

Use this unit to obtain beauty in an amplifier and similar apparatus. Each foundation consists of a standard chassis on which is mounted a removable top cover. Chromium trim is used to add additional attractiveness to the equipment. All chassis are 3" high and complete units are 9" high. Sturdy Easy Grip handles are attached to chassis, excepting No. 1750 where handle is attached to top. Finished in either Black or Grey Wrinkle.

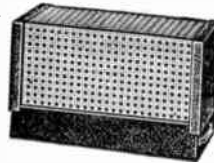
Cat. No.	Width	Depth	Dealer Cost
CA-1750	10 1/2"	5"	\$3.48
CA-1751	12 1/2"	7"	3.21
CA-1752	17 1/2"	7"	4.29
CA-1753	17 1/2"	10"	5.10

### BUD SLOPING PANEL AMPLIFIER FOUNDATIONS



Each foundation consists of a 4" sloping front chassis on which is mounted a removable top cover. The top cover contains grilles cutouts and louvers for adequate ventilation. The CA-1980 has a handle mounted on top of cover. All others have handles mounted on chassis. All chassis are 3 1/2" high and all units are 9 1/2" overall height. Cover is finished in Grey Wrinkle with chrome trim and the chassis is finished in Black Wrinkle.

Cat. No.	Top Depth	Chassis Length	Chassis Depth	Dealer Cost
CA-1980	5"	10"	10"	\$4.65
CA-1981	7"	12"	10"	5.40
CA-1982	7"	17"	10"	6.24
CA-1983	10"	17"	13"	6.90

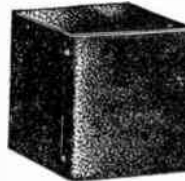


### BUD AMPLIFIER FOUNDATIONS

Each unit consists of a regular chassis on which is attached a perforated metal cover which provides a lot of ventilation. Chassis have easy grip handles attached to same. Finished in Black Wrinkle only.

Cat. No.	Height	Width	Depth	Chassis Height	Dealer Cost
CA-699	8 3/4"	9 3/4"	5 1/2"	2 1/2"	\$3.30
CA-1125	8 3/4"	13 3/4"	5 1/2"	2 1/2"	3.52
CA-1126	8 3/4"	17 3/4"	7 1/2"	2 1/2"	4.24
CA-1127	8 1/4"	17 1/2"	10 1/2"	3"	5.22
CA-1128	8 1/4"	12 1/2"	10 1/2"	3"	4.60

### BUD STREAMLINED SCOPE AND UTILITY CABINETS

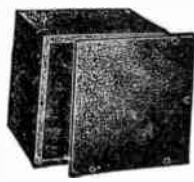


These are attractive cabinets that are adaptable to a variety of uses. All cabinets are supplied with chassis. Prices shown below include chassis. The chassis height on all except CU-1991 and CU-1992 is 1 1/4". CU-1991 is designed for 3" cathode ray tube and has a hinged cover to provide easy access to tube or other components. Chassis height is 2". CU-1992 is designed for a 5" cathode ray tube and also has a hinged cover. Chassis height, 3".

Catalog Number	Width	Depth	Height	Dealer Cost
CU-1990	5 1/2"	8 1/2"	8"	\$2.75
CU-1984	7 1/2"	8 1/2"	8"	3.20
CU-1985	9 1/2"	8 1/2"	8"	3.57
CU-1986	11 1/2"	8 1/2"	8"	3.94
CU-1987	13 1/2"	8 1/2"	8"	4.58
CU-1988	15 1/2"	8 1/2"	8"	5.06
CU-1989	17 1/2"	8 1/2"	8"	5.72
CU-1991	7 1/2"	13"	8"	5.40
CU-1992	9 1/2"	19"	12"	7.65

### BUD METAL UTILITY CABINETS

The large number of sizes available makes this line useful for all sorts of electronic equipment, monitors, frequency meters, etc. Two removable sides for easy accessibility. Finished in Black Wrinkle.



Cat. No.	Depth	Width	Height	Dealer Cost
CU-883	2"	4"	4"	\$0.66
CU-728	3"	5"	4"	.75
CU-729	4"	5"	6"	.95
CU-1098	6"	6"	6"	1.00
CU-1099	5"	6"	9"	1.44
CU-879	7"	8"	10"	1.90
CU-1124	6"	7"	12"	1.90
CU-880	8"	10"	10"	2.40
CU-881	8"	11"	12"	3.00
CU-882	7"	9"	15"	3.35





### BUD INSTRUMENT & RECEIVER CABINETS



Each cabinet has an evenly recessed hinged cover with convenient finger lift. The panel on front of cabinet is readily attached with self-tapping screws. Louvers provide ample ventilation. These Cabinets are finished in Black Wrinkle only. For chassis to fit these cabinets see Open End Chassis listed on other page.

Cat. No.	Height	Width	Depth	Dealer Cost
C-973	7"	8"	8"	\$2.92
C-993	7"	10"	8"	2.18
C-994	7"	12"	8"	3.18
C-995	7"	14"	8"	3.24
C-1190	8"	16"	8"	5.10
C-975	9"	15"	11"	6.15

### BUD STREAMLINED CABINETS



Distinctive features of these cabinets are the rounded front corners and recessed hinged top. All parts built into this cabinet are easily accessible. Overall height, 8". Depth, 8 1/4". Finished in Black Wrinkle only. Suitable chassis may be found under listing of Open End Chassis on other page.

Catalog Number	Panel Size	Cabinet Width	Cabinet Height	Dealer Cost
C-1789	8" x 8"	10 1/2"	8"	\$3.00
C-1746	8" x 10"	12 1/2"	8"	3.30
C-1747	8" x 12"	14 1/2"	8"	3.70
C-1748	8" x 14"	16 1/2"	8"	4.50
C-1790	8" x 16"	18 1/2"	8"	4.26

### BUD DELUXE STREAMLINED CABINETS

These cabinets are identical with those listed above, except that they have a 1/2" vertical chrome strip at each side of the panel, and are supplied in Gray Wrinkle Enamel only.

Catalog Number	Panel Size	Cabinet Width	Cabinet Height	Dealer Cost
C-1791	8" x 8"	10 1/2"	8"	\$3.75
C-1781	8" x 10"	12 1/2"	8"	4.20
C-1782	8" x 12"	14 1/2"	8"	4.50
C-1783	8" x 14"	16 1/2"	8"	5.10
C-1792	8" x 16"	18 1/2"	8"	6.50

### BUD MINIBOXES

Thousands of uses in the fields of radio and electronics. Made from heavy gauge aluminum. Permit installation of more components than in the conventionally designed box of same size. Two piece construction, each half forming three sides. Flange type construction assures adequate shielding. Available in etched aluminum finish and gray hammerloid finish.



Gray Cat. No.	Etched Cat. No.	Length	Width	Height	Dealer Cost
CU-2100	CU-3000	2 3/4"	2 1/4"	1 3/8"	\$0.50
CU-2101	CU-3001	3 1/4"	2 1/4"	1 3/8"	.50
CU-2102	CU-3002	4"	2 1/4"	1 3/8"	.70
CU-2103	CU-3003	4"	2 1/2"	2 1/4"	.72
CU-2104	CU-3004	5"	2 1/2"	2 1/4"	.72
CU-2105	CU-3005	5"	4"	3"	.72
CU-2106	CU-3006	5 1/4"	3"	2 1/8"	.81
CU-2107	CU-3007	7"	5"	4"	1.05
CU-2108	CU-3008	8"	6"	3 1/2"	1.68
CU-2109	CU-3009	10"	6"	3 1/2"	1.80
CU-2110	CU-3010	12"	7"	4"	2.34
CU-2111	CU-3011	12"	7"	4"	2.76
CU-2112	CU-3012	17"	5"	4"	.78
CU-2113	CU-3013	10"	2"	1 1/2"	.96
CU-2114	CU-3014	12"	2 1/2"	2 1/2"	.60
CU-2115	CU-3015	4"	2"	2 3/4"	.60
CU-2116	CU-3016	4 1/2"	2 1/4"	1 1/2"	.66

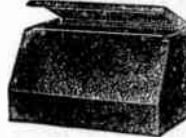
### BUD MINIATURE UTILITY CABINETS with attached Chassis

Filling a long wanted need for a small cabinet with a chassis attached to the front panel, these cabinets are indispensable when building electronic devices using miniature tubes. Front and rear panels are removable and fastened with self-tapping screws, permitting easy accessibility. Especially useful for HF converters, television amplifiers and power supplies. Finished in black wrinkle.



Cat. No.	Height	Width	Depth	CHASSIS SIZE	Dealer Cost
C-1793	4"	4"	2"	1" 3 1/2" 1 1/2"	\$.95
C-1794	4"	5"	3"	1" 4 1/2" 2 1/2"	1.05
C-1795	5"	4"	3"	1 1/4" 3 1/2" 2 1/2"	1.05
P-1796	6"	5"	4"	1 3/4" 4 1/2" 3 1/2"	1.15
C-1797	5"	6"	4"	1 1/4" 5 1/2" 3 1/2"	1.15
C-1798	6"	6"	6"	1 3/4" 4 1/2" 5 1/2"	1.20

### BUD SLOPING PANEL CABINETS



The entire front panel is removable if desired. This cabinet is also provided with a hinged top for easy accessibility to tubes or other parts that are mounted on chassis. All cabinets are finished in Black Wrinkle only.

Catalog Number	Height	Width	Depth	Fits Chassis	Dealer Cost
C-1584	6 1/2"	7 1/2"	7 1/2"	7" x 6" x 2"	\$2.88
C-1585	6 1/2"	9 1/2"	7 1/2"	7" x 8" x 2"	3.25
C-1586	6 1/2"	11 1/2"	7 1/2"	7" x 10" x 2"	2.60
C-1892	8"	13 1/2"	8 1/2"	8" x 12" x 2 1/2"	4.32
C-1893	10"	10 1/2"	10 1/2"	10" x 17" x 3"	5.85

### BUD BOX SHIELDS



This shield has many uses: Shielding power transformers and chokes, and for covering and protecting various other components in power supplies, transmitters, receivers and other electronic units.

Top and sides are one-piece steel. No. BS-1244 has perforated steel ends for ventilation. BS-1891 has solid ends. Flanges at bottom provide for mounting. Finished in Black Wrinkle Enamel only.

Cat. No.	Ends	Length	Depth	Height	Dealer Cost
BS-1244	Ventilated	7 1/2"	4 1/2"	5"	\$1.45
BS-1891	Solid	7 1/2"	4 1/2"	5"	1.35

### BUD METAL CARRYING CASES

These carrying cases have many uses. An easy grip handle is fastened to the top. Front and back panels are removable. Steel welded construction assures maximum strength with minimum weight, an important requirement for portable work. Finish is Black Wrinkle only. For chassis to fit these cabinets see Chassis Decks on other page.



Cat. No.	Depth	Width	Height	Dealer Cost
CC-1095	5"	6"	9"	\$2.15
CC-1091	5"	9"	6"	2.15
CC-1096	6"	7"	12"	2.50
CC-1092	6"	12"	7"	2.95
CC-1097	7"	7 1/2"	15"	3.00
CC-1100	8"	10"	10"	2.95
CC-1093	7"	15"	9"	4.30

### BUD MIDGET SPEAKER CASES

A safe, convenient housing for midget 2" and 3" speakers. Size 4" wide, 4" deep, 4 1/4" high. Finished in Black Wrinkle Finish only.



Catalog Number	Hole Diameter	Speaker Size	Dealer Cost
CS-1685	2 1/2"	2"	\$1.25
CS-1686	2 1/8"	3"	1.25

### BUD SLOPING PANEL UTILITY BOX



A compact, sloping panel cabinet, providing a streamlined appearance and enough space to house conveniently a 2 or 3 miniature tube amplifier or gadget. A 1/2" flange around the rear opening of the cabinet provides a convenient back cover mounting. Designed to accommodate a Bud miniature chassis. Finished in black wrinkle.

Cat. No.	Height	Width	Depth	Use Chassis No.	Dealer Cost
C-1602	4"	4"	4 1/4"	CB-1617	\$1.10
C-1603	4"	5"	4 1/4"	CB-1618	1.20
C-1604	4"	6"	4 1/4"	CB-1619	1.30
C-1605	4"	7"	4 1/4"	CB-1620	1.50

### BUD SLOPING PANEL UTILITY CABINET

A metal box that can be used for numerous purposes. Finished in Black Wrinkle Enamel only.



Cat. No.	Height	Width	Depth	Dealer Cost
C-1578	4 1/4"	4"	4"	\$ .90
C-1579	4 1/4"	5"	4"	1.05
C-1580	4 1/4"	6"	4"	1.20
C-1581	4 1/4"	7"	4"	1.45

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**BUD****BUD MINIATURE AMPLIFIER FOUNDATION**

With the increased use of miniature tubes, smaller cabinets can be used when designing a compact amplifier. This amplifier foundation was designed expressly for this purpose. The chassis is a 5" x 7" x 2". The cover is made of perforated metal. A streamlined handle makes this cabinet portable. Finished in black wrinkle.

Cat. No.	Height	Width	Depth	Chassis Height	Dealer Cost
CA-1754	6"	7"	5"	2"	\$3.00

**BUD ALUMINUM MINIATURE CHASSIS**

These small, open end aluminum chassis are just the thing for miniature tube applications or sub-assemblies. Made of hard aluminum with 1/4" flange on bottom, allowing the chassis to be fastened down or a bottom plate to be attached. Extremely useful for small receivers, outboard uses, such as narrow band FM adapters or any use where space is limited. Finish is etched aluminum.

Cat. No.	Depth	Width	Height	Fits Cabinet No.	Dealer Cost
CB-1623	2 3/4"	2 3/4"	1 1/4"	C-1784	\$ .30
CB-1624	1 1/2"	3 1/8"	1"	CU-883	.33
CB-1625	3 1/2"	4 1/8"	2"	C-1788	.36
CB-1626	2 1/2"	4 1/8"	1"	CU-728	.36
CB-1627	3 3/4"	4 1/8"	1 1/4"	C-1785	.42
CB-1628	3 3/4"	6 1/8"	1 1/2"	CU-1098	.45
CB-1629	5 3/4"	4 1/8"	1 1/2"	C-1602	.49
CB-1617	4 1/4"	3 1/8"	1 1/2"	C-1603	.49
CB-1618	4"	4 1/8"	1"	C-1604	.49
CB-1619	4"	5 1/8"	1"	C-1605	.45
CB-1620	4"	6 1/8"	1"		

**BUD STREAMLINED MULTI-PURPOSE CABINETS**

Handsome streamlined metal cabinet, finished in grey wrinkle. Back of Cabinet open for ventilation.

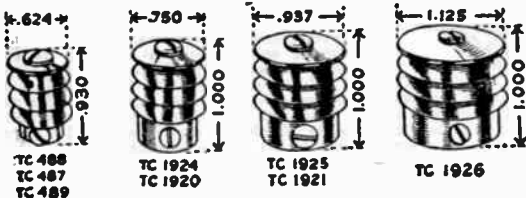
Cat. No.	Height	Width	Depth	Use Chassis No.	Dealer Cost
C-1784	4 1/2"	3 3/8"	3 1/8"	CB-1623	\$1.35
C-1785	4 1/2"	7 1/8"	3 1/8"	CB-1628	1.75
C-1787	6 1/2"	5 1/2"	3 1/2"	CB-1625	1.70
C-1788	4 1/2"	5 1/2"	3 1/2"	CB-1625	1.75

**BUD STREAMLINED METER CASES**

Designed for all applications requiring a modern meter case. All cases have a sloping front with top corner rounded. Meter cases CM-1241 and CM-1242 have insulators on top for leads to meter. CM-1965 and CM-1966 are furnished without indicators. Finished in Black Wrinkle.



Catalog Number	Hole Diameter	Fits Meter Size	Dealer Cost
CM-1241	2 1/8"	2"	\$1.12
CM-1242	2 1/8"	3"	1.12
CM-1965	2 1/8"	2"	.95
CM-1966	2 1/8"	3"	.95

**HEAT RADIATING PLATE AND GRID TUBE CONNECTORS**

Bud heat radiating connectors fit all sizes of industrial and transmitting vacuum tubes. These connectors serve a dual purpose, not only are they useful to make connections to plate or grid terminals, but they provide a large heat radiating surface that will dissipate heat from the glass seal and tube element.

Eight sizes fit all grid and plate leads and also provide sufficient heat radiation for any tube operating in the range of 50 to 2000 watts. All radiators are machined from special aluminum rod. Edges are rounded to minimize corona loss.

**BUD PHONE PLUGS**

All metal parts on these excellent phone plugs are machined from brass, and are nickel plated. Unshielded plugs have handles of black bakelite; shielded types have attractive brass knurled handles, bright nickel plated.

No. FP-1946 is supplied *Without a Handle*, and is used as an adapter between a female microphone cable connector and a regular plug jack.

Catalog Number	Contacts	Handle	Overall Length	Bushing Diam.	Dealer Cost
FP-230	2	Bakelite	2 1/2"	3/4"	\$ .30
FP-282	2	Shielded	2 1/2"	3/4"	.54
FP-1057	3	Bakelite	2 1/2"	3/4"	.66
FP-284	3	Shielded	2 1/2"	3/4"	.85
FP-1946	2	None	1 1/2"	1 1/8"	.24

**BUD MIDGET JACK**

The construction of this jack allows its use in applications having limited space behind the panel. The spring brass contact assures a good connection. These jacks come with insulating washers and accommodate standard phone plugs.

Catalog No.	Type	Distance Behind Panel	Dealer Cost
J-232 A	Open Circuit	13/16"	\$ .27
J-233 A	Closed Circuit	13/16"	.33

**BUD SMALL JACKS**

These panel mounting jacks are desirable for control panels and similar applications where space is at a premium. Parts are accurately machined, with nickel plated finish and contacts are formed from spring brass. Each jack comes complete with insulated washers and will accommodate standard plugs. Overall length 1 1/4".

Catalog No.	Contacts	Distance Behind Panel	Dealer Cost
J-1038	2	15/16"	\$ .30
J-1058	3	15/16"	.46

**BUD ALL PURPOSE JACKS**

Although small in size, this is one of the finest lines of jacks available. The careful design and high quality materials used in these components assure long, dependable service. Circuit opening contacts are made of pure silver and the laminated bakelite insulation prevents breakdown between springs at all ordinary voltages. Supplied with panel insulating washers. Height 1 1/4", distance behind panel 7/8".

Catalog Number	Circuit Design	Contact Arrangement	Dealer Cost
J-1324		Open Circuit	\$ .30
J-1325		Closed circuit	.36
J-1326		3-Contact open circuit	.39
J-1327		Break contact on tip and ring spring	.42
J-1328		Separate make-contact springs	.42
J-1329		Break contact on tip spring — separate make-contact spring	.48
J-1330		Break-make contact on tip spring	.45

Table below lists Connectors to fit various Tubes

Cat. No.	Hole Size for Lead	Heat Radiating Connectors to Fit the Following Tubes	Dealer Cost
TC-488	.052	3C24, 24, 24G, 25T, 27	\$ .36
TC-487	.062	UH50, HK24, 304B, 829B, 832A, 834	.36
TC-489	.072	35T, 35TG, 75TH, HK254, HK257B, 484, 8001	.36
TC-1924	.125	HK57, 152TH	.50
TC-1920	.375	4-125A, 150TH, 2-150D, 250R, 250TH, 250TL, 420A, 802, 803, 804, 807, 808 Grid, 814, 815, 828	.50
TC-1925	.125	304TH, 304TL	.60
TC-1921	.570	ZB60, HF60, HF100, 111H, 211H, 203H, HF175, HF300 Grid, 100R, HK357C, 450TH, 454, 750TH, 805, 806, 808, 809, 810, 811, 812, 813, 828, 833, 866, 854, 1500T, 2000T, 1054, 5331, 5332, 8000, 8003, 8005	.60
TC-1926	.010	WL468, WL463, WL460, HF200, HF201, HF300	.90

NOTE: TC-1923 Heat Radiating Connector with hole size of .110", is still in our line and can be furnished. Dealer Cost \$ .50

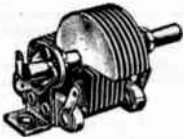
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### BUD MIDGET CONDENSERS



Small size, sturdy construction and high mechanical and electrical efficiency are the outstanding features. Insulation used is Steatite. Rotor and Stator plates are brass and are electro-soldered to their respective rods. All metal parts are cadmium plated.

These condensers have both front and rear bearings and are furnished in either mid-line type plates (straight line wave length), or semi-circular plates (straight line capacity).

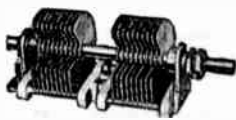
#### SEMI-CIRCULAR TYPE—DOUBLE BEARING

Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-1850	15	3	.024"	3	\$1.25
MC-1852	33	4	.024"	5	1.35
MC-1853	50	5	.024"	7	1.60
MC-1855	100	7	.024"	14	1.75
MC-1856	140	7	.024"	19	2.00
MC-1858	190	9	.024"	27	2.15
MC-1859	235	10	.024"	33	2.40
MC-1860	300	12	.024"	43	2.64
MC-1861	15	4	.060"	5	1.34
MC-1862	35	4	.060"	11	1.74
MC-1863	50	7	.060"	15	1.93
MC-1864	75	9	.060"	23	2.25
MC-1865	100	12	.060"	31	2.45
MC-1866	35	8	.095"	15	2.00
MC-1867	50	10	.095"	23	2.25
MC-1868	75	13	.095"	33	2.65

#### MID-LINE TYPE—DOUBLE BEARING

Catalog Number	Cap. in MMFD.		Air Gap	Number Plates	Dealer Cost
	Max.	Min.			
MC-900	25	4	.024"	4	\$1.40
MC-902	35	5	.024"	6	1.48
MC-903	50	6	.024"	8	1.67
MC-904	75	7	.024"	11	1.88
MC-905	100	7	.024"	15	2.15
MC-906	140	7	.024"	20	2.25
MC-908	190	9	.024"	27	2.25
MC-909	250	11	.024"	36	2.45
MC-910	300	13	.024"	43	2.75
MC-965	15	4	.060"	5	1.55
MC-897	35	6	.060"	11	1.75
MC-898	50	7	.060"	16	1.98
MC-899	75	8	.060"	23	2.30
MC-941	100	11	.060"	31	2.55
MC-965	35	8	.095"	15	2.15
MC-966	50	12	.095"	23	2.35
MC-967	75	14	.095"	33	2.75

### BUD DOUBLE GANG MIDGET CONDENSERS



Where space is at a premium and split-stator capacitors are specified, BUD Double Gang Midgets are desirable.

Plate construction and finish, workmanship and materials, are identical with other Midget Condensers. These condensers are designed for chassis and panel mounting.

#### MID-LINE PLATE TYPE (STRAIGHT LINE WAVE LENGTH)

Catalog Number	Cap. Per Section		Air Gap	No. Plates Per Section	Overall Length	Dealer Cost
	Max.	Min.				
MC-929A	50	5	.024"	7	3 1/4"	\$2.70
MC-911A	100	6	.024"	14	4 1/4"	3.05
MC-912A	140	7	.024"	19	4 3/4"	3.30
MC-942A	20	4	.060"	6	3 1/2"	2.85
MC-913A	35	5	.060"	11	4 1/2"	3.10
MC-330A	50	7	.060"	15	5 1/4"	3.40
MC-331A	75	8	.060"	23	6 1/2"	3.55
MC-329A	35	9	.095"	15	6 1/2"	3.55

#### SEMI-CIRCULAR PLATE TYPE (STRAIGHT LINE CAPACITY)

Catalog Number	Cap. Per Section		Air Gap	No. Plates Per Section	Overall Length	Dealer Cost
	Max.	Min.				
MC-1883A	50	5	.024"	7	3 1/4"	\$2.60
MC-1882A	100	7	.024"	14	4 1/4"	2.90
MC-1884A	20	4	.060"	6	3 1/2"	2.75
MC-1885A	35	5	.060"	11	4 1/2"	2.95
MC-1887A	50	7	.060"	15	5 1/4"	3.30
MC-1888A	75	8	.060"	23	6 1/2"	3.45

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### BUD "CE" MIDGET CONDENSERS SINGLE SECTION DOUBLE BEARING



These Midget Condensers were designed to meet the rigid requirements in design of efficient ultra-high frequency electronic devices and precision laboratory equipment. Brass rotor and stator plate stacks are assembled into permanent units by means of electro-soldering, which assures long life and accurate plate spacing.

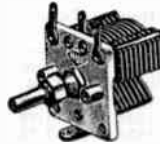
End-plates of Steatite insulate the mounting bushings and angles from the rotor and stator assemblies. A large front sleeve bearing and rear ball thrust bearing provide for smooth rotation. Special wiper contact provides noise-free tuning. All metal parts are cadmium plated.

Rotor plates are semi-circular shaped.

Provision for either panel or base mounting.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Over-all Length	Dealer Cost
CE-2001	35	6	.030"	7	2 1/2"	1.85
CE-2002	50	7	.030"	9	2 7/8"	1.90
CE-2003	75	8	.030"	14	3 1/4"	2.80
CE-2004	100	9	.030"	18	3 1/2"	2.30
CE-2005	150	10	.030"	27	3 1/2"	2.80
CE-2006	200	11	.030"	35	4 1/4"	2.85
CE-2007	250	12	.030"	44	4 3/4"	3.20
CE-2008	300	15	.030"	52	5 1/4"	3.40
CE-2011	15	5	.060"	5	2 3/8"	1.60
CE-2012	35	7	.060"	11	3 1/8"	1.85
CE-2013	50	8	.060"	15	3 3/8"	2.25
CE-2014	75	10	.060"	23	3 3/4"	2.70
CE-2015	100	13	.060"	31	4 1/4"	2.95
CE-2016	35	9	.095"	15	4 1/4"	2.15
CE-2017	50	10	.095"	23	5 1/4"	2.45
CE-2018	75	14	.095"	33	6 1/4"	2.90

### BUD "CE" MIDGET CONDENSERS SINGLE BEARING



Locking nuts on the rotors of these single-bearing condensers assure trouble-free, portable and mobile operation. A screw-driver slot in rotor provides means of adjustment. Either insulated panel mounting or bracket mounting can be used. General construction is same as "CE" double-bearing condensers.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Over-all Length	Dealer Cost
CE-2021	35	6	.030"	7	1 3/8"	1.30
CE-2022	50	7	.030"	9	2 1/8"	1.40
CE-2023	75	8	.030"	14	2 1/2"	1.60
CE-2024	100	9	.030"	18	2 1/2"	1.80
CE-2025	150	10	.030"	27	3"	2.00
CE-2028	15	5	.060"	5	1 1/2"	1.35
CE-2029	35	7	.060"	11	2 1/4"	1.60
CE-2030	50	8	.060"	15	2 1/2"	1.75

### BUD TINY MITE PADDERS



For applications requiring a constant padder capacity under all temperature and humidity conditions, these units are ideal. They lend themselves readily to I. F. transformer applications, fixed tuned circuits for exciters, ganged condenser air trimers, and plug-in-coil padding as they fit inside of standard 1 1/2" diameter coil forms.

Bud Numbers CF-125, CF-126 and CF-310. Rotor and stator assemblies are made up of brass plates (0.015" thick) and rods electrically soldered into a solid unit and then are bright cadmium plated. Insulation is Steatite. Each unit may be adjusted in capacity by either a screw-driver or a 1/4" hex. wrench.

Catalog Number	Max. Cap. MMFD.	Min. Cap. MMFD.	Air Gap	No. of Plates	Dealer Cost
LC-2077	25	2.5	.017"	7	1.15
LC-2078	35	3	.017"	10	1.20
LC-2079	50	3.9	.017"	14	1.25
LC-2080	75	4.5	.017"	20	1.40
LC-2081	100	5.5	.017"	27	1.55
LC-2082	140	6.5	.017"	37	1.90



**BUD**



**NEW BUD THREE-GANG TINY MITE CONDENSERS**



Hams, Radio Constructors and Experimenters can find many uses for these compact, three-gang condensers. Designed particularly for high frequency use, they are adaptable for use in converters, preselectors and receivers covering the Amateur, Television and F.M. bands. Well constructed with soldered brass plates and ceramic brackets. Rotor shaft extended 1/4" at rear. Height 1 1/4". Width 1 1/4". Length behind panel 3 1/2". Mounting holes 2 1/8" apart.

give smooth operation. All metal parts are of aluminum. Plates have rounded edges. Steatite insulation is used.

Catalog Number	Cap. Per Section		No. of Plates Per Section	Dealer Cost
	Max.	Min.		
LC-1845	11	5	3	\$3.00
LC-1846	17	5	4	3.20
LC-1847	25	6	5	3.45

**BUD NEUTRALIZING AND HIGH FREQUENCY TUNING CONDENSERS**



This line of condensers will fill every Neutralizing and high frequency tuning requirement that modern circuits pose. The two-pillar construction makes this unit unusually sturdy and eliminates any possibility of capacity variation due to vibration. The movable plate is adjusted by means of the threaded shaft to which it is attached, and it is permanently locked in any position by the lock-nut provided. Any loose thread is taken up by a special nut and locked to

give smooth operation. All metal parts are of aluminum. Plates have rounded edges. Steatite insulation is used.

Catalog Number	Plate Diameter	MMFD. Capacity		Dealer Cost
		Max.	Min.	
NC-1000	1 7/8"	11	1	\$2.25
NC-1001	2 1/8"	24	2	3.24
NC-1002	4 1/8"	27	6	4.55

**BUD FEED-THROUGH AND BASE MOUNTED NEUTRALIZING CONDENSERS**



In circuits utilizing tubes with the grid lead terminated in the base, feed-through type of neutralizing condenser is particularly suited. One hole is required for mounting of feed-through condensers. Neutralizing condenser illustrated is feed-through type. Plates are made of aluminum, rounded at edges to cut down losses. After proper tuning is attained, movable plate can be locked with the knurled nut.

No. 890 and No. 852 are ideal neutralizers for popular low power beam tubes. No. 890 condenser is base mounted only.

Catalog Number	Plate Diameter	Size Hole for Mtg.	MMFD. Capacity		Dealer Cost
			Max.	Min.	
NC-852	1"	5/16"	6	.5	\$3.00
NC-853	1 1/8"	13/32"	11	1	2.25
NC-890	1"	.....	6	.5	1.00

**LATTICE WOUND R. F. CHOKES**



For all general purpose applications requiring a high quality choke at a reasonable price, this line finds wide acceptance. Each choke is wound from silk-covered enameled copper wire on a white ceramic bobbin. Leads are terminated with two convenient soldering lugs. Chokes can be mounted with a 6-32 screw through the center of the form, and each winding is thoroughly impregnated against moisture. The wide range of sizes fills practically every choke requirement in standard radio circuits. Choke base diameter 1 1/4", distance between ends of leads 1 3/4".

center of the form, and each winding is thoroughly impregnated against moisture. The wide range of sizes fills practically every choke requirement in standard radio circuits. Choke base diameter 1 1/4", distance between ends of leads 1 3/4".

Catalog Number	Inductance mh.	D. C. Res. Ohms	Current M. A.	Height	Dealer Cost
CH-1213	3.4	36	125	11/16"	.50
CH-1214	5.5	46	125	11/16"	.50
CH-1215	8.	60	125	11/16"	.60
CH-1216	10.	65	125	11/16"	.65
CH-1217	16.	84	125	11/16"	.68
CH-1218	30.	190	100	15/16"	.70
CH-1219	60.	279	90	15/16"	.80
CH-1220	80.	332	80	15/16"	.90

**TRANSMITTING CHOKES**



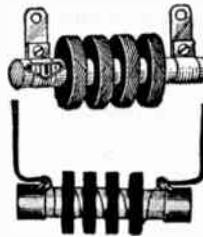
Here are two heavy duty R. F. Chokes that can really take it in high powered transmitter plate circuits. Each choke is wound on 9/16" dia. Steatite rod, has connection lugs and a mounting foot.

All chokes have a heavy ceramic coating which prevents moisture absorption and enables them to withstand momentary overload without collapsing the individual pies.

Consists of five graduated pies wound in continuous winding. Care has been taken to prevent any of the pies from being resonant on an amateur band and to keep the distributed capacity at a minimum. Overall height 3 1/4".

Catalog Number	Inductance	Current Capacity	D. C. Resistance	Dealer Cost
CH-569	4.3 mh.	.6 amp.	12 ohms	1.50

**PIE WOUND R. F. CHOKES**



Each choke has a continuous winding of silk covered enameled copper wire and the pies constituting this winding are wound on a 1/4" diameter ceramic core. Chokes are made with both strap and wire leads. The CH-876 is a heavy duty choke intended for circuits, such as transmitter plate circuits, where high currents are present. All chokes in this series have an overall length of 1 1/2".

**WITH STRAP LEADS**

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-922S	5.5	60 ohms	125 ma	.50
CH-923S	8.0	72 ohms	100 ma	.60
CH-924S	10.0	78 ohms	100 ma	.68
CH-876S	2.5	16 ohms	250 ma	.65

**WITH WIRE LEADS**

Catalog Number	Inductance mh.	D. C. Resistance	Current Rating	Dealer Cost
CH-922W	5.5	60 ohms	125 ma	.50
CH-923W	8.0	72 ohms	100 ma	.60
CH-924W	10.0	78 ohms	100 ma	.68
CH-876W	2.5	16 ohms	250 ma	.65

**ULTRA HIGH FREQUENCY R. F. CHOKES**



These chokes were designed to meet the requirements of builders of ultra-high frequency receivers and transmitters. Consists of ceramic rod with a single layer winding terminated with strap leads at each end. Particularly suitable for use on 2 or 6 meters. CH-570 is supplied with a mounting foot and is sometimes used as a filament choke in certain types of high frequency oscillator and amplifier circuits.

Catalog Number	Inductance mh.	Max. Current	D. C. Resistance	Length	Dealer Cost
CH-570	1.5 uh.	1.7 a	0.2 ohms	2 3/4"	.95

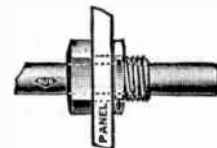
**IRON CORE R. F. CHOKES**



The efficiency of any circuit requiring an R. F. choke will be definitely improved by utilizing one of these chokes with a finely divided molded metallic core. The improved "Q" possible with this construction results from the D. C. resistance of these chokes being from 40 to 50% less for a given inductance than for regular air-core types. Thus, the D. C. voltage drop through the choke is considerably less, yet the choking action is equally as good. Windings are made with silk-covered enameled wire, terminated on convenient soldering lugs, and the chokes are mounted in small square shield cans measuring 1 1/4" x 1 1/4" x 1 1/4".

Catalog Number	Inductance mh.	D. C. Resistance Ohms	Current ma.	Dealer Cost
CH-1278	2.5	16.	125	.75
CH-1279	3.4	19.5	125	.81
CH-1280	5.5	27.5	125	.81
CH-1281	8.	36.	125	.87
CH-1282	10.	42.5	125	.87
CH-1283	16.	53.	125	.96
CH-1284	30.	82.	100	1.00
CH-1285	60.	131.	100	1.15
CH-1286	80.	163.	90	1.26
CH-1287	125.	221.	90	1.56
CH-294	Shield Can Only			.21

**PANEL BEARING ASSEMBLIES**



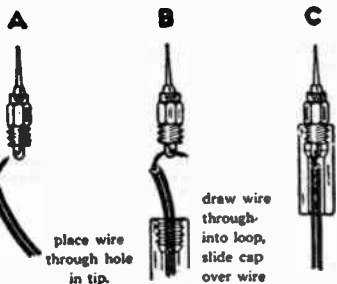
Nos. PB-530 and PB-531 consist of a regular 1/4" shaft bearing with 6" and 3" length of 1/4" brass rod inserted and held in place by washers to prevent shaft from shifting. These two assemblies will facilitate the panel control of condensers, potentiometers, etc., which must be mounted a distance from the panel. Bearing fits in 13/32" hole and on panels up to 5/16" thick. No. PB-532 is bearing only without shaft.

Catalog Number	Overall Length	Distance in front of panels.	Dealer Cost
PB-531	3"	1 1/2"	.28
PB-532	Bearing Only		.12

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices on above slightly higher west of the Mississippi River

These pages show only a few of many BUD Products. For complete catalog, write BUD RADIO INC., Dept. ANH, 2118 E. 55th St., Cleveland 3, Ohio



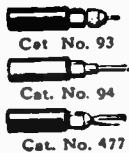
AS EASY AS A-B-C

cup shape opening holds wire firmly, no solder necessary—change as often as you need.

### NEW SENSATIONAL! BUD "WISE-GRIP" TEST PRODS (Pat. applied for)

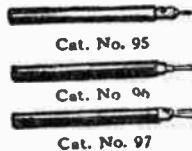
No longer is it necessary to use a soldering iron or screw-driver to replace a broken or worn lead on a test prod or plug. To install a wire in this unique, patented prod, merely insert end of wire in hole. screw down handle to finger tightness and a positive contact is assured. By far the fastest, most efficient way of doing this job.

#### BUD WISE-GRIP TEST PRODS WITH 1" PLASTIC HANDLE



Prod is made of brass rod, and is nickel plated. 1" plastic handle is threaded at one end and prod screws into same.  
Needle Chuck — Black or Red. Cat. No. TP-93.....Dealer Cost \$ .15  
Phone Tip — Black or Red. Cat. No. TP-94.....Dealer Cost \$ .15  
Banana Plug — Black or Red. Cat. No. TP-477A.....Dealer Cost \$ .15

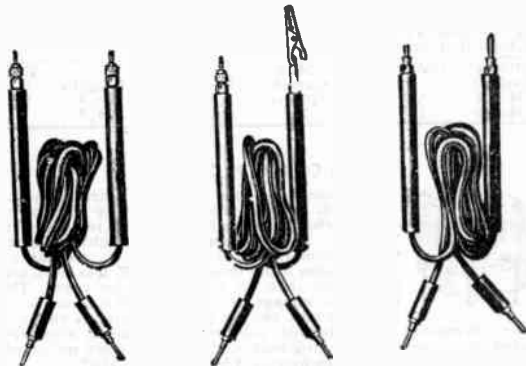
#### BUD WISE-GRIP TEST PRODS WITH 4" PLASTIC HANDLE



Prods are identical to those described on the left. Plastic handle is 4" long and made of the best material obtainable.  
Needle Chuck — Black or Red. Cat. No. TP-95.....Dealer Cost \$ .27  
Phone Tip — Black or Red. Cat. No. TP-96.....Dealer Cost \$ .25  
Banana Plug — Black or Red. Cat. No. TP-97.....Dealer Cost \$ .25

#### BUD SUPER TEST LEADS

All BUD Super Test Leads use BUD "Wise-Grip" Prods that screw into the highly polished 4" or 1" plastic handles on each end of the leads. The finest, flexible, kinkless, rubber covered wire obtainable is used on all BUD Test Leads.



No. TL-178 is supplied with 4" handles at one end of the wires with removable needle points and on other end 1" handle with phone tips. Cat. No. TL-178.....Dealer Cost \$1.10  
No. TL-179—4" handles, one with removable needle point and the other with phone tip and removable alligator clip. 1" handles with phone tips. Cat. No. TL-179.....Dealer Cost \$1.25  
No. TL-180 have 4" plastic handles with phone tips on one end. Other end, 1" handles with phone tips as illustrated above. Cat. No. TL-180.....Dealer Cost \$1.00

#### BUD INSULATED FLEXIBLE COUPLINGS



Tandem operation of two or more units is readily accomplished through the use of these couplers. Direct shaft alignment is not essential, and all couplers are made to fit 1/4" shafts.

Catalog No.	Diameter	Height	Insulation	Dealer Cost
FC-795	1 1/4"	1 1/4"	Ceramic	\$ .39
FC-845	1 1/2"	5/8"	Bakelite	.30
FC-855	1 1/2"	1 1/4"	Bakelite	.35

#### BUD HIGH VOLTAGE FLEXIBLE COUPLINGS



A new type spring construction in these couplings permits a wide gap between shaft connections, freedom from back-lash, and unusual flexibility. The springs are attached to glazed Steatite discs 1 1/2" in diameter and 3/16" thick, and the overall diameter of the finished coupling is 1 1/4". Coupling accommodates standard 1/4" shaft. Springs are also attached to Bakelite discs 1 1/4" in diameter.

Catalog No.	Insulation	Dealer Cost
FC-614	Steatite	\$ .54
FC-619	Bakelite	.39

#### BANANA PLUGS AND JACKS (Brass Nickel Plated)

Banana plug jack, threaded 1/4 - 28, supplied with nut and solder lug. Cat. No. PJ-949

Dealer Cost \$ .09



Banana plug Overall Length 1 1/4" Shank threaded 6-32, supplied with 6-32 nut. Cat. No. PL-470

Dealer Cost \$ .12



Insulated banana plug jack, complete with insulated washers, solder lug and nut. Cat. No. PJ-478

Dealer Cost \$ .12

Banana plug. Shank tapped for 6-32 screws. Nickel plated. Cat. No. PL-469

Dealer Cost \$ .09

#### GIANT BANANA PLUGS AND JACKS FOR HEAVY DUTY APPLICATIONS

Giant banana jack, complete with nut and solder lug. For mounting, drill 3/8" hole. Cat. No. PJ-963

Dealer Cost \$ .15

PJ-963



Giant plug, tapped 10-32. Positive spring action assures firm contact. Cat. No. PL-962

Dealer Cost \$ .18

PL-962



PJ-476



PL-475A

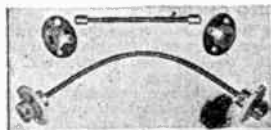
Giant insulated banana plug jack, complete with insulated washers, solder lug and nut. To mount, drill 1/2" hole. Cat. No. PJ-476A

Dealer Cost \$ .24

High voltage insulated banana plug. Over all length 2 3/4". Excellent for heavy duty applications. Cat. No. PL-475A

Dealer Cost \$ .30

#### BUD FLEXIBLE SHAFTS AND COUPLERS



When construction necessitates the mounting of condensers or potentiometers away from the panel and at unusual angles, these Flexible Shafts simplify panel control problems. Both lengths are remarkably free from back-lash and will turn at any angle up to 90°.

No. FS-859 and FS-860 have 1/4" bushings sweated to each end to fit either plain or insulated couplings. No. FS-862 and FS-863 have Steatite insulated couplings attached to each end to fit 1/4" shafts.

Catalog Number	Overall Length	Dealer Cost
FS-859	3 1/2"	\$ .33
FS-860	6 1/2"	.42
FS-862	4 1/2"	1.00
FS-863	7 1/2"	1.15

Where materials are specified Black Wrinkle Finish, and Grey is desired, a charge of 15% additional will be made.

Prices on above slightly higher west of the Mississippi River

These pages show only a few of many BUD Products. For complete catalog, write BUD RADIO INC., Dept. ANH, 2118 E. 55th St., Cleveland 3, Ohio

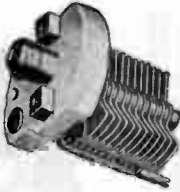


# HAMMARLUND

SINCE 1910



## "APC" MICRO CAPACITORS



The "APC" originated in the Laboratories of the Hammarlund Mfg. Co. over twenty years ago and because it is the most widely copied Air Trimmer today, it speaks eloquently for the soundness of its engineering design.

These units feature all brass soldered construction, nickel plating, silicone treated steatite panels, and precision formed rotor contact springs, combined with Hammarlund quality, make this capacitor a necessity for peak performance in today's rigid requirements.

Available in stock sizes as listed with a standard nominal air gap of .015" with a test voltage of 600 V. RMS, 60 cycles. Other air gaps available are .0195", .025", .030", .045". Modifications such as insulated adjustment head, extension shaft, lock type bearing, flats on shaft, etc., are obtainable.

Code	Capacity	Net
APC-25	25 mmf.....	\$1.02
APC-50	50 mmf.....	1.14
APC-75	75 mmf.....	1.26
APC-100	100 mmf.....	1.38
APC-140	140 mmf.....	1.62

## "MAPC" CAPACITORS



The Midget "APC" capacitor or "MAPC" is a worthy mate for the "APC". It is about one-half the size and weight of the "APC" but retains the same constructional features and quality. The "MAPC" has two isolated mounting studs 17/32" apart, shaft slotted for screw driver adjustment. Steatite base size 25/32" x 15/16". Army, Navy, and commercial engineers find this new unit ideal for today's trend towards minaturization.

Standard units as listed have nominal spacing of .0135". Other spacing available are .018" and .027". Modifications such as shaft extension, insulated adjustment head, extension shaft, and locking type bearing are also available.

Code	Capacity	Net
MAPC-15	15 mmf.....	\$0.99
MAPC-25	25 mmf.....	1.02
MAPC-35	35 mmf.....	1.08
MAPC-50	49 mmf.....	1.14
MAPC-75	75 mmf.....	1.26
MAPC-100	99 mmf.....	1.38

## "HF" MICRO CAPACITORS



The "HF" employs "APC" construction featuring a special panel permitting either single hole or bracket mounting.

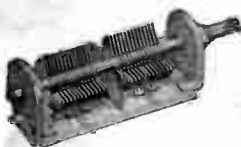
Silicone treated steatite panel 1-5/16" x 1-3/16" coupled with all brass, soldered, nickel plated construction, long sleeve bearing, and positive contact spring give this unit a stable and noiseless quality which accounts for its popularity.

The "HF" is supplied with a standard nominal .015" air gap with a test voltage of 600 V. RMS 60 cycles and the "HF-X" with nominal .045" air gap with a test voltage of 1400 V. RMS 60 cycles. Standard units have 1/2" long, 1/4" shaft. Special spacing and modifications are available.

Code	Capacity	Net
HF-15	17.5 mmf.....	\$1.02
HF-35	36 mmf.....	1.17
HF-50	52 mmf.....	1.23
HF-100	102 mmf.....	1.53
HF-140	142 mmf.....	1.74
*HF-15-X	15 mmf.....	1.23
*HF-30-X	30 mmf.....	1.38

\* .045 spacing.

## "HFD" MICRO DUAL CAPACITORS



The "HFD" while available as listed and having the same electrical characteristics per section as the "HF" is also one of the most flexible designs to stem from the Hammarlund Laboratories.

This unit has two heavy aluminum end brackets mounted on silicone treated steatite base for strength and stability, long sleeve front bearing and rear bearing, individual silver plated beryllium contact springs on each section for noiseless operation. An electrical shield is provided between sections. This capacitor is 1-1/2" high x 1" wide, with 1/2" long 1/4" shaft.

Modifications of basic design to include up to five sections of varying capacities are obtainable. This is truly a unit which can be tailored to the engineers individual requirements. Either single hole or base mounting are standard with all versions of this capacitor.

Code	Capacity	Net
HFD-50	52 mmf. per sect.....	\$2.82
HFD-100	102 mmf. per sect.....	3.18
HFD-140	142 mmf. per sect.....	3.60
*HFD-15-X	16 mmf. per sect.....	2.76
*HFD-30-X	28.5 mmf. per sect.....	3.00

\* .045 spacing.



# HAMMARLUND

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## "MC" AND "MCX" CAPACITORS

The "MC" and "MC-X" capacitors available with SLC or midline plates are widely used in all applications for frequencies up to 60 megacycles, and are designed to satisfy the most critical and exacting requirements. Vibration proof for Aircraft, Marine and mobile use. These units are of brass soldered nickel plated construction with silicone treated steatite insulation outside of the electrostatic field to reduce dielectric losses and to insure maximum efficiency under various conditions of humidity and temperature. A beryllium copper silver plated rotor contact spring and precision sleeve bearings give noise free operation. "MC" types have a nominal .0245" air gap tested at 1000 V. RMS 60 cycles. "MC-X" types have a nominal .0715" air gap tested at 1750 V. RMS 60 cycles. The "MC" family have 1/4" shaft with rear extension for gang operation. The whole series have rotational stops which nominally permit increasing capacity with clockwise rotation of shaft. "S" types are 1-11/16" wide and 2-3/4" high. "M" types are 2-3/32" wide and 2-7/8" high. These dimensions include swing of rotor plates.

Code	Capacity	Net
MC-20-S	20 mmf.....	\$1.80
MC-35-S	35 mmf.....	1.86
MC-50-S	50 mmf.....	1.92
MC-50-M	50 mmf.....	1.92
MC-75-S	80 mmf.....	2.04
MC-75-M	80 mmf.....	2.04
MC-100-S	100 mmf.....	2.16
MC-100-M	100 mmf.....	2.16
MC-140-S	140 mmf.....	2.34
MC-140-M	140 mmf.....	2.34
MC-200-M	200 mmf.....	2.58
MC-250-M	260 mmf.....	2.70
MC-325-M	320 mmf.....	2.94
MC-20-SX	20 mmf.....	2.04
MC-20-MX	20 mmf.....	2.04
MC-35-SX	32 mmf.....	2.22
MC-35-MX	32 mmf.....	2.22
MC-50-SX	53 mmf.....	2.52
MC-50-MX	53 mmf.....	2.52
MC-100-SX	100 mmf.....	2.94

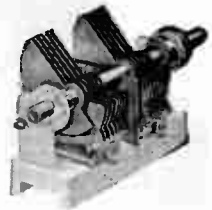


M—Midline Capacity Plates  
S—Straight-Line Capacity Plates  
X—.0715 Spacing

## "MCD" AND "MCD-X" CAPACITORS

"MCD" and "MCD-X" capacitors are dual section units having the same constructional feature of the "MC". The "MCD" and "MCD-X" are mounted on a sturdy channel silicone treated steatite base. Same spacings as the "MC" types available.

Code	Capacity per sect.	Net
MCD-50-M	50 mmf.....	\$3.60
MCD-100-S	100 mmf.....	3.90
MCD-100-M	100 mmf.....	3.90
MCD-140-M	140 mmf.....	4.20
MCD-35-MX	31 mmf.....	4.08
MCD-35-SX	31 mmf.....	4.08



M—Midline Cap. Plates. S—Straight-Line Cap. Plates.  
X—.0715 Spacing.

## "RMC" CAPACITORS

The "RMC" was born out of the electronic industries demand for the extreme rigidity this capacitor affords. It utilizes the "MC-S" type soldered brass plate assemblies incorporated in a ruggedized frame consisting of aluminum end plates and three tie rods. A front sleeve bearing and single ball thrust rear bearing are used together with a positive rotor contact spring. The resulting unit has many applications where ruggedness is required.

Code	Capacity	Net
RMC-50-S	50. mmf.....	\$2.22
RMC-100-S	105. mmf.....	2.55
RMC-140-S	143.5 mmf.....	2.70
RMC-325-S	327. mmf.....	3.39



Two removable brackets at the top of panels make for easy mounting of components or with the two tapped holes at the bottom and tapped holes in the panel permit three mounting possibilities. The same air-gaps as the "MC" are available. Dimensions are 1-13/16" wide x 1-11/16" high with 1/4" shaft.

## FLEXIBLE COUPLINGS

These flexible couplings come both insulated and non insulated. The insulated "FC-46-S" employs a silicone treated steatite body and provides maximum insulation. It is 13/16" in width and 1-1/4" in diameter. The metal body of the non insulated "FNC-46-S" is 23/32" wide with a diameter of 1-1/4". Both take 1/4" shafts and will compensate for considerable misalignment.

Code	Net
FC-46-S—Insulated .....	\$0.66
FNC-46-S—Non-Insulated..	.66



## "NZ-10" NEUTRALIZING CAPACITOR

The "NZ-10" has rounded edge formed aluminum plates mounted on glazed isolantite pillars. This unit is rugged and features a fine-threaded horizontal adjusting screw with positive lock. Stands 2-15/16" high and 1-13/16" wide x 2-7/8" in fully open position.

Code	Net
NZ-10—(2.3—10 mmf.)	\$3.15



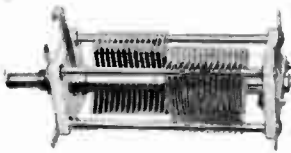


# HAMMARLUND

SINCE 1910



## "HFA" AND "HFAD" CAPACITORS

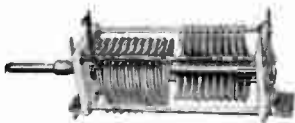


The "HFA" is a high efficiency, high frequency transmitting type capacitor of unusual design. All parts are brass, soldered and nickel plated mounted on treated steatite end panel  $1\frac{1}{8}$ " x  $1\frac{1}{2}$ " with  $\frac{1}{4}$ " shaft.

The "HFAD" is a dual unit with balanced opposed sections of the same type construction with two end panels  $1\frac{1}{8}$ " square and  $\frac{1}{4}$ " shaft. Both these units are ideal for low power portable transmitters and are available in 3 stock spacings; "A" .020", "B" .030", and "E" .070". The "E" type also has round edge plates. Both of these units may be single hole panel or base mounted.

Code	Capacity	Type	Net
HFAD-25-B	25 mmf.	Dual	\$3.60
HFA-100-A	102 mmf.	Single	1.98
HFA-140-A	145 mmf.	Single	2.31
HFA-10-B	9 mmf.	Single	1.53
HFA-15-B	16 mmf.	Single	1.62
HFA-25-B	25 mmf.	Single	1.68
HFA-50-B	50 mmf.	Single	1.86
HFA-100-B	100 mmf.	Single	2.46
HFA-15-E	16 mmf.	Single	1.68

## "HFB" TRANSMITTING CAPACITORS "HFBD"

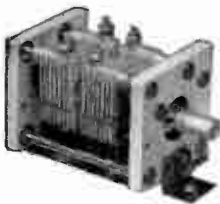


The "HFB" while similar in most respects to the "HFA" types have insulated  $\frac{1}{4}$ " shaft extensions which permit high voltage to be applied to the rotor without danger to the operator. This allows a higher tube voltage for a given plate spacing and results in a less expensive, more compact unit.

The "HFBD" is the dual version with the same features with each section in balanced opposition. Both use  $1\frac{1}{8}$ " square steatite panels and are base mounted.

Code	Capacity	Net
HFBD-50-C	50 mmf.....	\$5.40
HFBD-100-C	105 mmf.....	6.36
HFB-35-E	37 mmf.....	4.77
HFB-65-E	68 mmf.....	5.46
HFB-50-C	48 mmf.....	4.20

## "VU" UHF CAPACITOR



The "VU" Capacitors offer completely silent electrical operation made possible through the use of pyrex glass ball bearings making them adaptable in circuits up to 300 mc. These new bearings completely eliminate wiping contacts and metal sleeves. Elimination of rotor contacts by use of series stators permits a more symmetrical design of the capacitor itself and consequently allows better circuit layout. Two sets of threaded studs are provided, so that a vacuum tube may be mounted on one side and inductor on the other side of the capacitor to minimize lead inductance. The stator sections provide a low inductance path between the two sets of stud contacts. Panel size is  $1\frac{1}{8}$ " x  $1\frac{1}{8}$ ". Shaft size  $\frac{1}{4}$ ".

These units are supplied in standard sizes as listed in all brass soldered silver plated construction and may be obtained as specially calibrated precision units. Calibration table and complete description furnished on request.

Code	Series Min. Cap.	Series Eff. Capacity	Net
VU-20	3.35	22.5 mmf.	\$6.45
VU-30	3.5	31.5 mmf.	6.90
VU-45	3.8	45.0 mmf.	7.62

## BUTTERFLY CAPACITOR



The "BFC" Butterfly type of capacitor is designed to meet the demand for an opposed rotor and stator (90 degree rotation) capacitor for use in commercial VHF equipment. The rugged design of this unit lends itself to mobile use and its brass soldered construction with symmetrical design provides easy association with other components for electrical circuit symmetry. Furnished in standard sizes as listed mounted on silicone treated steatite panel  $1\frac{3}{8}$ " square. Two studs on  $1\frac{3}{8}$ " centers are provided for panel mounting. Shaft size is  $\frac{1}{4}$ ".

Modifications may be obtained and by the addition of a rear panel with special ball bearing both front and rear a unit may be obtained for continuous rotation at speeds up to 2400 R.P.M. The "BFC" is also obtainable in different plate spacings and capacities on special order.

Code	MMF Cap. per Sec. Max. Min.	Series Cap. Max. Min.	Net
BFC-12	14.5 3.5	7.9 2.2	\$1.50
BFC-25	27.5 5.0	14.5 3.0	1.68
BFC-38	40.5 6.3	21.0 3.7	1.98



*Thank You!*

When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

***RADIO'S MASTER***

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" CABINET RACKS—for 19" Rack Panels

These are professional type racks that have been used on many commercial installations, and make a DeLuxe job of any amateur or broadcast transmitter. The racks are of all-steel construction, welded into an integral unit, to give a lifetime of service.

All panel mounting screws are concealed by means of a full length corner trim on each side at the front. In keeping with modern design, this front trim is rounded on the vertical corners. The rear corners are finished with regular angle trim. The front of the rack is trimmed with chrome moulding top and bottom. The door has a grille at top and bottom, and is hung on sturdy loose-joint hinges; it is held closed by two flush snap-action catches. Additional ventilation is provided

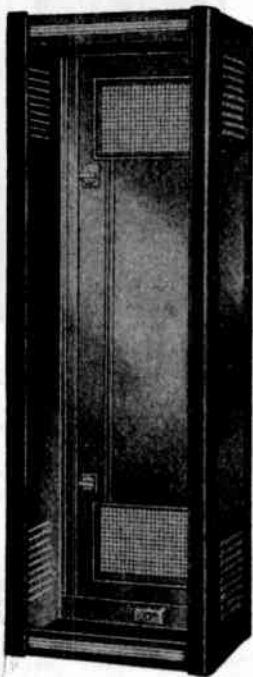
by louvres at the sides. The panel mounting angle irons are 3/16" thick, with mounting holes accurately drilled and tapped 12/24 thread on multiple 1 1/4"—1/2" spacings. The rack is made from 1/16" thick cold rolled steel, rigidly braced and reinforced throughout; the bottom is 3/8" thick steel. A rectangular opening is provided in the bottom for conduits, leads, etc. A duplex receptacle and outlet box are provided in the back under the door.

**FINISHES:** Either black ripple or slate grey ripple enamel. Corner trims are supplied in dull black, slate grey smooth enamel, or aluminum grey lacquer at extra cost. Also available in prime coat only.

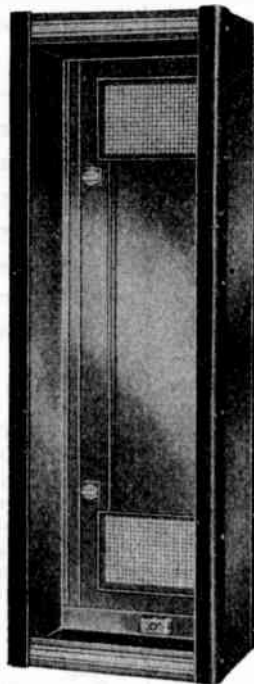
**RACKS WITHOUT LOUVRES:** To permit racks to be set up in gangs or rows of two or more, the louvres at sides are omitted. Racks may be joined by a flat trim fastened to front of adjacent racks, overlapping both racks. Shipped with corner trim as illustrated; where specified, front joining trim will be substituted in place of corner trim at same price. Front joining Trims cannot be used on racks with front doors.

Roller Truck No. RT-415 may be used for all 15 1/4" deep racks. Use No. RT-418 for all 18" deep racks. Standard shelves are available for all racks listed.

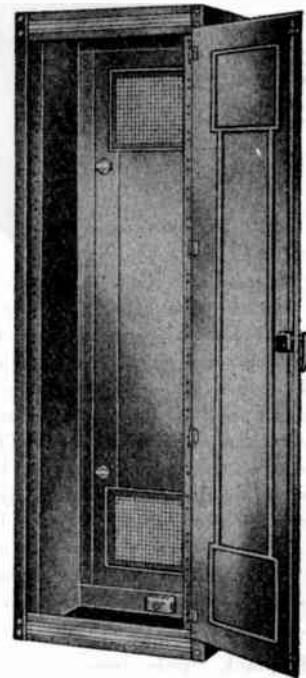
### WITH LOUVRES



### WITHOUT LOUVRES



### WITH FRONT DOORS



#### \*BLACK RIPPLE ENAMEL

##### 15 1/4" Deep Racks

Cat. No.	Overall Size	Panel Space	Wt. lbs.	Net Price
R-3675	42 7/8" x 22" x 15 1/4"	36 3/4"	150	\$54.00
R-6625	67 3/8" x 22" x 15 1/4"	61 1/2"	210	72.00
R-8325	83 1/8" x 22" x 15 1/4"	77"	240	93.00

##### 18" Deep Racks

R-3618	42 7/8" x 22" x 18"	36 3/4"	160	60.00
R-6618	67 3/8" x 22" x 18"	61 1/2"	230	78.00
R-8318	83 1/8" x 22" x 18"	77"	280	99.00

\*If slate grey ripple enamel is required substitute letters "RG" instead of "R" when ordering.

#### \*BLACK RIPPLE ENAMEL

##### 15 1/4" Deep Racks

Cat. No.	Overall Size	Panel Space	Wt. lbs.	Net Price
P-3675	42 7/8" x 22" x 15 1/4"	36 3/4"	150	\$54.00
P-6625	67 3/8" x 22" x 15 1/4"	61 1/2"	210	72.00
P-8325	83 1/8" x 22" x 15 1/4"	77"	240	93.00

##### 18" Deep Racks

P-3618	42 7/8" x 22" x 18"	36 3/4"	160	60.00
P-6618	67 3/8" x 22" x 18"	61 1/2"	230	78.00
P-8318	83 1/8" x 22" x 18"	77"	270	99.00

\*If slate grey ripple enamel is required, substitute letters "PG" instead of "P" when ordering.

#### \*BLACK RIPPLE ENAMEL

Racks are 22" wide, 18" deep. Panels mount 2" from front allowing 14" clear inside depth behind panels to rear door.

The 2" dimension may be modified without charge.

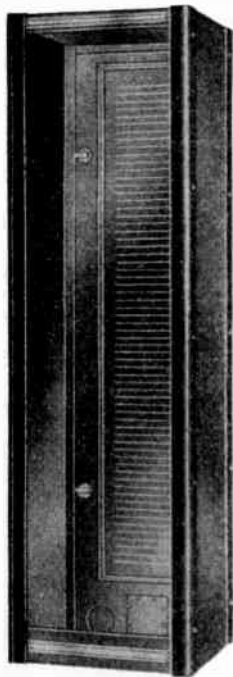
	Catalog F-6618	Number F-8318
Overall Height	67 3/8"	83 1/8"
Available panel space	61 1/2"	77"
Clear inside width (front)	19 1/4"	19 1/4"
Clear inside width (rear)	17 3/4"	17 3/4"
Net Price	\$105.00	\$129.00

\*If slate grey ripple enamel is required, substitute letters "FG" instead of "F" when ordering.

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" TRANSMITTER RACKS

**STANDARD TYPE**—for 19" & 30" Rack Panels



Similar to standard type "C" racks listed on page J-77 except that they have been reinforced at rear corners for use with heavier apparatus. At the rear, knockouts are provided for conduit and 4" square duct, as well as a double convenience outlet with receptacle. Knockouts are also supplied at sides for conduit, suitable for entry of cables when units are ganged. The rear door, which is removable, has ample louvres for ventilation, and is covered on the inside with mesh screening. Front trim rounded on vertical corners. Racks are regularly supplied with corner trim for use as a single unit, but will be furnished with suitable front connecting strips for ganging in rows of two or more without additional charge.

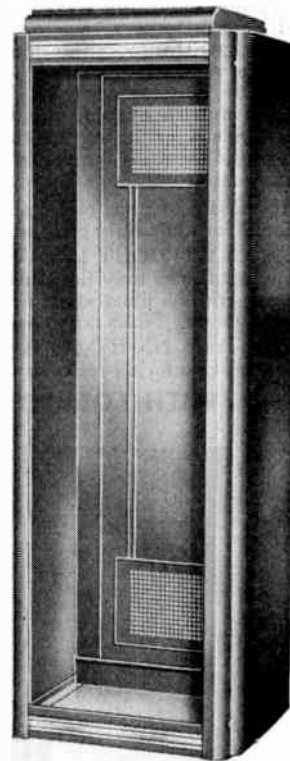
**FINISH:** Black ripple enamel with dull black corner trim is standard. Slate grey ripple enamel furnished without additional charge, if so specified. For aluminum grey lacquer finish, add 10% to prices.

**PANELS:** Type "C" panels to fit the G-2218 and G-2219 racks are listed on page J-81. For cost of 30" blank panels to fit the G-3024 rack, add 100% to prices of 19" panels on page J-81.

Catalog No.	Overall Size	Panel Space	Clear Depth	Ship. Wt. Lbs.	Net Price
G-2218	76 $\frac{1}{8}$ x 22 x 18"	70 x 19"	16 $\frac{3}{8}$ "	270	\$105.00
G-2219	83 $\frac{3}{8}$ x 22 x 18"	77 x 19"	16 $\frac{3}{8}$ "	290	117.00
G-3024	76 $\frac{1}{8}$ x 33 x 24"	70 x 30	22 $\frac{1}{8}$ "	450	174.00

**DELUXE TYPE**—for 19" Rack Panels

These new enclosed type racks combine rugged construction with modern styling and improved design. Made from  $\frac{1}{8}$ " steel, rigidly braced and reinforced throughout. Bottom is  $\frac{3}{16}$ " thick. Panel mounting angles are  $\frac{3}{16}$ " steel, drilled and tapped 12/24 thread on standard 1 $\frac{1}{4}$ -1 $\frac{1}{2}$ " spacings. Front vertical trims to cover panel screws are quick detachable type. Racks may be grouped without front joining trims. Rear door is hung on slip-joint hinges; door held closed with chrome handle and linkage rods; keys supplied. Large opening in bottom for conduits, etc.



**SHELVES:** Use R-2218 for 18 $\frac{1}{2}$ " racks; use R-2224 for 24" racks.

**ROLLER TRUCKS:** Use R-2218 for 18 $\frac{1}{2}$ " racks; use R-2224 for 24" racks.

**FINISHES:** In addition to finishes specified below, aluminum grey lacquer is also standard. Also available in prime coat only.

**NOTE:** Clear inside width at front and rear of all racks is 17 $\frac{3}{4}$ ". Clear inside depth of 18 $\frac{1}{2}$ " racks is 16 $\frac{1}{2}$ "; clear inside depth of 24" racks is 22".

### 18 $\frac{1}{2}$ " Deep Racks

Catalog No.	Finish	Overall Size	Panel Space	Shpg. Wt. Lbs.	Net Price
P-6918	Black Ripple	69 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	61 $\frac{1}{4}$ x 19"	230	\$ 94.50
PG-6918	Slate Grey Ripple	69 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	61 $\frac{1}{4}$ x 19"	230	94.50
P-7818	Black Ripple	78 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	70 x 19"	255	103.50
PG-7818	Slate Grey Ripple	78 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	70 x 19"	255	103.50
P-8518	Black Ripple	85 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	77 x 19"	280	117.00
PG-8518	Slate Grey Ripple	85 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 18 $\frac{1}{2}$ "	77 x 19"	280	117.00

### 24" Deep Racks

P-6924	Black Ripple	69 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	61 $\frac{1}{4}$ x 19"	260	\$111.00
PG-6924	Slate Grey Ripple	69 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	61 $\frac{1}{4}$ x 19"	260	111.00
P-7824	Black Ripple	78 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	70 x 19"	290	120.00
PG-7824	Slate Grey Ripple	78 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	70 x 19"	290	120.00
P-8524	Black Ripple	85 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	77 x 19"	320	135.00
PG-8524	Slate Grey Ripple	85 $\frac{3}{8}$ x 23 $\frac{3}{8}$ x 24"	77 x 19"	320	135.00

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "A" ENCLOSED RELAY RACKS FOR 19" RACK PANELS

All of the racks on this page are shipped "knocked-down" for easy assembly with all necessary bolts supplied. Made for standard 19" wide panels, they are substantially constructed from 1/16" cold rolled steel; panel mounting angles are of 3/4" steel, accurately drilled on universal centers for either "Amateur" or type "C" panels, tapped for 10/32

machine screws. Panels fit into a recess, so that edges are not exposed. Louvres in sides and screen sections in rear door provide ample ventilation. Rear door is hung on sturdy loose-joint hinges, and closed by a flush snap catch. Ample panel mounting screws and washers supplied with each rack.

### STANDARD TYPE



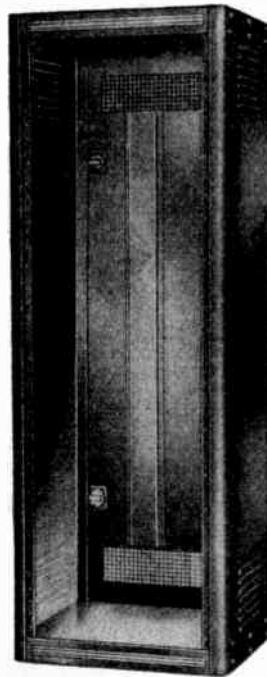
This completely enclosed rack will give your job the "professional appearance" so desirable on transmitters, test equipment, public address systems, etc. May be mounted on Roller Truck No. RT-401. Shelves are also available (No. ER-2012).

#### \*BLACK RIPPLE ENAMEL

Cat. No.	Overall Size	Panel Space	Shpg. Wt. lbs.	Net Price
ER203	42 x 21 x 16 1/4"	36 1/4"	85	\$26.40
ER205	66 1/2 x 21 x 16 1/4"	61 1/4"	120	39.60
ER207	82 1/2 x 21 x 16 1/4"	77"	145	48.60

\*Slate grey ripple is optional

### ROUNDED CORNER TYPE



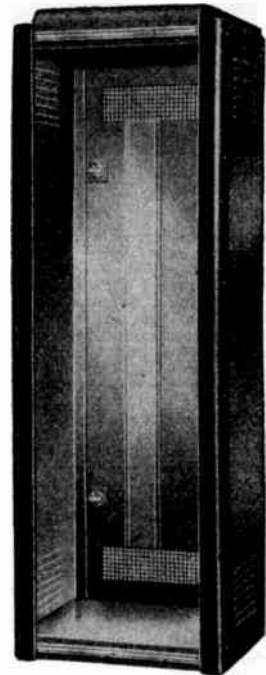
The ideal streamlined rack for your next transmitter or P.A. system. The vertical corners at the front of the rack are rounded, and the top and bottom are nicely trimmed with red striped chrome finished mouldings. The uniform slate grey ripple finish gives the assembly a superb exterior appearance. May be mounted on Roller Truck No. RT-411. Shelf available is No. ER-2112.

#### \*SLATE GREY RIPPLE ENAMEL

Cat. No.	Overall Size	Panel Space	Shpg. Wt. lbs.	Net Price
ER213	42 x 22 x 16 1/2"	36 1/4"	85	\$30.30
ER215	66 1/2 x 22 x 16 1/2"	61 1/4"	125	45.60
ER217	82 1/2 x 22 x 16 1/2"	77"	150	54.00

\*Black ripple is optional.

### DELUXE TYPE



Produced in the new "streamlined" style, this rack is fully in keeping with modern design. The removable vertical corner mouldings are rounded and cover the panel mounting screws, the same as is used on our Type "C" commercial racks. The top, which has also been "streamlined," is perforated at the back to provide additional ventilation. The top and bottom are trimmed with red striped chrome finished mouldings. May be mounted on Roller Truck No. RT-412. Shelf available is No. ER-2212.

#### \*SLATE GREY RIPPLE ENAMEL

Cat. No.	Overall Size	Panel Space	Shpg. Wt. lbs.	Net Price
ER223	43 1/2 x 22 x 18"	36 1/4"	90	\$42.00
ER225	67 1/2 x 22 x 18"	61 1/4"	135	54.60
ER227	83 1/2 x 22 x 18"	77"	165	66.00

\*Black ripple is optional.

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## DELUXE TYPE "A" DESK PANEL CABINET RACKS

For Standard 19" Rack Panels  
Black Ripple Finish

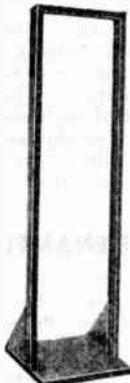


Streamlined styling. In keeping with our other Deluxe racks, the vertical front corners are rounded and the top and bottom are trimmed with chrome finished mouldings. Panels fit into a recess, so that the edges are not exposed. Panel mounting holes accurately drilled on universal centers, for either "Amateur" or type "C" panels; holes are tapped for 10/32 machine screws. May be used with any chassis up to 13" x 17" in size. All cabinets constructed of 1/4" thick sheet steel. Louvres provide ample ventilation through sides and back. Piano type hinges are used on the top doors, which are provided with snap catches. Panel mounting screws and washers are furnished. Black ripple enamel is standard. Slate grey is optional at same price.

Cat. No.	Overall Size	Panel Space	Net Price
With door in top only			
DL128	10 1/2 x 21 1/2 x 15" deep	8 3/4"	\$11.10
DL1210	12 1/4 x 21 1/2 x 15" deep	10 1/2"	12.45
DL1225	14 x 21 1/2 x 15" deep	12 1/4"	13.35
DL1413	15 3/4 x 21 1/2 x 15" deep	14"	15.00
With door in top and door on rear panel			
DL1713	19 1/4 x 21 1/2 x 15" deep	17 1/2"	18.30
DL2613	28 x 21 1/2 x 15" deep	26 1/2"	20.70
DL3513	36 3/4 x 21 1/2 x 15" deep	35"	23.40

## TYPE "A" CHANNEL RELAY RACKS

For Standard 19" Rack Panels  
Black Ripple Finish

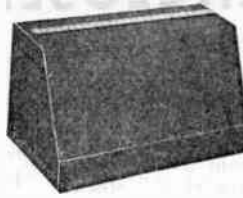


Ideal for use on all types of transmitters and public address systems. Substantially constructed of pressed steel. Vertical members and top cross-brace securely welded together. Base is 22" deep and extends both front and rear on the RR-195 rack; it is 19" deep on the RR-193 rack. Panel mounting holes accurately drilled on universal centers for either "Amateur" or type "C" panels, tapped for 10/32 machine screws. Ample supply of panel mounting screws and finishing washers supplied.

Cat. No.	Overall Size	Panel Space	Shpg. Wt. lbs.	Net Price
RR-195	73 1/2 x 20 x 20"	71 3/4"	85	\$19.20
RR-193	38 3/4 x 20 x 18 3/4"	36 3/4"	57	15.90

## SLOPING FRONT CABINETS

Adaptable as instrument cases for studios, laboratories, etc. Top corner rounded and trimmed with chromemoulding. Slate grey ripple finish. A chassis may be mounted to front panel and removed as a unit. Rear of case ventilated, with opening for connections. Prices do not include chassis.



Cat. No.	H. W. D.	Size of Chassis	Net Price
SF-500	8 x 8 x 8"	7 x 7 x 2"	\$3.60
SF-501	8 x 10 x 8"	7 x 9 x 2"	3.90
SF-502	8 x 14 x 8"	7 x 13 x 2"	4.35
SF-503	9 x 18 x 8"	7 x 17 x 3"	6.15
SF-504	12 x 18 x 12"	10 x 17 x 3"	7.89

## ROLLER TRUCKS FOR RACKS

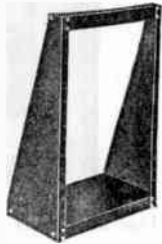
Designed for use on our racks. Overall size 3" wider than racks for better distribution of weight. Has rubber composition wheels. Finished in slate grey ripple, with chrome trim.



Cat. No.	Will Fit Rack No.	Price
RT-401	ER-203, ER-205, ER-207	\$7.95
RT-410	DL-2613, DL-3513	8.70
RT-411	ER-213, ER-215, ER-217	9.75
RT-412	All 18" deep racks	10.95
RT-415	All 15 1/2" deep racks	11.10

## TABLE TYPE RELAY RACKS

Useful where a regular floor type heavy duty rack is not required. Mounting holes accurately drilled on universal centers. Tapped for 10/32 screws. Finished in black ripple enamel and shipped "knocked-down" with all necessary screws. Shipping weight of rack is 20 pounds.



Cat. No.	Overall Size	Panel Space	Net Price
TR-2520	25 x 21 x 12"	21 x 19"	\$6.15
TR-3220	32 x 21 x 12"	28 x 19"	7.65

## STEEL UTILITY CASES

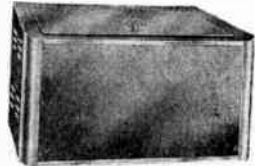
These cases have flat tops and bottoms, which are removable. Made from 20 gauge sheet steel, with flanged edges and spot-welded corners. Finished in black ripple enamel.



Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price
MC-442	4 x 4 x 2"	2	\$0.72
MC-453	4 x 5 x 3"	3	.81
MC-654	6 x 5 x 4"	3	.96
MC-596	5 x 9 x 6"	5	1.59
MC-666	6 x 6 x 6"	7	1.08
MC-8101	8 x 10 x 10"	7	2.49
MC-1128	11 x 12 x 8"	9	2.70
MC-1576	15 x 7 3/4 x 6 3/4"	11	2.55
MC-1597	15 x 9 x 7"	9	2.85
MC-8107	8 x 10 x 7"	6	2.49
MC-1276	12 x 7 x 6"	6	2.04

## HINGED STEEL CABINETS DE LUXE TYPE

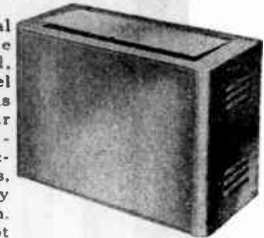
Has double roll on front vertical corners, and chrome finished mouldings. Ventilating louvres are stamped in each end, and a full width opening is provided at the rear for leads, etc. Finish is slate grey ripple enamel. Prices do not include chassis.



Cat. No.	H. L. D.	Panel Size	For Chassis	Net Price
CA-300	8 1/2 x 12 1/4 x 8"	8 1/2 x 10"	7 x 9 x 2"	\$5.07
CA-301	8 1/2 x 16 1/4 x 8"	8 1/2 x 14"	7 x 13 x 2"	5.85
CA-302	9 1/2 x 17 1/4 x 11"	9 1/2 x 15"	10 x 14 x 3"	8.40
CA-303	9 1/2 x 20 1/4 x 9"	9 1/2 x 18"	8 x 17 x 3"	8.40
CA-304	12 1/2 x 20 1/4 x 12"	12 1/2 x 18"	10 x 17 x 3"	9.30

## ROUNDED CORNER TYPE

Front vertical corners are streamlined, and a panel type door is provided. Rear opening allows for necessary leads, etc. Slate grey ripple finish. Prices do not include chassis.



Cat. No.	H. L. D.	Panel Size	For Chassis	Net Price
CA-200	8 x 10 x 8"	8 x 8"	7 x 7 x 2"	\$3.45
CA-201	8 x 12 x 8"	8 x 10"	7 x 9 x 2"	3.60
CA-202	8 x 16 x 8"	8 x 14"	7 x 13 x 2"	4.65
CA-203	9 x 17 x 11"	9 x 15"	10 x 14 x 3"	7.20
CA-204	12 x 20 x 12"	12 x 18"	10 x 17 x 3"	8.70

## STANDARD TYPE

Full piano hinged doors, front panels removable. Top corner at front is rounded. Finished in black ripple. Prices do not include chassis bases.



Cat. No.	H. L. D.	For Chassis	Net Price
CA-100	7 1/2 x 10 1/2 x 6"	5 1/2 x 9 1/2 x 1 1/2"	\$2.70
CA-101	7 1/2 x 8 x 8"	7 x 7 x 2"	2.70
CA-102	7 1/2 x 10 x 8"	7 x 9 x 2"	3.15
CA-103	7 1/2 x 14 x 8"	7 x 13 x 2"	3.51
CA-104	9 x 15 x 10 3/4"	10 x 14 x 3"	5.55
CA-105	12 x 18 x 12"	10 x 17 x 3"	6.60

## STEEL UTILITY CANS

Can be used for monitors, shield cans, etc. Made of sheet steel with spot welded reinforced corners. Tops and bottoms removable with self-tapping screws. Black ripple enamel finish.



Cat. No.	Overall Size	Shp. Wt. Lbs.	Net Price
UC-565	5 1/2 x 6 x 5 1/2"	3	\$1.05
UC-596	5 x 9 x 6"	5	1.68
UC-8107	8 x 10 x 7"	6	2.25
UC-8101	8 x 10 x 10"	7	2.70
UC-1128	11 x 12 x 8"	9	3.00

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## TYPE "C" RACK PANELS—19" WIDE

Unless otherwise indicated, these panels are made from  $\frac{1}{8}$ " thick steel and are uniformly slotted to fit type "C" cabinet racks and all type "A" racks. They will also fit any other rack equipment having multiple

$1\frac{1}{4}$ " -  $\frac{1}{2}$ " spacings or what is commonly termed as "W.E. spacing." They may be obtained in either black ripple enamel or slate grey ripple enamel. Panels can be furnished in aluminum grey lacquer at extra charge.

### BLANK PANELS $\frac{1}{8}$ " STEEL



These panels are made from  $\frac{1}{8}$ " thick steel and are uniformly slotted to fit type "C" cabinet racks made for 19" panels, and all type "A" racks. They will also fit any other rack equipment having multiple  $1\frac{1}{4}$  x  $\frac{1}{2}$ " spacings or what is commonly termed as "W.E. spacing." They may be obtained in either black ripple enamel or slate grey ripple enamel.

Cat. No. Black	Cat. No. Grey	Height	Net Price
6600	G-6600	1 $\frac{3}{4}$ "	\$0.66
6601	G-6601	3 $\frac{1}{2}$ "	.75
6602	G-6602	5 $\frac{1}{4}$ "	.93
6603	G-6603	7"	1.08
6604	G-6604	8 $\frac{3}{4}$ "	1.32
6605	G-6605	10 $\frac{1}{2}$ "	1.59
6606	G-6606	12 $\frac{1}{4}$ "	1.89
6607	G-6607	14"	2.16
6608	G-6608	15 $\frac{3}{4}$ "	2.46
6609	G-6609	17 $\frac{1}{2}$ "	2.70
6610	G-6610	19 $\frac{1}{4}$ "	3.00
6611	G-6611	21"	3.30

### BLANK PANELS $\frac{1}{8}$ " ALUMINUM

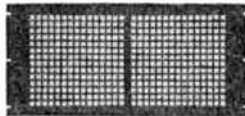


These panels are similar to those listed above, except that they are made from  $\frac{1}{8}$ " aluminum. They can also be supplied from  $\frac{1}{8}$ " stock, at an additional cost of 60%.

Unpainted panels with etched finish (caustic dip) are available at same price.

Cat. No. Black	Cat. No. Grey	Height	Net Price
6675	G-6675	1 $\frac{3}{4}$ "	\$0.69
6676	G-6676	3 $\frac{1}{2}$ "	.99
6677	G-6677	5 $\frac{1}{4}$ "	1.44
6678	G-6678	7"	1.74
6679	G-6679	8 $\frac{3}{4}$ "	2.10
6680	G-6680	10 $\frac{1}{2}$ "	2.64
6681	G-6681	12 $\frac{1}{4}$ "	3.06
6682	G-6682	14"	3.45
6683	G-6683	15 $\frac{3}{4}$ "	3.90
6684	G-6684	17 $\frac{1}{2}$ "	4.35
6685	G-6685	19 $\frac{1}{4}$ "	4.74
6686	G-6686	21"	5.07

### GRILLE PANELS $\frac{1}{8}$ " STEEL

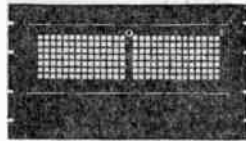


This modern type ventilating grille is stamped into the panel itself; it is not a pieced assembly.

Cat. No. Black	Cat. No. Grey	Panel Size	Grille Size	Net Price
P-661	G-661	5 $\frac{1}{4}$ "	3 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	\$2.46
P-662	G-662	7"	4 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	2.64
P-663	G-663	8 $\frac{3}{4}$ "	6 $\frac{1}{2}$ x 14 $\frac{3}{8}$ "	3.15
P-664	G-664	8 $\frac{3}{4}$ "	*3 $\frac{3}{4}$ x 14 $\frac{3}{8}$ "	2.85
P-665	G-665	10 $\frac{1}{2}$ "	8 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	3.45
P-666	G-666	10 $\frac{1}{2}$ "	*5 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	3.18
P-667	G-667	12 $\frac{1}{4}$ "	*7 $\frac{3}{8}$ x 14 $\frac{3}{8}$ "	3.75

\*Allows  $3\frac{1}{2}$ " space at bottom for chassis mounting.

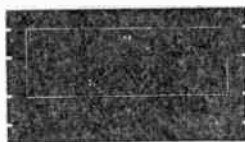
### GRILLE DOOR PANELS $\frac{1}{8}$ " STEEL



These panels have flush hinged doors with modern type ventilating grille. Doors are equipped with piano hinges, knob and concealed catch. All doors start 1" from top to allow space for chassis at bottom. Regular chassis brackets may be used.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Net Price
P-680	G-680	8 $\frac{1}{4}$ "	4 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	\$5.10
P-681	G-681	10 $\frac{1}{2}$ "	6 x 15 $\frac{3}{8}$ "	5.55
P-682	G-682	12 $\frac{1}{4}$ "	7 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	6.15

### SOLID DOOR PANELS $\frac{1}{8}$ " STEEL



These panels have flush hinged doors with full length piano hinges; they are equipped with a knob and concealed catch. All doors are located 1" from top to allow space for chassis at bottom. Regular chassis brackets may be used.

Cat. No. Black	Cat. No. Grey	Panel Size	Door Size	Net Price
P-670	G-670	8 $\frac{1}{2}$ "	4 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	\$3.90
P-671	G-671	10 $\frac{1}{2}$ "	6 x 15 $\frac{3}{8}$ "	4.20
P-672	G-672	12 $\frac{1}{4}$ "	7 $\frac{1}{2}$ x 15 $\frac{3}{8}$ "	4.65

### RECESSED METER PANELS $\frac{1}{8}$ " STEEL



These panels are made so that the meters may be recessed from the front of the panel. Meters are protected by a plate glass insert, allowing  $\frac{3}{4}$ " clearance in back of panel. A blank bakelite sub-panel is provided. The clear sub-panel space is 4 $\frac{1}{4}$ " x 15" on the 19" wide panel which is sufficient for 4-3" meters. On the 24" and 30" wide panel the clear sub-panel space is 5 $\frac{3}{4}$ " x 20" and 5 $\frac{3}{4}$ " x 26" respectively.

Cat. No. Black	Cat. No. Grey	Size	Net Price
P-690	G-690	5 $\frac{1}{4}$ " x 19"	\$5.55
P-691	G-691	7" x 24"	9.30
P-692	G-692	7" x 30"	12.60

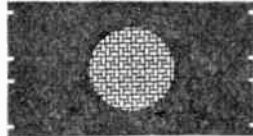
### METER PANELS $\frac{1}{8}$ " STEEL



All meter panels are 5 $\frac{1}{4}$ " x 19".

Cat. No. Black	Cat. No. Grey	No. of Holes	Meter Size	Net Price
MP-632	MG-632	3	2"	\$1.14
MP-652	MG-652	5	2"	1.65
MP-633	MG-633	3	3"	1.14
MP-653	MG-653	5	3"	1.65

### SPEAKER PANELS $\frac{1}{8}$ " STEEL



To fit either 6", 8", 10", or 12" speakers. The opening is covered with a steel grille.

Cat. No. Black	Cat. No. Grey	Panel Size	Speaker Size	Net Price
SP-875	SG-875	8 $\frac{3}{4}$ x 19"	6"	\$2.25
SP-1050	SG-1050	10 $\frac{1}{2}$ x 19"	8"	2.85
SP-1225	SG-1225	12 $\frac{1}{4}$ x 19"	10"	3.45
SP-1400	SG-1400	14 x 19"	12"	3.90

### STANDARD DESK PANELS



Tables are rigidly made of  $\frac{1}{16}$ " thick steel. Securely mounted to regular  $\frac{1}{8}$ " steel panels, size 10 $\frac{1}{2}$ " x 19". Tables 22" wide give full working space across front of racks when mounted in place.

Cat. No.	Width	Depth	Finish	Net Price
BT-2220	22"	20"	Black enamel	\$13.50
BT-2216	22"	16"	Black enamel	12.90
AT-2220	22"	20"	Aluminum grey	15.00
AT-2216	22"	16"	Aluminum grey	13.80

# PAR-METAL RACKS · CHASSIS · CABINETS for ELECTRONIC APPARATUS

## BLANK STEEL CHASSIS BASES

### STANDARD TYPE

Construction is the same as our heavy-duty chassis. Stamped from one piece of cold rolled steel, and have four solid sides with welded corners. Bottom edges are flanged in on four sides to provide additional reinforcement, and they are drilled for bottom plates. The chassis are made from #20 gauge steel, except those marked (\*) which are stamped from  $\frac{1}{8}$ " steel exactly like our heavy-duty type.

Black Ripple Cat. No.	Net Price	Size	Zinc Plated Cat. No.	Net Price
B-4500	\$0.72	5 $\frac{1}{2}$ x9 $\frac{1}{2}$ x1 $\frac{1}{2}$ "	C-4500	\$0.72
B-4507	.69	5x 7x2"	C-4507	.69
B-4508	.96	5x10x3"	C-4508	.96
B-4509	1.14	6x14x3"	C-4509	1.14
B-4510	.81	7x 7x2"	C-4510	.81
B-4511	.96	7x 9x2"	C-4511	.96
B-4512	1.02	7x11x2"	C-4512	1.02
B-4513	1.11	7x13x2"	C-4513	1.11
B-4514	1.32	7x15x3"	C-4514	1.32
B-4518	1.20	4x17x3"	C-4518	1.20
B-4515	1.44	7x17x3"	C-4515	1.44
B-4502	1.35	8x12x3"	C-4502	1.35
B-4531	1.38	8x17x2"	C-4531	1.38
B-4532	1.56	8x17x3"	C-4532	1.56
B-4525	1.38	10x12x3"	C-4525	1.38
B-4524	1.50	10x14x3"	C-4524	1.50
B-4528	1.50	10x17x2"	C-4528	1.50
B-4529	1.89	10x17x4"	C-4529	1.89
B-4526	1.53	10x17x3"	C-4526	1.53
B-4533*	2.10	11x17x2"	C-4533*	2.10
B-4534*	2.28	11x17x3"	C-4534*	2.28
B-4516	1.71	12x17x2"	C-4516	1.71
B-4517	1.89	12x17x3"	C-4517	1.89
B-4530	2.10	12x17x4"	C-4530	2.10
B-4535*	2.40	13x17x2"	C-4535*	2.40
B-4536*	2.64	13x17x3"	C-4536*	2.64
B-4537*	3.00	13x17x4"	C-4537*	3.00

\* Made from  $\frac{1}{8}$ " thick steel.

### BOTTOM PLATES

Bottom plates have holes to match the chassis, and have pressed "bumpers" at the corners.

Black Ripple Cat. No.	Zinc Plated Cat. No.	Size	Net Price
BP-4507	CP-4507	5x 7"	.36
BP-4502	CP-4502	8x12"	.60
BP-4500	CP-4500	5 $\frac{1}{2}$ x9 $\frac{1}{2}$ "	.33
BP-4508	CP-4508	5x10"	.36
BP-4509	CP-4509	6x14"	.48
BP-4510	CP-4510	7x 7"	.36
BP-4511	CP-4511	7x 9"	.39
BP-4512	CP-4512	7x11"	.45
BP-4513	CP-4513	7x13"	.51
BP-4514	CP-4514	7x15"	.57
BP-4518	CP-4518	4x17"	.45
BP-4515	CP-4515	7x17"	.60
BP-4531	CP-4531	8x17"	.60
BP-4525	CP-4525	10x12"	.60
BP-4524	CP-4524	10x14"	.63
BP-4528	CP-4528	10x17"	.78
BP-4527	CP-4527	10x23"	1.05
BP-4533	CP-4533	11x17"	.81
BP-4516	CP-4516	12x17"	.87
BP-4535	CP-4535	13x17"	.93

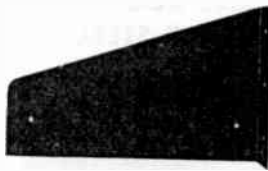
### HEAVY DUTY TYPE



All of the chassis listed on this page may be used with the various Par-Metal racks and cabinets. Substantially constructed for "heavy duty" uses, being formed from one piece of  $\frac{1}{8}$ " sheet steel, with all corners and bottoms reinforced. Bottom covers and mounting screws supplied. Ends drilled to fit standard brackets listed below. Finished in either uniform black ripple enamel or zinc plated.

Black Ripple Cat. No.	Net Price	Dimensions W.L.D.	Zinc Plated Cat. No.	Net Price
15280	\$2.52	8x17x2"	15208	\$2.52
15281	2.76	8x17x3"	15209	2.76
15282	2.91	11x17x2"	15218	2.91
15210	3.09	11x17x3"	15219	3.09
15212	3.33	13x17x2"	15214	3.33
15213	3.57	13x17x3"	15216	3.57
15216	3.93	13x17x4"	15217	3.93
15283	5.25	17x17x4"	15284	5.25

### CHASSIS MOUNTING BRACKETS



These brackets will fit any of the chassis listed above, as the mounting holes are drilled to match. Panels must be at least 7" high. Finished in black enamel.

Cat. No.	Dimensions	Shpg. Wt.	Net Price
SB-78	For 8" Base	2 lbs.	\$0.75
SB-710	For 10" Base	2 lbs.	.99
SB-711	For 11" Base	3 lbs.	1.08
SB-713	For 13" Base	3 lbs.	1.26
SB-717	For 17" Base & larger	5 lbs.	1.86

### STANDARD TYPE Amplifier Foundation Chassis



Rounded corners effectively streamline the covers on these units. Grille type ventilation gives them a modern appearance. Chassis stamped from one piece of cold rolled steel, with corners securely spot welded. Covers finished in slate grey, chassis in black ripple enamel. Chassis are drilled for bottom plates.

Chassis stamped from one piece of cold rolled steel, with corners securely spot welded. Covers finished in slate grey, chassis in black ripple enamel. Chassis are drilled for bottom plates.

Cat. No.	Size	Depth of Cover	Shpg. Wt.	Net Price
F-510	5x10x3"	6"	9 lbs.	\$2.52
F-615	6x14x3"	6"	10 lbs.	2.85
F-717	7x17x3"	6"	11 lbs.	3.45
F-1012	10x12x3"	6"	11 lbs.	3.45
F-1017	10x17x3"	6"	11 lbs.	4.26
F-1317	13x17x3"	6"	15 lbs.	5.07

### DELUXE TYPE

#### Amplifier Foundation Chassis



For those who prefer a deluxe unit with Recessed Panel.

Panel slopes slightly and attaches to chassis with screws. Screen cover may be raised without disturbing the panel. Cover finished in slate grey ripple. Chassis finished in black ripple and is drilled for bottom plates.

Cat. No.	Chassis Size	Depth of Cover	Panel Size	Net Price
FC-510	5 x 10 x 3"	6"	4 x 7"	\$4.50
FC-615	6 x 14 x 3"	6"	4 x 10"	5.10
FC-717	7 x 17 x 3"	6"	4 x 13"	5.70
FC-1012	10 x 12 x 3"	6"	4 x 9"	5.55
FC-1017	10 x 17 x 3"	6"	4 x 13"	6.60
FC-1317	13 x 17 x 3"	6"	4 x 13"	7.89

### SLOPING FRONT TYPE Amplifier Foundation Chassis



Latest trend in amplifier design. Combination of sloping front panel and streamlined cover enables you to build up a job similar to that used on commercial deluxe type amplifiers. All parts finished in slate grey ripple enamel trimmed with chrome moulding and handles. Front panel removable and protrudes 3" from face of screen cover. Chassis supplied complete WITH bottom plates.

Cat. No.	Chassis Size	Screen Cover	Net Price
F10120	10x12x3"	6 $\frac{1}{4}$ " high	\$6.30
F10170	10x17x3"	6 $\frac{1}{2}$ " high	7.20
F13170	13x17x3"	6 $\frac{1}{2}$ " high	8.10

### ROUNDED CORNER TYPE Amplifier Foundation Chassis

Modern professional type. Rounded corners on screen cover. Chrome mouldings & handles. Cover finished in slate gray, with black ripple chassis.



Cat. No.	Chassis Size	Depth of Cover	Shpg. Wt.	Net Price
DF510	5x10x3"	6"	9 lbs.	\$3.54
DF615	6x14x3"	6"	10 lbs.	4.05
DF717	7x17x3"	6"	11 lbs.	4.65
DF1012	10x12x3"	6"	11 lbs.	4.65
DF1017	10x17x3"	6"	13 lbs.	5.55
DF1317	13x17x3"	6"	15 lbs.	6.60

# ICA INSULINE ICA RADIO PRODUCTS

## ICA DE LUXE HINGED STEEL CABINETS



The cabinets have rounded corners with specially designed Chrome plated "Air-Gate" ventilators on sides; and vertical Chrome Plated Trim moulding on front. Modern grille type ventilators are provided on the back panels which also have an opening on the bottom to allow for leads, cable connections, etc.

Bottoms have 4 embossed feet. Finished in a beautiful Marine Gray Ripple Enamel.

No.	H.	W.	D.	Panel Size	Dealer Cost
3860.....	8" x 10"	8"	8"	8" x 8"	\$4.15
3861.....	8" x 12"	8"	8"	8" x 10"	4.62
3862.....	8" x 14"	8"	8"	8" x 12"	4.95
3863.....	12" x 20"	12"	12"	12" x 18"	9.41

## ICA STANDARD HINGED STEEL CABINETS

Designed in the same style and appearance as the De Luxe cabinets shown above except that the Chrome trim is eliminated. Sides and backs have ventilating louvres. Backs have opening for cable connections, etc. Top panel hangs on full sized piano type hinge. Bottoms have 4 embossed feet. Finished in Marine Gray Ripple Enamel.

No.	H.	W.	D.	Panel Size	Dealer Cost
3925.....	8" x 10"	8"	8"	8" x 8"	\$3.25
3926.....	8" x 12"	8"	8"	8" x 10"	3.63
3927.....	8" x 14"	8"	8"	8" x 12"	4.08
3928.....	12" x 20"	12"	12"	12" x 18"	8.74

## CHASSIS FOR ICA CABINETS

No.	Size	For Cabinet Numbers	Dir. Cost
4024.....	7" x 7" x 2"	3860 and 3925	\$ .76
4004.....	7" x 9" x 2"	3861 and 3926	.90
4005.....	7" x 11" x 2"	3862 and 3927	1.00
4033.....	10" x 17" x 3"	3863 and 3928	1.45

## ICA DE LUXE SLOPING PANEL CABINETS

The top corners are rounded and trimmed with an attractive striped chrome trim. The sides of the cabinets have the beautiful "Air-Gate" Chrome ventilators.

The front panel is removable so that the chassis can be attached to it and used as one unit. Beautifully finished in Marine Gray Ripple Enamel.

No.	H.	W.	D.	Dir. Cost
3990.....	8" x 8"	8"	8"	\$4.44
3991.....	8" x 10"	8"	8"	4.87
3992.....	8" x 14"	8"	8"	6.38
3993.....	12" x 18"	12"	12"	8.57



## CHASSIS FOR ICA CABINETS

No.	Size	For Cabinet Number	Dir. Cost
4024.....	7" x 7" x 2"	3990	\$ .76
4004.....	7" x 9" x 2"	3991	.90
4007.....	7" x 13" x 2"	3992	1.06
4033.....	10" x 17" x 3"	3993	1.45

## ICA DE LUXE SLOPING CHASSIS AMPLIFIER UNITS



Chassis are sloped and are equipped with beautiful chrome trimmed handles. Slope provides ample space for mounting instruments.

The top covers have beautiful Chrome Plated "Air-Gate" Ventilators with striped chrome trim. Supplied with ventilating louvres on sides and back. Have raised rectangular screen opening on the tops, embellished with chrome moulding. Marine Gray Ripple finish. Chassis Ht. 3 1/2"; Slope 4°.

No.	Over-all Size	Chassis Bottom	Dealer Cost	Bottom Plate No.	Dealer Cost
3962.....	7" x 17" x 9 1/2"	10" x 17"	\$6.85	1681	\$7.76
3963.....	10" x 14" x 9 1/2"	13" x 14"	7.26	1683	.82
3964.....	10" x 17" x 9 1/2"	13" x 17"	7.50	1685	.96

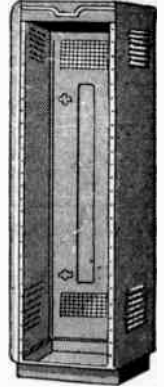
## ENCLOSED RELAY RACKS

A beautifully streamlined designed rack for transmitters and public address systems. Front vertical; corners rounded. Rack is fabricated of 1/16" cold rolled steel; panel mounting angles of 1/8" steel. Universally drilled for either Amateur or Western Electric type panels. Panels fit into recess so edges are not exposed. Screen ventilators on rear door and louvres on sides afford proper ventilation. Rear door hung on sturdy hinges and equipped with two flush snap catches. Shipped "KNOCKED DOWN" with all necessary hardware. Finished in Marine gray ripple finish. Black Ripple furnished only if specified.

No. 3870 Dealer Cost \$31.35	{	Overall Size ...42"x22"x16 1/2"
		Panel Space .....36 3/4"x19"
		Interior Width .....17 5/8"
		Interior Depth .....15 1/4"
Shipping Weight 97 Lbs.		

No. 3871 Dealer Cost \$45.00	{	Overall Size 66 1/2"x22"x16 1/2"
		Panel Space .....61 1/4"x19"
		Interior Width .....17 5/8"
		Interior Depth .....15 1/4"
Shipping Weight 145 Lbs.		

No. 3872 Dealer Cost \$55.00	{	Overall Size 82 1/4"x22"x16 1/2"
		Panel Space .....77"x19"
		Interior Width .....17 5/8"
		Interior Depth .....15 1/4"
Shipping Weight 172 Lbs.		



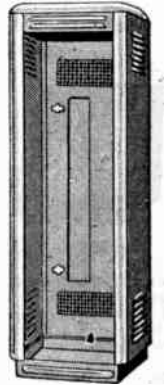
## ICA DE LUXE TRANSMITTER RACKS

New modern design, streamlined transmitter and public address racks. Removable vertical corner mouldings are rounded and completely cover panel edges and mounting screws. Chrome trim. Rack is made of 1/16" cold rolled steel. Panel mounting angles drilled for either Amateur or Western Electric type panels. Screen ventilators on rear door and louvres afford ample ventilation. Easily assembled. Supplied in Marine gray ripple finish. Black ripple finish furnished only on specification.

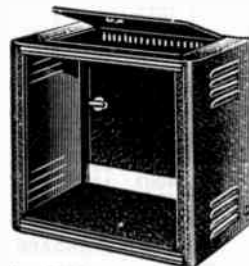
No. 3865 Dealer Cost \$40.75	{	Overall Size ...43 1/4"x22"x18"
		Panel Space .....36 3/4"x19"
		Interior Width .....17 5/8"
		Interior Depth .....16 3/4"
Shipping Weight 110 Lbs.		

No. 3866 Dealer Cost \$52.07	{	Overall Size ...67 3/4"x22"x18"
		Panel Space .....61 1/4"x19"
		Interior Width .....17 5/8"
		Interior Depth .....16 3/4"
Shipping Weight 162 Lbs.		

No. 3867 Dealer Cost \$62.37	{	Overall Size ...83 1/4"x22"x18"
		Panel Space .....77"x19"
		Interior Width .....17 5/8"
		Interior Depth .....16 3/4"
Shipping Weight 190 Lbs.		



## ICA MULTI-USE METAL CABINETS



An ideal unit for public address systems, transmitters, receivers, test equipment, etc. Has rounded corners on front of Cabinet. Trimmed with handsome chrome trim moulding. Equipped with hinge doors, and nickel-plated snap locks. Completely assembled, ready for use. Finished in Black or Marine Gray Ripple Enamel. Black will be supplied unless Gray is specified.

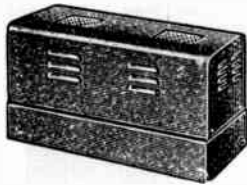
	SINGLE UNITS	Dir. Cost
No. 3880.....	Size 10 1/2" x 21" x 15" Deep. Door on top only. Panel space 8 3/4" x 19"	\$11.10
No. 3881.....	Size 14" x 21" x 15" Deep. Door on top only. Panel space 12 1/4" x 19". DOUBLE UNIT	13.50
No. 3882.....	Size 19 1/4" x 21" x 15" Deep. Doors on top and rear. Panel space 17 1/2" x 19". TRIPLE UNIT	18.45
No. 3883.....	Size 28" x 21" x 15" Deep. Door on rear panel only. Panel space 26 1/4" x 19". QUADRUPLE UNIT	21.12
No. 3884.....	Size 36 3/4" x 21" x 15" Deep. Door on rear panel only. Panel space 35" x 19".	23.62



# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA STANDARD AMPLIFIER FOUNDATION UNITS



Top covers have rounded corners. The front, sides and back are equipped with louvre ventilators. The tops have raised screen openings for additional ventilation.

Finished in beautiful Marine Gray Ripple Enamel. Height of Chassis 3".

No.	Over-all Size	Dealer Cost	Bottom Plate No.	Dealer Cost
3980.....	5 1/2" x 10" x 9"	\$2.52	1677.....	\$4.49
3981.....	8" x 12" x 9"	3.70	1679.....	.76
3982.....	7" x 17" x 9"	3.86	1681.....	.76
3983.....	10" x 14" x 9"	4.20	1683.....	.82
3984.....	10" x 17" x 9"	4.37	1685.....	.96

### ICA DE LUXE AMPLIFIER FOUNDATION CHASSIS

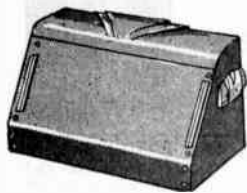


Top covers have rounded corners and fronts are embellished with the newly created Chrome plated "Air-Gate" Ventilators. Additional ventilation is obtained through the raised screen openings on the top as well as louvres on both sides and back.

Have beautiful Chrome mouldings and Chrome handles. Finished in Marine Gray Ripple Enamel. Height of Chassis 3".

No.	Over-all Size	Dealer Cost	Bottom Plate No.	Dealer Cost
3971.....	5 1/2" x 10" x 9"	\$3.55	1677.....	\$4.49
3972.....	8" x 12" x 9"	4.60	1679.....	.76
3973.....	7" x 17" x 9"	5.00	1681.....	.76
3974.....	10" x 14" x 9"	5.40	1683.....	.82
3975.....	10" x 17" x 9"	5.75	1685.....	.96

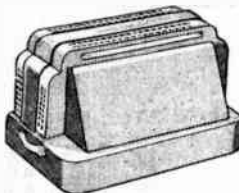
### FUTURA STREAMLINED SLOPING PANEL CABINETS



Can be used as instrument cases in studios, laboratories, etc. Raised "Futura" design — streamlined corners. Ventilator openings for cable connectors. Removable front panel. Finished in Marine Gray Ripple enamel with chrome moulding.

No.	H.	W.	D.	Dir. Cost
3840.....	8"	8"	6"	\$5.38
3841.....	8"	10"	8"	6.05
3842.....	8"	14"	8"	7.39
3843.....	8"	18"	8"	9.07
3844.....	12"	18"	12"	10.08

### "SUPER" STREAMLINED SLOPING-FRONT AMPLIFIER CHASSIS



New, modern design amplifier chassis. Front panel sloped with streamlined top cover. Removable front panel Marine Gray Ripple finish with Chrome trim. Bottom plates supplied. Top cover 6 1/2" high.

No.	Chassis Size	Dir. Cost
3930.....	10" x 12" x 3"	\$6.72
3931.....	10" x 17" x 3"	7.73
3932.....	13" x 17" x 3"	8.74

### ICA SLOPING PANEL CABINETS

Small—Compact



3905



3906

New streamlined cabinets, rugged, small and compact, have various uses such as speaker cabinets, oscillator cases, input stages, small receivers, tele-talk systems, monitors, etc.

No.	W.	H.	D.	Dir. Cost
3905.....	4 1/2"	4 1/2"	4 1/4"	\$1.00
3906.....	7 1/2"	4 1/2"	4 1/4"	1.59

### ICA PORTABLE STEEL CABINETS



Ideal for housing oscillators, transceivers, test equipment, etc. Both front and back panels are removable and are held with self-tapping screws which are supplied. Equipped with leather handle. Finished in black ripple.

No.	Size	Dir. Cost
3850.....	Size 12" x 7 3/4" x 7"	\$2.75
3851.....	Size 15" x 7 3/4" x 7"	3.30

### STREAMLINED METER CASES



Modern streamlined cases, with raised "futura" design on top of cabinet. Finished in Marine Gray Ripple Enamel and trimmed with chrome band.

No.	D.	W.	H.	Meter Hole	Dealer Cost
3997.....	4 1/4"	4 1/8"	4 1/2"	2 1/8"	\$1.80
3998.....	4 1/4"	4 1/8"	4 1/2"	2 1/8"	1.80

### ICA DE LUXE METER CASES

Finished in Marine Gray Ripple Enamel with rounded tops and trimmed with beautiful Chrome band. Available for 2" or 3" meters.



No.	D.	W.	H.	Meter Hole	Dealer Cost
3995.....	4 1/4"	4 1/8"	4 1/2"	2 1/8"	\$ .95
3996.....	4 1/4"	4 1/8"	4 1/2"	2 1/8"	.95

### ICA HINGED COVER CABINETS



Supplied in knocked-down form for easy handling. Easily assembled.

Finished in Black Ripple Enamel.

No.	W.	D.	H.	Dir. Cost
3825.....	9"	5"	6"	\$2.69
3826.....	10"	8"	7"	3.36
3828.....	12"	8"	8"	3.86
3829.....	12"	11"	8"	4.60
3830.....	14"	8"	7"	4.60
3831.....	18"	12"	9"	5.78

### CHASSIS FOR ICA CABINETS

For Cabinet

No.	W.	D.	H.	No.	Dir. Cost
4000.....	8 1/2"	4 3/4"	1 1/2"	3825.....	\$ .68
4004.....	9"	7"	2"	3826.....	.90
4005.....	11"	7"	2"	3828.....	1.00
4007.....	13"	7"	2"	3830.....	1.06
4023.....	17"	11"	3"	3831.....	2.04

### ICA STANDARD SPEAKER CABINETS

Finished in Black Ripple Enamel with plain black steel handles to match.



No.	Size	Hole Size	Speaker Size	Dir. Cost
3942.....	10" x 10" x 6"	4 3/4"	6"	\$3.15
3943.....	12" x 12" x 7"	6 1/2"	8"	3.96
3944.....	14" x 14" x 8"	8"	10"	5.00
3945.....	16" x 16" x 8"	11"	12"	6.75

### ICA DE LUXE SPEAKER CABINETS



Features rounded corners; neatly chrome trimmed front; equipped with chrome handle. Steel grille. Marine Gray Ripple finish.

No.	Size	Hole Size	Speaker Size	Dir. Cost
3935.....	10" x 10" x 6"	4 3/4"	6"	\$3.50
3936.....	12" x 12" x 7"	6 1/2"	8"	4.50
3937.....	14" x 14" x 8"	8"	10"	5.70
3938.....	16" x 16" x 8"	11"	12"	7.00

### MIDGET SPEAKER CASES

Especially designed for the smaller type speakers. Beautifully finished in gray ripple with attractively embossed grille. Speaker mounts on special removable internal chassis, punched for proper speaker opening. This unit fastens to side of cabinet with no visible screws to mar cabinet front. Facilitates ease of assembly. Measures 4 1/4" d. x 4 1/8" w. x 4 1/2" h.



No.	Description	Hole Dia.	Dir. Cost
3986.....	For 2" speakers.....	2 1/8"	\$1.35
3987.....	For 3" speakers.....	2 1/8"	1.35

### COMPOSITE SPEAKER CABINET



A neatly designed composite unit to house either a 4" or 5" speaker. Measures 7" w. x 4" d. x 7" h. Gray ripple finished steel with embossed grille. Removable back plate has key ways for easy hanging.

No.	3988.....	Dealer Cost
		\$3.02

### ICA SLOPING FRONT CHASSIS

Has a sloping front for mounting instruments. Has the effect of a beautiful open cabinet receiver, or amplifier unit, when used without top covers. Heavy Duty Steel, finished in Black Ripple Enamel.



No.	Base	Bottom of Top of	Base	Hgt.	Slope	Dir. Cost
3320	7x17"	10x17"	3 1/2"	4"		\$2.28
3321	10x14"	13x14"	3 1/2"	4"		2.52
3322	10x17"	13x17"	3 1/2"	4"		2.86

# ICA INSULINE ICA

## RADIO PRODUCTS



### STEEL OR ALUMINUM CHASSIS BASES

For receivers, transmitters, etc. Bases are folded over on bottom for additional strength and drilled to permit attaching of bottom plates. Solidly constructed. STEEL BASES—one piece; heavy duty; zinc plated or black ripple finish. ALUMINUM BASES—First grade aluminum, electronically welded. Thickness: .055— $\frac{1}{4}$  Hard.

Steel—Zinc Plated Finish		Steel—Black Ripple Finish		Aluminum		Dealer Cost	
No.	Dir. Cost	No.	Dir. Cost	Gauge	Size	No.	Dealer Cost
1560	.68	4000	.68	20	4 x 6 x 2	29043	.93
1530	.69	4001	.69	20	4 x 6 x 3	29044	.93
1586	.80	4037	.80	20	4 x 17 x 3	29027	1.68
1587	.84	4038	.84	20	4 1/2 x 8 x 1 1/2	29030	.78
1565	.97	4002	.97	20	5 x 9 1/2 x 2	29033	.90
1582	1.04	4032	1.04	20	5 x 9 1/2 x 3	29002	1.05
1566	1.18	4003	1.18	20	5 1/2 x 10 x 3	29004	1.32
1526	.76	4024	.76	20	5 1/2 x 18 x 3	29003	1.14
1569	.90	4004	.90	20	7 x 7 x 2	29005	.90
1570	1.00	4005	1.00	20	7 x 9 x 2	29006	.99
1527	1.15	4006	1.15	20	7 x 11 x 2	29007	1.08
1571	1.06	4007	1.06	20	7 x 12 x 3	29008	1.29
1572	1.36	4008	1.36	20	7 x 13 x 2	29009	1.14
1528	1.42	4009	1.42	20	7 x 15 x 3	29010	1.86
1567	1.44	4013	1.44	20	7 x 17 x 3	29011	1.65
1573	1.45	4014	1.45	20	8 x 12 x 3	29012	1.56
1575	1.52	4035	1.52	20	8 x 17 x 2	29013	1.71
1588	1.55	4039	1.55	20	8 x 17 x 3	29014	2.01
1520	1.45	4016	1.45	20	8 1/2 x 15 x 3	29037	1.73
1568	1.52	4017	1.52	20	10 x 12 x 3	29015	1.59
1589	1.52	4040	1.52	20	10 x 14 x 3	29016	2.19
1583	1.45	4033	1.45	20	10 x 17 x 2	29039	2.07
1521	1.70	4018	1.70	18	10 x 17 x 3	29017	2.34
1522	2.10	4019	2.10	18	10 x 17 x 3	29018	2.79
1577	1.82	4027	1.82	18	10 x 28 x 3	29019	2.16
1519	2.04	4023	2.04	18	11 x 17 x 2	29020	2.73
1574	1.65	4020	1.65	18	11 x 17 x 3	29021	2.48
1578	1.79	4028	1.79	18	12 x 17 x 2	29022	2.85
1579	2.25	4029	2.25	18	12 x 17 x 3	29023	2.55
1524	2.44	4021	2.44	18	13 x 17 x 2	29024	3.06
1580	1.92	4030	1.92	18	13 x 17 x 3	29025	2.70
1581	2.92	4031	2.92	18	10 x 17 x 4	29026	3.48
				18	13 x 17 x 4		

### ICA CHASSIS BOTTOM PLATES



Designed to fit all ICA Chassis Bases and amplifier units listed to the left. Four raised bosses prevent marring or scratching. Supplied in steel or aluminum.

Steel		Aluminum	
Zinc Plated	Black Ripple	Dealer Cost	Dealer Cost
1601	4051	\$ .39	5 x 9 1/2
1625	4075	.45	5 1/2 x 10
1602	4052	.48	5 x 18
1623	4073	.54	7 x 7
1603	4053	.56	7 x 9
1604	4054	.64	7 x 11
1605	4055	.68	7 x 12
1606	4056	.68	7 x 18
1607	4057	.75	7 x 15
1608	4058	.78	7 x 17
1612	4062	.78	8 x 12
1613	4063	.82	8 x 17
1615	4065	.82	10 x 12
1616	4066	.85	10 x 14
1617	4067	1.00	10 x 17
1618	4068	1.40	10 x 28
1622	4072	1.00	11 x 17
1619	4069	1.08	12 x 17
1620	4070	1.28	13 x 17
1624	4074	1.04	13 x 14
8725		.62	5 1/2 x 10
8702		.66	5 x 18
8723		.62	7 x 7
8703		.66	7 x 9
8704		.72	7 x 11
8705		.76	7 x 12
8706		.83	7 x 18
8707		.86	7 x 15
8708		.93	7 x 17
8712		.90	8 x 12
8713		1.04	8 x 17
8715		1.00	10 x 12
8716		1.07	10 x 14
8717		1.21	10 x 17
8718		1.45	10 x 28
8727		1.38	11 x 17
8719		1.55	12 x 17
8720		1.62	13 x 17

### MINIATURE OPEN END ALUMINUM CHASSIS

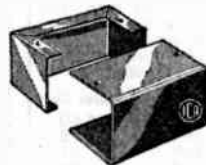


Of first grade aluminum for less weight but long service. Base flange permits attaching of bottom plate or fastening down of chassis. Ideal where limited space is factor. Suitable for all small unit assemblies.

No.	Size	Dealer Cost	No.	Size	Dealer Cost
29075	2 1/2 x 2 1/2 x 1 1/4	\$.30	29082	4 x 3 1/2 x 1	\$.36
29076	1 1/2 x 3 1/2 x 1	.33	29083	4 x 4 1/2 x 1	.39
29077	3 1/2 x 4 1/2 x 2	.36	29084	4 x 5 1/2 x 1	.42
29078	2 1/2 x 4 1/2 x 1 1/4	.36	29085	4 x 6 1/2 x 1	.45
29079	3 1/2 x 4 1/2 x 1 1/2	.36	29000	4 1/2 x 8 x 1 1/2	.85
29080	3 x 6 1/2 x 1 1/4	.42	29001	5 x 9 1/2 x 1 1/2	.90
29081	5 1/2 x 4 1/2 x 1 1/2	.45			

### "FLEXI-MOUNT" ALUMINUM CASES

A two-piece case designed for maximum accessibility. Solves many problems demanding installation of numerous elements in limited space while assuring necessary shielding. Has wide application. Made of heavy aluminum—finished in gray hammertone or natural aluminum.



Cat. No. Gray H.	Dealer Cost	Cat. No. Natural	Dealer Cost	Dimensions, Inches L. W. H.
29435	\$.57	29335	\$.51	2 3/4 x 2 1/2 x 1 1/2
29436	.57	29336	.51	3 1/4 x 2 1/2 x 1 1/2
29437	.60	29337	.54	4 x 2 1/2 x 1 1/2
29438	.78	29338	.72	4 x 2 1/2 x 2 1/2
29439	.81	29339	.75	5 x 2 1/2 x 2 1/2
29440	.90	29340	.84	5 x 4 x 2
29441	.87	29341	.81	5 1/2 x 8 x 2 1/2
29442	1.11	29342	1.02	6 x 5 x 4
29443	1.26	29343	1.14	7 x 5 x 3
29444	1.83	29344	1.71	8 x 6 x 3 1/2
29445	2.25	29345	1.89	10 x 6 x 3 1/2
29446	2.67	29346	2.40	12 x 7 x 4
29447	3.15	29347	2.79	17 x 5 x 4

### OPEN END STEEL CHASSIS



Permits easier wiring of the smaller assemblies. Has wide variety of applications. Made of sturdy steel with zinc plated finish.

No.	Size	Dealer Cost	No.	Size	Dealer Cost
1546	7 x 6 x 2	\$.66	1595	7 1/2 x 9 x 1 1/2	\$.90
1547	5 x 7 x 1 1/2	.60	1596	7 x 10 x 2	.90
1548	7 x 7 x 1 1/2	.68	1597	7 x 11 x 1 1/2	.95
1556	7 x 8 x 2	.84	1598	10 1/2 x 14 x 2	1.44
1559	5 1/2 x 9 x 1 1/2	.66	1599	7 1/2 x 15 x 2	1.38

### WEBSTER RECORD CHANGER BASES



Sturdy steel base in beautiful brown hammertone finish with protective, non-marring cork rubber cushion. Especially designed for the better known record changers. Grommeted holes provided for AC lead on rear apron; also punched for easy addition of Insuline No. 2385 phono plug-socket.

No.	Description	Dealer Cost
3308	—For WEBSTER changer models Nos. 346, 246, 146 and similar sizes	\$3.30
3308-BP	—Steel bottom plate in matching finish; rubber bumpers and mounting screws complete, for above base	.99
3309	—For WEBSTER changer models Nos. 356, 256, 156 and similar sizes	3.30
3309-BP	—Steel Bottom Plate in matching finish; rubber bumpers and mounting screws complete, for above base	.99

### VM RECORD CHANGER BASE

3312	—BASE FOR VM TRI-O-MATIC CHANGER	3.30
3312-BP	—Steel bottom plate in matching finish; rubber bumpers and mounting screws complete, for above base	.99

### GARRARD CHANGER BASE

Made for the new Garrard Model RC-80 8-way record changer. This steel base is finished in brown hammertone with protective cushions. Includes grommeted holes for AC lead. Complete with bottom plate.

No. 3315	Dealer Cost \$4.95
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# ICA INSULINE RADIO PRODUCTS ICA

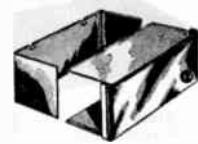
## ALUMINUM . . . STEEL CABINETS



Popular utility cabinets now available in aluminum in gray hammerstone and natural finish. Excellent for amplifiers, monitors, input stages, meters, transceivers, etc. Removable front and back covers may be fastened to cabinet with self-tapping screws provided. Also supplied in steel with black ripple finish.

Aluminum		Aluminum		STEEL		
Natural	Dealer Cost	Gray	Dealer Cost	Black	Ripple	Dealer Cost
29840	\$.83	29810	\$.94	4" x 2" x 4"	3810	\$.73
29841	.95	29811	1.09	4" x 3" x 5"	3811	.83
29842	1.22	29812	1.37	4" x 5" x 0"	3812	1.05
29843	1.27	29800	1.44	6" x 0" x 6"	3800	1.10
29844	1.84	29801	2.08	9" x 5" x 6"	3801	1.59
				10" x 8" x 7"	3802	2.10
				10" x 8" x 10"	3803	2.64
				12" x 11" x 8"	3804	3.30

## CHANNEL-LOCK ALUMINUM BOXES



Latest two-piece box with special "channel-lock" feature for snug and firm fit. Makes all mounting space easily accessible. Ideal for oscillators, amplifiers, etc. Easily assembled: merely tighten the two set screws provided. These sturdy boxes made of heavy aluminum in black wrinkle, gray hammerstone and natural aluminum finish.

Natural Aluminum		Black Wrinkle		Gray Hammerstone		Size		Dealer Cost
No.		No.		No.				
29200	29300	29400	4" x 2 1/2" x 1 1/2"	\$.63				
29205	29305	29405	5" x 2 1/2" x 2 1/4"	.83				
29210	29310	29410	5 1/4" x 8" x 2 1/8"	.96				
29215	29315	29415	8" x 4" x 5"	.80				
29220	29320	29420	6" x 4" x 5"	.90				
29225	29325	29425	10" x 4" x 2 1/2"	1.72				

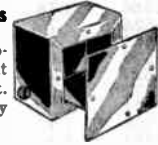
## SLIP COVER ALUMINUM BOXES



Suitable for a variety of electronic device housing needs. Slide cover permits easy accessibility to mounted parts; offers shielding and dust-proof protection. May be used for television strips; terminal barriers, special equipment, amplifier units, etc. Heavy aluminum in natural finish or gray hammerstone.

Gray Hammerstone No.	Natural Finish No.	Size	Dealer Cost
29130	29100	8 1/4" x 13" x 2 1/2"	\$3.14
29135	29105	5 1/8" x 13" x 2 1/2"	3.41
29140	29110	8" x 17" x 2 1/2"	3.26

## UTILITY CABINETS with built-in chassis



A multi-use small cabinet. Ideal for minor radio-television assemblies. The chassis is welded to front panel, making it a time-saving, convenient unit. Front and rear panels easily removable. Of sturdy steel in black ripple finish.

No.	Cabinet Size			Chassis Size			Dealer Cost
	W.	D.	H.	W.	D.	H.	
3816	4"	2"	4 1/2"	2 1/2"	1 1/4"	1"	\$1.05
3817	4"	3"	5"	2 1/2"	2 1/8"	1"	1.15
3818	5"	3"	4"	3 1/2"	2 1/8"	1 1/4"	1.15
3819	4"	5"	6"	2 1/2"	4 1/4"	1 1/4"	1.30
3821	6"	5"	4"	4 1/2"	4 1/4"	1 1/4"	1.30
3823	6"	6"	6"	4 1/2"	5 1/8"	1 1/2"	1.35



## TABLE MOUNT RELAY RACKS

Sturdily constructed heavy duty table rack with one piece base. Accurately drilled mounting holes. Finished in black ripple. Supplied "KNOCKED DOWN" with all necessary hardware.

No.	W.	H.	D.	Panel Space	Dlr. Cost
3910	21"	25"	12"	21" x 19"	\$6.10
3911	21"	32"	12"	28" x 19"	7.62

## CHASSIS MOUNTING BRACKETS

Designed for rack panels and chassis where additional strength is required for heavier units such as power supplies, etc. Heavy gauge steel, black ripple finish.



No.	Front	Back	Dealer Cost
4077	6 1/4" Ht. x 10" D. x 3" Ht.		\$1.02
4079	8 1/4" Ht. x 10" D. x 4" Ht.		1.60
4081	6 1/4" Ht. x 12" D. x 3" Ht.		1.32
4083	8 1/2" Ht. x 13" D. x 4" Ht.		1.70

## ICA CHASSIS MOUNTING BRACKETS

Made to fit on 17" relay rack chassis. Panels must be at least 7" high. Black ripple finish.



No.	For	base	Per Pair	Dlr. Cost
3955	For 8"			\$.76
3958	For 10"			1.02
3956	For 11"			1.12
3957	For 13"			1.70

## ICA RELAY RACK BRACKETS



Black Ripple Finish. Used to reinforce racks and for mounting of panels, shelves, chassis, etc.

No.	For	base	Per Pair	Dlr. Cost
3950	5"			\$.80
3951	8"			.91
3952	11"			1.10

## STANDARD RELAY RACK PANELS

Supplied in Amateur Rack notching, first notch 7/8" from edge of panel and 1 1/4" between centers.\* 19" long. Completely slotted, 1/8" thick. Made of steel (in black ripple or gray finish) or aluminum.



Steel			Aluminum		
No.	Gray	Dealer Cost	Size	No.	Dealer Cost
3600	3612	\$.66	1 1/2"	8600	\$.72
3601	3613	.75	3 1/2"	8601	.96
3602	3614	.93	5 1/2"	8602	1.14
3603	3615	1.02	7"	8603	1.50
3604	3616	1.20	8 1/2"	8604	1.74
3605	3617	1.44	10 1/2"	8605	2.04
3606	3618	1.74	12 1/2"	8606	2.34
3607	3619	2.04	14"	8607	2.64
3608	3620	2.34	15 3/4"	8608	2.97
3609	3621	2.55	17 1/2"	8609	3.30
3610	3622	2.76	19 1/4"	8610	3.63
3611	3623	3.06	21"	8611	3.96

## ICA MASONITE RELAY RACK PANELS

Made of Tempered Masonite—a non-magnetic material, sturdy and tough yet easily drilled and worked with ordinary wood-working tools and punches. Finished in Black or Gray. Supplied in Black Ripple finish unless Gray is specified.\*

No.	Size	Dealer Cost
3662	1 1/2" x 19"	\$.60
3663	3 1/2" x 19"	.75
3664	5 1/2" x 19"	.87
3665	7" x 19"	.99
3666	8 3/4" x 19"	1.20
3667	10 1/4" x 19"	1.35
3668	12 1/4" x 19"	1.50
3669	14" x 19"	1.65
3670	15 3/4" x 19"	1.83
3671	17 1/2" x 19"	2.13
3672	19 1/4" x 19"	2.31
3673	21" x 19"	2.58

## SPECIAL SIZES RACK PANELS TO ORDER

We can supply Rack Panels in any thickness from 1/8" to 1/4" in Steel, Aluminum or Masonite; in any finish to specifications.

\* NOTE: If Western Electric notching desired, add "WE" to Catalog Number.

## ICA METER PANELS

Slotted to fit all standard racks.\* Finished in Baked Black or Gray Ripple. Size 5 1/4" x 19". Black will be shipped unless Gray is specified.



STEEL PANELS				
No.	Holes	Meter Size	Hole	Dealer Cost
3651	5	2"	2 1/4"	\$1.85
3652	8	2"	2 1/4"	1.30
3653	5	3"	2 1/4"	1.85
3654	3	3"	2 1/4"	1.30
MASONITE PANELS				
No.	Holes	Meter Size	Hole	Dealer Cost
3641	3	2 1/4"	2 1/4"	\$1.32
3642	4	2 1/4"	2 1/4"	1.45
3643	3	2 3/8"	2 1/8"	1.32
3644	4	2 3/8"	2 1/8"	1.45

## ICA STEEL PANELS

Thickness of Panels 1/8" Black Ripple Finish



No.	Size	Dlr. Cost
3175	7" x 10"	\$.60
3176	7" x 12"	.66
3177	7" x 14"	.77
3178	7" x 18"	.99
3183	8" x 12"	.88
3184	8" x 14"	.88
3186	8" x 18"	1.02
3191	10" x 14"	1.32
3192	10" x 18"	1.55
3194	10" x 24"	1.81

## ICA MASONITE PANELS

Black Ripple Finish Thickness of panel 1/8"



No.	Size	Dlr. Cost
810	7" x 10"	\$.66
811	7" x 12"	.73
812	7" x 14"	.83
813	7" x 18"	.99
814	8" x 12"	1.08
815	8" x 14"	.86
816	8" x 18"	1.10
817	8" x 16"	1.10
818	8" x 18"	1.19

# ICA INSULINE RADIO PRODUCTS ICA

## ICA BAKELITE RADIO PANELS

Black, Polished Mirror Finish



Black, Mirror Finish. Laminated Indestructible Material. For Panels and general use where low moisture absorption, good electrical properties and fine surface finish are required. Tensile strength 8,000 lbs. per square inch.

1/8" Thickness			3/8" Thickness		
No.	Size	Dealer Cost	No.	Size	Dealer Cost
832	7" x 10"	\$1.02	842	7" x 10"	\$1.49
833	7" x 12"	1.22	843	7" x 12"	1.82
834	7" x 14"	1.32	844	7" x 14"	2.15
835	7" x 18"	1.98	845	7" x 18"	2.71
836	7" x 21"	2.05	846	7" x 21"	3.07
837	7" x 24"	2.31	847	7" x 24"	3.63
840	7" x 30"	2.97	850	7" x 30"	4.46
860	10" x 12"	1.82	863	10" x 12"	2.74
861	10" x 18"	2.41	864	10" x 18"	3.73

## ICA ALUMINUM PANELS



ICA Aluminum panels and sheets have a bright silver finish and are supplied in the following sizes:

No.	Size	Dealer Cost	No.	Size	Dealer Cost
1194	7" x 10"	\$.81	1200	7" x 24"	\$2.10
1195	7" x 12"	.96	3157	10" x 12"	1.65
1196	7" x 14"	1.05	3158	10" x 18"	1.89
1198	7" x 18"	1.41	3159	10" x 24"	3.30
1199	7" x 21"	1.71			

## ICA FULL SIZE BAKELITE SHEETS

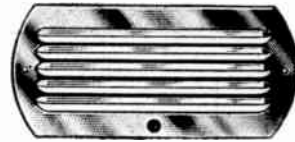
Black Glossy Finish



No.	Size	Thickness	Apprx. Wt.	Dealer Cost
852	38" x 49"	1/8"	6 lbs.	\$14.19
853	38" x 49"	3/8"	8 lbs.	17.82
854	38" x 49"	1/2"	12 lbs.	29.04
857	38" x 49"	7/8"	16 lbs.	36.30
858	38" x 49"	1"	20 lbs.	43.56

Prices on other sizes or thicknesses quoted on request.

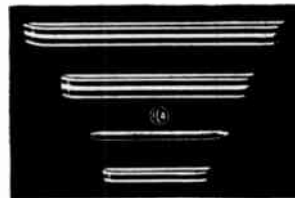
## CHROME VENTILATING LOUVRES



Add the attractive touch to any receiver, amplifier, transmitter, etc. A polished chrome finished steel "Air-Gate," consisting of 5 ventilating louvres. Over-all size: 5 7/8" long—3" wide. Distance between mounting hole centers: 4 1/2". Diameter of holes: 5/16". Length of louvres: 4 1/4". Air space between louvre plates: 3/16".

No. 3525..... Dealer Cost \$5.54

## ICA CHROME TRIM MOULDING



Beautiful chrome trim mouldings to dress up any cabinet, chassis, receiver, speaker cabinet, transmitter, etc. All moulding furnished with mounting tracks or clips.

No.	Dealer Cost
3510—Chrome Moulding, with single Stripe. Size: 1/8" wide by 4" long.....	\$ .53
3513—Chrome Moulding, with double Stripe. Size: 3/8" wide by 8" long.....	.86
3514—Chrome Moulding, with double Stripe. Size: 3/8" wide by 12" long.....	.99
3515—Chrome Moulding, with double Stripe. Size: 3/8" wide by 18 3/4" long.....	1.23
3505—Bullet Shape all Chrome Moulding. Size 1/8" wide by 6" long.....	.53

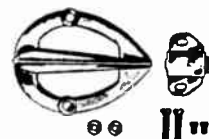
## CHROME HANDLES . . . PLASTIC HANDLES



A neatly styled adornment for any cabinet, amplifier chassis transmitter, etc. Furnished with mounting screws. Supplied in gleaming chrome or attractive plastic.

No.	Dealer Cost
3500—Chrome. 4" l.; 1 1/8" w. Mounting centers: 2 3/4" apart....	\$ .50
3502—Plastic. Dimensions as above.....	.40
3501—Chrome. 6 3/4" l.; 5/8" w. Mounting centers: 4 1/8".....	.66

## HANDLE . . . LOCK SET



A complete, attractive handle and lock set that will dress up a variety of cabinets. Streamlined handle of zinc with nickel-plated finish; spring snap lock of durable steel for long service. Includes screws and nuts.

No. 3532..... Dealer Cost \$5.50

*Thank You!*

When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

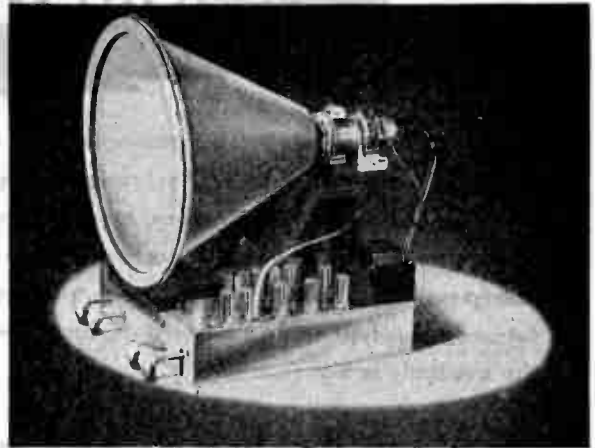
**RADIO'S MASTER**

• Engineered for the custom builder . . . the music lover . . . the architect . . . fringe areas. Professional installations simplified by **Craftsmen** chassis units providing for every detail of installation. All units finished in polished chromium for long-lasting durability.

## LARGE SCREEN TELEVISION

Matching the high-fidelity audio of this television chassis is the outstanding picture obtainable on either a 16- or 19-inch picture tube. Automatic phase control of both vertical and horizontal synchronization guarantees perfect interlacing of lines to give complete and detailed pictures. Keyed AGC eliminates all picture flutter. Extended range for fringe areas is possible with the new built-in booster switch. Will accommodate UHF channels. Low-impedance audio output—matching any amplifier—preserves hi-fidelity of separate FM sound system. Special erase circuit permanently removes vertical retrace lines. All secondary controls accessible from front panel. Will accommodate UHF channels.

**RC100A Chassis, List \$294.00**  
**16-in. Tube Mtg. Kit . 14.00**  
**19-in. Tube Mtg. Kit . 22.00**



## RC100A SPECIFICATIONS

**Panel Controls:** Off-on-sound volume, contrast, fine-tuning and video boost, 12-channel selector.  
**Sensitivity:** Video (channel 6) —25 microvolts or less for 1 volt at detector. Noise figure —12 db.  
**Audio:** —15 microvolts or less for 30 db. quieting.  
**Power Consumption:** 105-125 volts, 60 cps., 175 watts.  
**Tubes:** 25 plus 4 rectifiers.  
**Net Weight:** 40 lbs (less picture tube).  
**Chassis Dimensions:** 16" x 17" x 10" high.



## RC10 SPECIFICATIONS

**Tube Complement:** 11 tubes plus rectifier—6AB4 FM RF preamp., 6CB6 RF amp., 12AT7 mixer, 12AT7 osc. and AFC., (2) 6CB6 IF amp., (2) 9001 limiters, 6AL5 FM det., 6AV6 AM det. and phono pre-amp., 12AU7 audio amp., 6X5GT rectifier.

**Controls:** Bass, off-on-volume, FM-AM-PH-TV selector, tuning, treble.

**Output:** Capability up to 3 volts at less than 1% distortion. For use with either high or low gain amplifiers with input impedance of 25,000 ohms or higher.

**Power Consumption:** 105-125 volts, 60 cps., 50 watts.

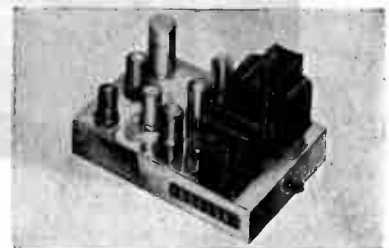
**Shipping Weight:** 16 lbs.

**Dimensions:** 13½" x 9½" x 7" high.

## FM-AM TUNER

Extremely versatile for individualized installations especially those including TV. Built-in pre-amplifier can be switched for use with G-E, Pickering, or crystal phono cartridges. Furnished with low-noise AM low-impedance loop and built-in FM antenna. Outstanding audio fidelity provided by wide-band IF channels followed by cascaded double limiter and Foster-Seeley discriminator. Continuously variable base and treble controls, providing either boost or cut, are easily adjusted for flat response of 20 to 20,000 cycles. FM and AM sensitivity are both below 5 microvolts. Low-noise performance provided by separate FM and AM triode converters and grounded-grid triode FM pre-amplifier. 10 kc. filter on AM provides 25 db. rejection of inter-station whistles. Fly-wheel tuning enables a quick and accurate station selection. Obsoleting the tuning eye, **Craftsmen** Automatic Frequency Control simplifies FM tuning and eliminates entirely the annoyance of station drift.

**RC10, List \$199.00**



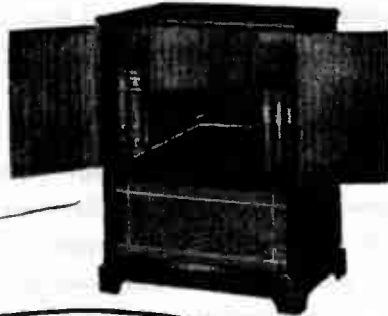
## HI-FI AMPLIFIER

10 watts of undistorted output obtainable at 4, 6, 8, 15, or 500-ohm impedance taps. Over-all gain of 70 db., including inverse feedback, over frequency range of 20-20,000 cycles. Four tubes plus rectifier.

**RC2, List \$65.00**

# Jackson COMBINATION CABINETS

Here are two Jackson combination cabinets—one a radio-phonograph combination, the other, radio-Phonograph-Television. Designed by John Bergen, America's foremost furniture stylist, the basic models are of gleaming hand-rubbed mahogany veneer. These cabinets will accommodate most new type standard record changers. They are also available in Blonde.



## MODEL JC 15

### DIMENSIONS

Overall: 28 1/4" W; 16 1/2" D; 36" H  
 Radio compartment: 15 1/2" W; 14" D; 8 1/2" H  
 Changer compartment: 14 1/2" W; 13 1/4" D; 6 1/2" H  
 Cut for a 10" Baffle  
 Your Cost ..... **\$60.00**  
 In Blonde ..... **\$80.00**



## MODEL JC 85

Style and dignity compete for attention with full length doors in this magnificent 3-way combination cabinet . . .

### DIMENSIONS

Overall: 38" W; 22 1/4" D; 39" H  
 Radio compartment: 17 1/2" W; 18 1/2" D; 8 1/4" H  
 TV compartment: 17 3/4" W; 20 1/2" D; 18 1/4" H  
 Changer compartment: 16" W; 16" D; 7" H  
 Baffle cut for a 12" speaker  
 Your Cost ..... **\$127.50**  
 In Blonde ..... **\$147.50**



# Jackson TELEVISION CABINETS

★ All Jackson TV cabinets will accommodate most 10, 12, and 16 inch television sets.

★ Gleaming hand-rubbed mahogany veneer.

★ Designed by John Bergen, America's foremost furniture stylist.

★ All models available in Blonde.



## MODEL J C 55

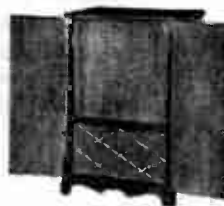
Table television cabinet with flush hinged doors. When not in use this cabinet becomes a beautiful piece of furniture.

- Baffle cut for an 8" speaker
- Tube center 11" from Chassis bottom

### DIMENSIONS

Overall: 19" W; 21½" D; 20" H  
TV compartment: 17½" W; 20½" D; 18½" H

Your Cost ..... **\$45.00**  
In Blonde ..... **\$55.00**



## MODEL J C 75

Full length doors to complete a cabinet in the most graceful American tradition.

- Baffle cut for a 10" speaker
- This magnificent set will accommodate any chassis made including the 19" screen.

### DIMENSIONS

Overall: 25" W; 26½" D; 43½" H  
TV compartment: 24" W; 24½" D; 24½" H

Your Cost ..... **\$90.00**  
In Blonde ..... **\$110.00**



## MODEL J C 65

Console television cabinetry at its most beautiful. With flame-hued doors closed it becomes the center piece in any living room.

- Baffle cut for 10" speaker
- Tube center 11" from chassis bottom

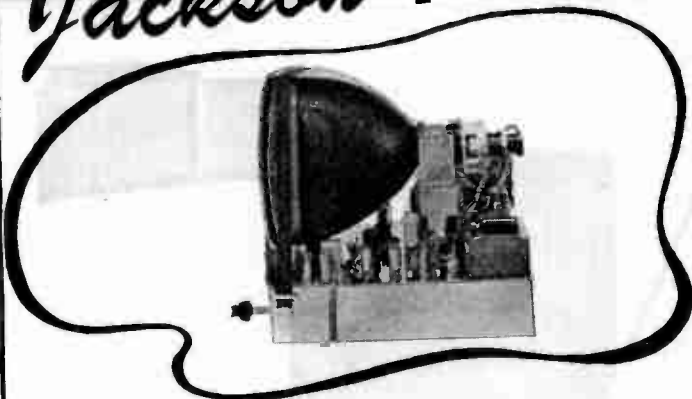
### DIMENSIONS

Overall: 21¼" W; 21½" D; 36" H  
TV compartment: 19½" W; 20½" D; 18¼" H

Your Cost ..... **\$60.00**  
In Blonde ..... **\$80.00**



# Jackson TV CHASSIS



## MODEL J 10

Ultra compact 10" TV chassis  
 Dimensions: 15½" W; 20" D; 16½" H  
 Your Cost .....

**\$172<sup>50</sup>**

Plus \$1.60 tax

## MODEL J 12

Expanded 12½" wide-angle picture  
 Dimensions: 15½" W; 20" D; 17½" H  
 Your Cost .....

**\$187<sup>50</sup>**

Plus \$1.60 tax

- ★ Cadmium plated.
- ★ RCA Licensed.
- ★ Complete fuse protection to safeguard valuable tubes and parts.
- ★ A F C on horizontal control.
- ★ True FM Sound.
- ★ 2 Knob Control. One for off-on, volume, and contrast—one for fine tuning and channel set.
- ★ Picture and sound interlocked. When picture is in focus sound is automatically at its best.
- ★ Turret-type tuner — adaptable to UHF — protection against changes in telecasting frequencies.
- ★ 20 tubes including picture tube and 2 rectifiers.
- ★ Straight AC chassis.
- ★ Mask, protective glass, Knobs and all external hardware included.

## MODEL J 14 REC

Rectangular 14 inch picture . . . may be mounted in a cabinet as small as the average 10" set requires. The entire face of the tube is utilized.  
 Dimensions: 15½" W; 20" D; 16½" H

Your Cost .....

**\$202<sup>50</sup>**

Plus \$1.60 tax

## MODEL J 16 REC

Tremendous 16 inch rectangular picture may be mounted in a cabinet as small as the average 12½" set requires. Entire face of the tube is utilized. Has a special 14,000 volt anode supply for a superbly clear picture.  
 Dimensions: 15½" W; 20" D; 17½" H

Your Cost .....

**\$225<sup>00</sup>**

Plus \$1.60 tax

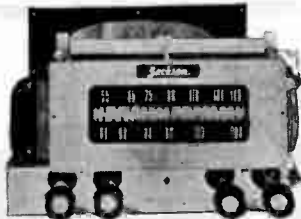
## MODEL J 19

Picture window 19 inch screen—A seat behind home plate . . . A spot on the 50 yard line . . . Front row center in orchestra hall.  
 Dimensions: 20" W; 24" D; 23½" H

Your Cost .....

**\$275<sup>00</sup>**

Plus \$1.60 tax



# Jackson RADIO CHASSIS

## MODEL J 100

Cadmium plated AM radio chassis • Slide rule dial (dial glass incl). AC-DC circuit • AVC • Push-pull audio system • Phono jack and AC phono motor leads • Built-in loop antenna

### 4 Controls —

- |                           |                       |
|---------------------------|-----------------------|
| 1—Continuous tone control | 3—Radio-phonos switch |
| 2—On-off and volume       | 4—Tuning              |

7 tubes, including rectifier.  
 Dimensions: 12" W; 8" D; 7" H

Your Cost .....

**\$30<sup>00</sup>**

## MODEL J 200

Cadmium plated AM-FM radio chassis • Slide rule dial (dial glass incl.) • AVC • AC chassis • AM loop incl. provision for external FM dipole.

### 4 Controls —

- |                           |                      |
|---------------------------|----------------------|
| 1—3 position tone control | 3—AM-FM phono switch |
| 2—Off-on and volume       | 4—Tuning             |

8 tubes, including rectifier.  
 Phono Jack and AC Phono motor leads  
 Dimensions: 13" W; 9" D; 8" H

Your Cost .....

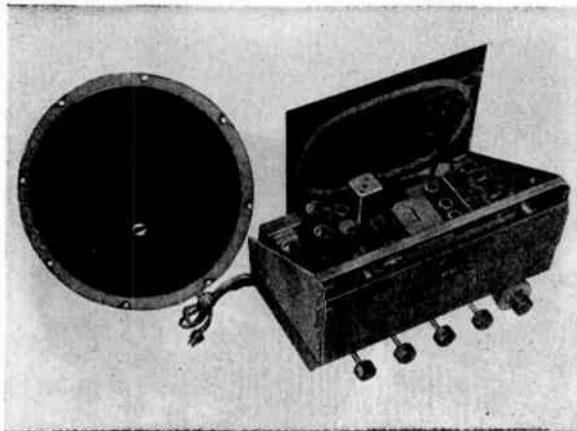
**\$60<sup>00</sup>**

**ESPEY**

MANUFACTURING CO. INC.

NEW YORK 21, NEW YORK

ESTABLISHED 1928

**Model 511B—AM-FM RADIO CHASSIS**

ALL MODELS CONTAIN NEW  
PRE-AMP PICKUP TUBE 6SC7

DEALER - SERVICEMAN.....**Net \$118.50**

I. Model 511 is a Superheterodyne AM-FM Radio Receiver chassis designed to operate on: 105/125 volts AC; 50/60 cycles. Power consumption: 85 watts.

II. FEATURES: 1. AC Superheterodyne AM-FM receiver. — 2. Improved Frequency Modulation Circuit. Drift Compensated. — 3. 12 Tubes plus Rectifier and Tuning Indicator. — 4. 3 Dual Purpose Tubes give added performance. — 5. Treble Tone Control. — 6. 6-Gang Tuning Condenser. — 7. Full-range Bass Tone Control. — 8. High-Fidelity AM-FM Reception. — 9. Automatic Volume Control. — 10. 13-watt (maximum) Push-Pull Audio Output. — 11. 12-inch PM Speaker with Alnico V Magnet, 25 watts. — 12. Indirectly Illuminated "Slide-Rule" Dial. — 13. Antenna for AM and Folded Dipole Antenna for FM reception. — 14. Provisions for external antennas. — 15. Wired for Phonograph Operations. — 16. Licensed under RCA patents. — 17. RMA listed. — 18. Multi-tap Output Transformer, 3.2, 8 and 500 ohms.

III. DESCRIPTION: Model 511 receiver features the latest in postwar engineering design. The FM circuit includes a tuned RF Amplifier stage, 2 stages of high gain Intermediate Frequency Amplification and an advanced design Ratio Detector circuit which provides low noise level between stations, freedom from AM interference, ease of tuning and ample gain for satisfactory operation with an indoor antenna in most urban locations. The AM circuit includes a Tuned RF Amplifier for improved selectivity and freedom from spurious responses. High Fidelity reproduction on FM and AM is insured through well-engineered circuits and the use of high quality parts. The tuning ranges are: Standard Broadcast — 535 to 1720 Kc. FM Band — 88 to 108 Mc.

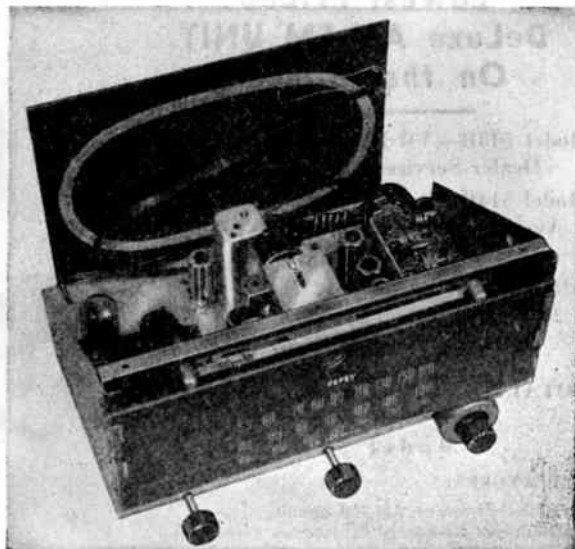
The large easy-to-read "slide-rule" type dial is illuminated by two pilot lights which also provide illumination for the red plastic dial pointer. A high ratio flywheel drive on the tuning condenser provides smooth tuning throughout the range of the receiver.

The receiver has two antennas; a Loop antenna for Standard Broadcast and a Folded Dipole antenna for the FM band. Provision is made for connecting an external Phonograph Pickup to the high-fidelity audio amplifier system of the receiver. The Multi-tap output transformer will permit the use of Most Popular Type Hi-Fidelity Speakers and dividing networks, or to match a standard 500-ohm line for Remote installations.

IV. TUBE COMPLEMENT: 1 AM-RF Amplifier tube. — 1 FM-RF Amplifier tube. — 1 AM Oscillator, Mixer tube. — 1 IF Amplifier tube. — 1 FM Detector Driver tube. — 1 FM Detector tube. — 1 FM Oscillator tube. — 1 FM Mixer tube. — 1 AM Detector, Audio Amplifier tube. — 1 Audio Amplifier-Inverter tube. — 2 Push-Pull Power Amplifier tubes. — 1 Rectifier tube. — 1 Electron Ray Tuning Indicator tube — 1 Pre-amp Pickup tube.

V. ACCESSORIES: The Model 511 chassis is supplied ready to operate, complete with tubes, antennas, speaker and all necessary hardware for mounting in a table cabinet or console, including escutcheon.

VI. CHASSIS DIMENSIONS AND WEIGHT: Chassis Dimensions: 13 $\frac{1}{4}$ " wide x 8 $\frac{1}{4}$ " high x 10" deep. Carton Dimensions: (2 units) 20" x 14 $\frac{1}{4}$ " x 10 $\frac{3}{4}$ ". Net Weight: 16 $\frac{1}{2}$  lbs. each.

**Model 512B—AM-FM TUNER**

Outstanding AM-FM TUNER, self-powered  
for use with all types of Audio Amplifiers.

DEALER - SERVICEMAN.....**Net \$99.95**

I. Model 512 Superheterodyne AM-FM Radio Tuner chassis is designed to operate on: 105/125 volts AC; 50/60 cycles. Power Consumption: 66 watts.

II. FEATURES: 1. AC Superheterodyne AM-FM tuning circuit. — 2. Improved Frequency Modulation Circuit, drift compensated. — 3. 9 Tubes plus Rectifier and Tuning Indicator. — 4. 3 Dual Purpose Tubes give added performance. — 5. Automatic Volume Control. — 6. 6-Gang Tuning Condenser. — 7. High-Fidelity AM-FM Reception. — 8. Indirectly Illuminated "Slide-Rule" Dial. — 9. Antenna for AM and Folded Dipole Antenna for FM Reception. — 10. Provisions for external antennas. — 11. Wired for Phonograph Operations. — 12. Licensed under RCA patents. — 13. RMA listed. — 14. High and Low Level Audio Output. — 15. Utility Socket provides power for magnetic reluctance pickup pre-amplifier.

III. DESCRIPTION: Model 512 Tuner features the latest in postwar engineering design. The FM circuit includes the tuned RF Amplifier stage, 2 stages of high-gain Intermediate Frequency Amplification, and an advanced design Ratio Detector circuit which provides low noise level between stations, freedom from AM interference, ease of tuning and ample gain for satisfactory operation with an indoor antenna. The AM circuit includes a Tuned RF Amplifier for improved selectivity and freedom from spurious responses. High-Fidelity reproduction on FM and AM is insured through well-engineered circuits and high-quality parts.

Line Voltage is made available at two outlets at the rear of the tuner; these are actuated by the tuner on-off switch. To facilitate custom installations, B+ and Heater Voltages are made available at a utility socket mounted in the tuner. This is suitable for powering auxiliary pre-amplifiers as used with variable reluctance type pickups. Holes for 2 additional controls are available for the convenience of the user. The tuning ranges are: Standard Broadcast — 535 to 1720 Kc. FM Band — 88 to 108 Mc. The receiver has two antennas: a Loop antenna for Standard Broadcast and a Folded Dipole antenna for the FM Band.

Provision is made for connecting an external phonograph pick-up to the tuner audio system, for use with all types of amplifier installations. Two audio output channels are provided, one at high level, the other at low level; both are controlled by the tuner volume control.

IV. TUBE COMPLEMENT: 1 AM-RF Amplifier tube. — 1 FM-RF Amplifier tube. — 1 AM Oscillator, Mixer tube. — 1 FM Detector Driver tube. — 1 IF Amplifier tube. — 1 FM Detector tube. — 1 FM Oscillator tube. — 1 FM Mixer tube. — 1 AM Detector, Audio Amplifier tube. — 1 Electron Ray Tuning Indicator tube. — 1 Rectifier tube — 1 Pre-amp Pickup tube.

V. ACCESSORIES: Model 512 chassis is supplied ready to operate, complete with tubes, antennas, and all necessary hardware for mounting in a table cabinet or console, including escutcheon.

VI. CHASSIS DIMENSIONS AND WEIGHT: Chassis Dimensions: 13 $\frac{1}{4}$ " wide x 8 $\frac{1}{4}$ " high x 9" deep. Carton Dimensions: (2 units) 20" x 14 $\frac{1}{4}$ " x 10 $\frac{3}{4}$ ". Net Weight: 14 lbs.

**ESPEY**

MANUFACTURING CO. INC.

NEW YORK 21, NEW YORK

ESTABLISHED 1928

## Lowest Priced DeLuxe AM-FM UNIT On the Market!

Model 513B—AM-FM DeLuxe TUNER  
Dealer-Serviceman . . . . Net \$ 96.50

Model 514B—DeLuxe Audio  
Amplifier, 25 Watts  
Dealer-Serviceman . . . . Net \$ 41.95

Alnico V PM Speaker, 12",  
25 Watts  
Dealer-Serviceman . . . . Net \$ 10.35

**TOTAL—Dealer-Serviceman Net \$148.80**

### Model 513B

#### I. FEATURES:

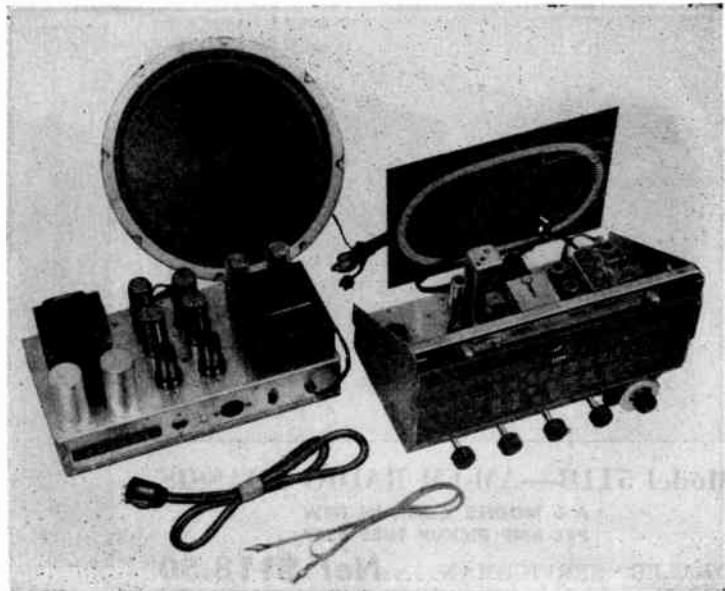
1. Superheterodyne AM-FM circuit.
2. Improved Frequency Modulation Circuit, stabilized against drift.
3. 10 Tubes plus Tuning Indicator.
4. Tuned RF Circuits on AM and FM.
5. 6-Gang Variable Tuning Condenser.
6. Automatic Volume Control.
7. Full Range Bass Boost Control.
8. Full Range Treble Control.
9. Indirectly Illuminated "Slide-Rule" Dial.
10. Fly Wheel Tuning Drive.
11. Antenna for AM and Folded Dipole Antenna for FM.
12. Provision for external antennas.
13. Wired for Phonograph Operation.
14. Utility Socket provides power for magnetic reluctance pickup pre-amplifier.
15. Licensed under RCA and Hazeltine.
16. RMA listed.

II. Model 513 AM-FM Tuner employs 10 tubes plus a tuning indicator tube in a superheterodyne circuit. It is designed to operate from an external power supply and feed into an external audio amplifier. (Model 514 DeLuxe Power Supply-Audio Amplifier is specifically designed to work in conjunction with the Model 513 Tuner.) The power requirements for the tuner are 6.3 volts AC or DC at 3.5 amperes, and 200 volts DC at 60 milliamperes.

III. DESCRIPTION: The Model 513 Tuner incorporates the latest developments in engineering design. It is intended for the discriminating listener. Separate, Tuned RF stages are employed on both the AM and FM bands to provide extreme sensitivity and minimize spurious responses. The FM circuit also includes two stages of high-gain intermediate frequency amplification to drive a ratio detector circuit of advanced design. AM: 535 Kc. to 1720 Kc. — FM: 88 Mc. to 108 Mc.

IV. TUBE COMPLEMENT: 1 6BA6 AM-RF Amplifier tube. — 1 6BA6 FM-RF Amplifier tube. — 1 6BE6 AM Converter tube. — 1 6BE6 FM Mixer tube. — 1 6C4 Oscillator tube. — 1 6SG7 AM-FM IF Amplifier tube. — 1 6SH7 FM-Ratio Detector Driver tube. — 1 6J5 AM-Detector AVC tube. — 1 6SQ7 AM-FM 1st Audio tube. — 1 6AL5 FM Ratio Detector tube. — 1 6U5 Tuning Detector tube—1 6SC7 Pre-amp Pickup tube.

V. CHASSIS DIMENSIONS: 18½" wide x 8½" high x 9" deep. Weight: 9½ lbs.



Model 514 Amplifier & Power Supply.

Model 513 AM-FM Tuner.

### Model 514B

1. Model 514 DeLuxe Power Supply and Audio Amplifier contains 6 tubes, plus 2 rectifiers in a high gain push-pull amplifier circuit. It is designed specifically for use in conjunction with the Model 513 Tuner, but may be used wherever a high quality audio amplifier may be required. Power requirements are: 105/125 volts AC; 50/60 cycles; power consumption: approximately 150 watts.

#### II. FEATURES:

1. Parallel Push-Pull Output Circuit.
2. Self-Balanced Phase Inverter System.
3. Extended Range High-Fidelity Response.
4. Inverse Feedback Circuit.
5. 6 Tubes plus 2 Rectifiers.
6. Output Impedance selective for any speaker requirement (4 to 500 ohms).
7. License under RCA.
8. RMA listed.

ALL MODELS CONTAIN  
NEW PRE-AMP  
PICKUP TUBE 6SC7

III. DESCRIPTION: The Model 514 Power Supply-Audio Amplifier employs the best in proven engineering design. Six tubes are incorporated in a balanced phase inverter parallel push-pull amplifier. By the use of an inverse feedback circuit, high-fidelity performance is obtained.

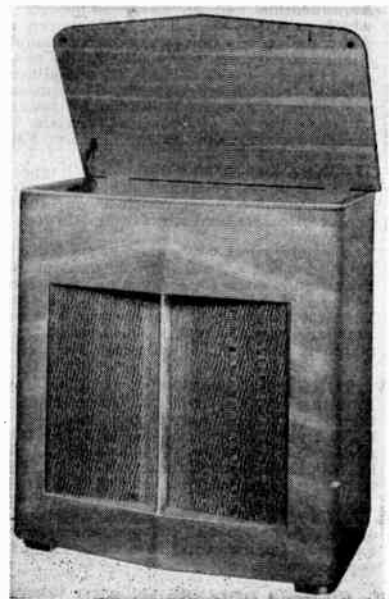
IV. TUBE COMPLEMENT:  
2 6J5 Audio Driver tubes. —  
4 6V6 Audio Output tubes.  
— 2 5Y3 Rectifier tubes.

V. 18½" wide x 7½" high x  
7" deep. Weight 18 lbs.

### Model 243 Console Cabinet

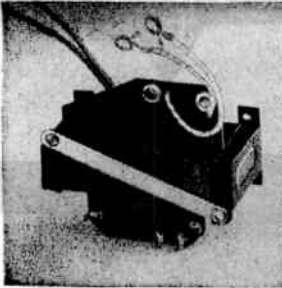
Dealer-Serviceman . . . Net \$53.50

Modernistic, exquisitely finished limed walnut Console Cabinet. Furnished with panels to house ESPEY chassis and standard record changers.

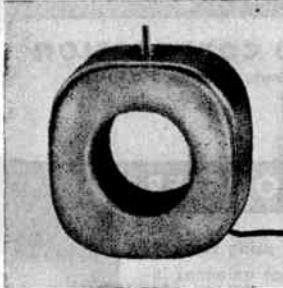


Model 243 — Open

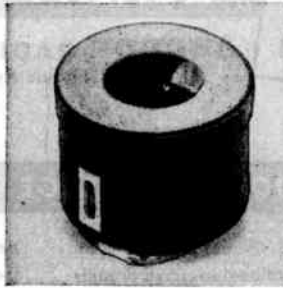
# Philmore TV Replacement Parts



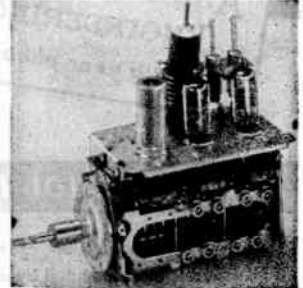
T118—Horizontal Deflection Output Transformer



T122—Focus Coil



T121—Deflection Yoke



T120—12 Channel Tuner

## COILS AND TRANSFORMERS

Part No.	Description	List Price
T100	1st and 2nd Sound I.F. Transformers. Interchangeable with RCA type 201K1.	1.55 ea.
T101	1st Pix I.F. Transformer. Interchangeable with RCA type 202K2.	1.80 ea.
T102	2nd Pix I.F. Transformer. Interchangeable with RCA type 202K3.	1.25 ea.
T103	Sound Discriminator Transformer. Interchangeable with RCA type 203K1.	1.75 ea.
T104	Horizontal (Synch.) Discriminator Transformer. Interchangeable with RCA type 208TB.	2.10 ea.
T105	3rd and 4th Pix Coils. Interchangeable with RCA type 202L1.	.45 ea.
T106	Cathode Trap Coil. Interchangeable with RCA type 202K4.	1.55 ea.
T107	Video Peaking Coil, 180 MH. Shunt Resistance 39,000 Ohms. Interchangeable with RCA type 203L1.	.35 ea.
T108	Video Peaking Coil, 250 MH. Shunt Resistance 10 Megohms. Interchangeable with RCA type 203L2.	.35 ea.
T109	Video Peaking Coil, 120 MH. Shunt Resistance 22,000 Ohms. Interchangeable with RCA type 203L3.	.35 ea.
T110	Video Peaking Coil, 93 MH. Shunt Resistance 10 Megohms. Interchangeable with RCA type 203L4.	.30 ea.
T111	Filament Chokes, 8 MH. Interchangeable with RCA type 204L1.	.12 ea.
T112	Width Control Coil. Interchangeable with RCA type 201R1.	.60 ea.
T113	Horizontal Linearity Control Coil. Interchangeable with RCA type 201R3.	.70 ea.
T114	Audio Single Output Transformer (speaker) for 6K6 Tubes	1.20 ea.
T115	Power Transformer, 295 MA. Fully Shielded. Interchangeable with RCA type 201T6.	25.50 ea.
T116	Vertical Deflection Output Transformer. Interchangeable with RCA type 204T2.	4.50 ea.
T117	Vertical Oscillator Transformer (Blocking). Interchangeable with RCA type 208T2.	2.00 ea.
T118	Horizontal Deflection Output Transformer. Interchangeable with RCA type 211T1 or 211T3.	7.25 ea.
T121	Deflection Yoke, 8.3 MH. Vertical 50 MH. Interchangeable with RCA type 201D1.	6.00 ea.
T122	Focus Coil, 247 Ohms D.C. Resistance. Interchangeable with RCA type 202D1.	4.75 ea.
T203	Ion Trap Beam Bender P.M. (Double Magnet). Interchangeable with RCA types 203D1 or 203D3.	1.40 ea.

## ELECTROLYTIC CONDENSERS

Part No.	Description	List Price
C220	(In Round Aluminum Cans) — 40—10+80 Mfd. — 450—450—150 Volts —	2.50 ea.
C221	— 40—40+10 Mfd. — 450—450—450—Volts	2.75 ea.
C222	— 80+50 Mfd. — 450—50 Volts — With Cardboard Insulated Tube	2.75 ea.
C223	— 40+10+10 Mfd. — 450—450—350 Volts	2.50 ea.
C224	— 20+80 Mfd. — 450—350 Volts	2.75 ea.
C225	— 250+1000 Mfd. — 10—6 Volts	2.25 ea.
H125	Bakelite Insulating Plates for above condensers (set of 4)	.18 Set

NOTE: All Condensers are rated for 85°C Operation.

## VOLUME CONTROLS

Part No.	Description	List Price
R131	Picture and Sound—10,000 Ohms and 1 Megohm Dual Control with Power Switch	2.00 ea.
R152	Brightness Control—50,000 Ohms	.65 ea.
R160	Vertical and Horizontal Hold—1 Megohm and 50,000 Ohms Dual Control	1.65 ea.
R169	Height Control—2.5 Megohm	.65 ea.
R170	Vertical Linearity Control—5,000 Ohms	.65 ea.
R181	Vertical Centering Control—20 Ohms, Tapped Center, Wirewound	1.25 ea.
R184	Focus Control—1500 Ohms, Wirewound	1.75 ea.
R187	Horizontal Drive Control—20,000 Ohms	.65 ea.
R211	Horizontal Centering Control—20 Ohms, Wirewound	1.20 ea.

## WIREWOUND RESISTORS AND VOLTAGE DIVIDERS

Part No.	Description	List Price
R200	5,000 Ohms, 5 Watt	.45 ea.
R105	1360 Ohms—17 Watt and 250 Ohms—10 Watt	1.25 ea.
R209	5300 Ohms—20 Watt, 500 Ohms—2 Watt and 500 Ohms—2 Watt	1.25 ea.
R186	6750 Ohms 3.2 Watt, 12 Ohms—1/2 Watt and 93 Ohms—4 Watt	1.25 ea.

## TUNER UNITS, KNOBS AND ESCUTCHEONS

Part No.	Description	List Price
T120	12 Channel Tuner, complete with Tubes. Pre-Aligned Turret Type	55.00 ea.
KN101-105	Tuner Knobs with Springs (set of two knobs) also includes 12 Channel Escutcheon Plate	1.50 Set
KN101-R	Tuner Knob with Springs (set of two knobs)	.70 Set
KN102-R	Picture and Sound Knobs with Springs (set of two knobs)	.40 Set
KN103-R	Vertical Hold and Horizontal Hold Knobs with Springs (set of two knobs)	.40 Set
KN104-R	Brightness Knobs with Springs (set of two knobs)	.40 Set
KN105-R	13 Channel Escutcheon Plate and Spring	.75 ea.

NOTE: Above knobs are to be used with the RCA 13 Channel Tuner.  
 KN106—Set of Decals for either the 12 Channel or 13 Channel Tuner ..... 20 Set  
 Also available are a variety of sets of Knobs in Mahogany and Gold and in various color combinations.

## ADDITIONAL TELEVISION ITEMS

Part No.	Description	List Price
S105	High Voltage Rectifier Socket Assembly	1.25 ea.
S106	Duo-Decal Kinescope Sockets with 5-12" Leads	.80 ea.
301	300 Ohm Twin Connecting Transmission Line, 1000 ft. Spools	35.00 M ft.
302	High Voltage Lead 23" Long with Clip for Connecting to Kinescope Tube	.65 ea.
Model DP	Voltage Doubler Assembly for conversion to higher voltage of approximately 12,000 volts, including one 1B3 tube	29.35 ea.

## BRACKETS AND HARDWARE ITEMS

Part No.	Description	List Price
H101	Bracket for Hold Control	.65 ea.
H102	Bracket for Tuner Shaft Bearing	.25 Set
H103	Bakelite Bearing for Tuner Shaft	.25 Set
H104	Brackets for Mounting Chassis to Cabinet (set of 4 brackets)	.55 Set
H105	Bracket for Mounting Deflection Yoke	.40 ea.
H106A	Bracket for Mounting Focus Coil (upper)	.25 ea.
H106B	Bracket for Mounting Focus Coil (lower)	.50 ea.
H106D	Studs Threaded for Focus Coil Bracket (set of 2)	.15 Set
H107	Bracket for Mounting Speaker	.65 ea.
H109-A-B-C-D	High Voltage Shield Assembly consisting of Transformer Mounting Base, Side Cover, Top Cover and Back Cover	7.00 Set
H109E	6 foot Power Supply Cord with Safety Break Female Connector	.75 ea.
H11A	Shield for Voltage Divider	1.25 ea.
H11B	Cover for Voltage Divider Shield	.75 ea.
H112	Sub-Chassis Plate for Mounting Electrolytic Condensers	.75 ea.
H114	Shield for Cathode Trap Coil	.85 ea.
H115	Safety Break Male Connector for AC Input Supply	.20 ea.
H116	Tuner Shield	.75 ea.
H117	Shield for Discriminating Sound Transformer	.35 ea.
H132	Threaded Round Head Screws 4 1/2" long (set of 2)	.30 Set
H135	Ring Corona Wire	.25 ea.
H136	Brackets for Mounting S105 H.V. Socket Assembly (set of 4 brackets)	.10 Set
H137	Bracket for Width Control	.35 ea.
H142	Bracket for Kinescope Tube	1.00 ea.
H153	Complete set of Universal Kinescope Brackets for RCA type 630 and 830 chassis, including elastic belt and necessary mounting hardware. Suitable for all types of tubes from 12 1/2" to 19" including the rectangular tubes.	11.25 Set
T125	T.V. Chassis, formed and punched, Cadmium plated for Philmore Television Sets and Kits or any RCA 630 Type Set	8.50 ea.

## A.G.C. KIT—AUTOMATIC GAIN CONTROL WITH KEYED-PULSE FAST ACTION

Model AGC-10	For 10" and 12 1/2" Tube	11.25 Kit
Model AGC-16	For 16" Tube	11.85 Kit

Manufacturers of the RCA 630 type Chassis completely assembled, also Kits partly assembled and completely unassembled, with step-by-step instructions for assembly, including full size detailed blueprints.

Also manufacturers of Table Models and Consolettes up to 19" Kinescope Tubes.

Additional items not listed are available. Please write for prices.

# ANCHOR TV PRE-AMPLIFIERS

The Leader in  
QUALITY BOOSTERS

**ANCHOR  
ENGINEERING**  
always a year ahead!

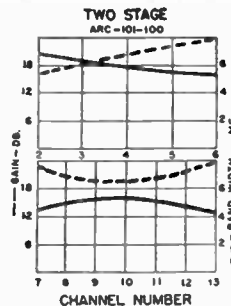
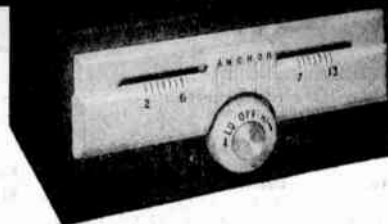
**ANCHOR RADIO CORPORATION**  
2215 South St. Louis Avenue, Chicago 23, Illinois



## Model ARC-101-100—TWO-STAGE BOOSTER

The new 2-Stage version of the famous ANCHOR TV BOOSTERS is recommended by a national research organization. The ANCHOR 2-Stage Pre-amplifier will increase original TV signal strength five times. This unit incorporates many new engineering features which include a radically new switching method of tube and circuit components in RF stage (Pat. Pend.) through which maximum gain and bandwidths are achieved. Single knob control for tuning and switching (Pat. Pend.) make this unit outstanding in simplicity and ease of operation. No other adjustments are necessary. It reduces interference to a minimum and increases signal strength for excellent pictures and greater contrast on all channels (as shown in charts), especially effective in "fringe" areas — provides good reception in locations formerly considered unsatisfactory. Exclusive simultaneous iron core tuning of input and output circuits results in uniform response on all channels. Reduces interference caused by AM, FM, short wave or Amateur Stations, as well as interchannel interference in strong signal areas. Cleans up noise and "snow" patterns—permits good reception from an indoor antenna in normal service areas. Most stable non-regenerative unit available—it is the unit that is not returned. ANCHOR 2-STAGE BOOSTER is ideal for show room demonstration permitting operation of several sets at one

time using separate indoor antennas instead of outdoor antennas. For 300-ohm lines. Modernly styled with streamlined plastic escutcheon and soft mahogany leatherette finish. Illuminated Pointer Size,  $4\frac{1}{8} \times 8\frac{3}{8} \times 4\frac{1}{4}$ . With 2-6AK5 tubes and selenium rectifier. Complete instructions supplied. For 105-125 volts. 50-60 cycles. Shipping weight, 6 lbs. ARC-101-100

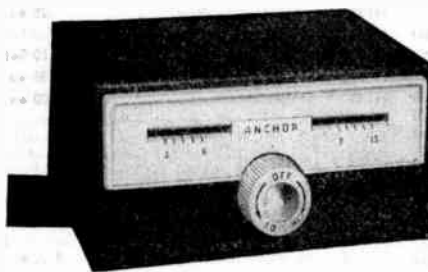


List, \$44.95. NET, \$26.95

8 116 02W 51  
CA 30

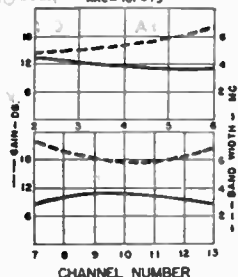
Last year the ANCHOR Single-Stage BOOSTER improved television reception for 1 out of every 4 TV Set Owners. Thousands of apartment dwellers, suburban and fringe area residents the nation over demonstrated their preference by making ANCHOR the Number One BOOSTER in sets sold. ANCHOR developed this recognition only through its own top-notch performance by being able to deliver sharp, snow-free pictures in most difficult conditions.

Now ANCHOR has added the new Two-Stage BOOSTER and vastly improved Single-Stage BOOSTER to their line to bring television, and the finest television reception, to everyone. The New ANCHOR Pre-Amplifier Will Out-perform Any Two-Stage BOOSTER on the market.



## Model ARC-101-75—SINGLE-STAGE BOOSTER

SINGLE STAGE  
ARC-101-75



This new ANCHOR Single-Stage BOOSTER incorporates all of the features of the Two-Stage Model ARC-101-100. The outside case is changed slightly to differentiate one from the other. It is modernly styled with streamlined plastic escutcheon and soft mahogany leatherette finish. This unit is manufactured to take the place of the original ARC-101-50 and is competitively priced. It will outperform any other Single-Stage BOOSTER on the market as well as some Two-Stage BOOSTERS. This Single-Stage unit greatly

reduces interference and increases the original signal strength approximately 3 times (as shown in charts) for excellent pictures and sharp definition on all channels. It is especially recommended for low signal areas nearer cities where there may be any number of interference problems. Size,  $4\frac{1}{8} \times 8\frac{3}{8} \times 4\frac{1}{4}$ ". With 1-6AK5 tube and selenium rectifier. For 100-125 volts, 50-60 cycles. Shipping weight,  $5\frac{1}{2}$  lbs.

List, \$33.00. NET, \$19.80

# TECH-MASTER PRODUCTS COMPANY

## AMERICA'S FINEST TELEVISION KITS

The Only TV Kits with "Circuit-Aligned" Components

- ★ 150 SQUARE INCHES OF PICTURE AREA
- ★ 30 TUBES — Standard Turret Tuner
- ★ Ultra-Simplified Wiring Instructions
- ★ Automatic Gain Control
- ★ Tech-Master Integrity  
(Only Perfection Is Acceptable)

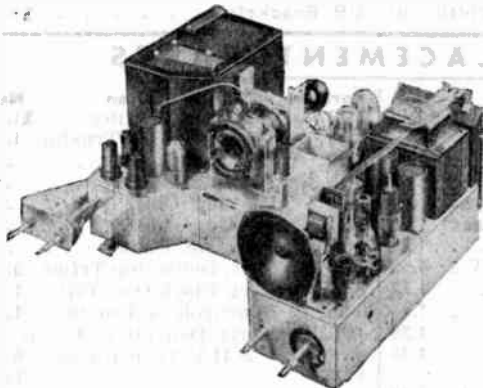
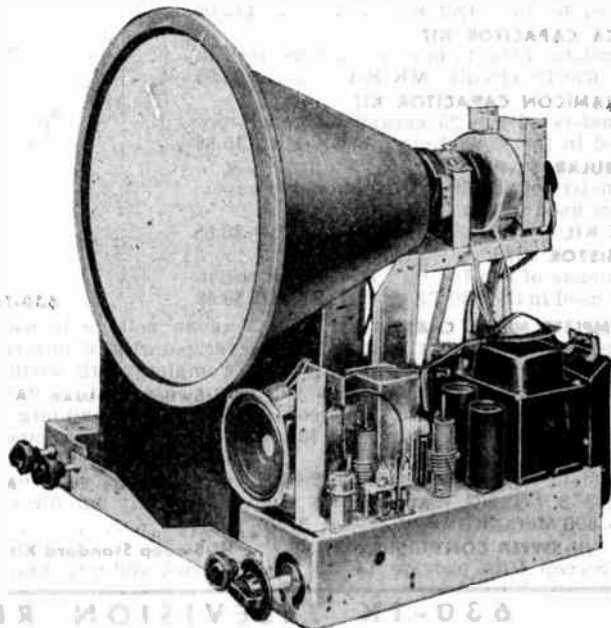
# "Super 16"

Tech-Master, pioneer in the TV kit field, scoops the industry again with this "Super-16" TV kit that produces big, BIG pictures of superlative quality. Our engineers utilized our famous 630-TK De Luxe kit as a basis. An 11T5 flyback transformer, a 2D2 focus coil, a 1R4 width control and other fine components PLUS new Universal Brackets to accommodate kinescopes up to 16 inches have been added. Has improved A.G.C. circuit for fine performance.

A clever, and thoroughly sound, voltage double circuit using two 1B3's has been designed by our engineers to provide full voltage and current to drive up to 20-in kinescopes with excellent brilliance, definition and sweep. Ultra-simplified instructions make it possible for practically anyone to wire this kit over a week-end. The famous "Circuit-Aligned" components supplied with our kits keep final adjustments down to a negligible minimum, and these can be performed without additional equipment.

"SUPER-16" 630-TK De Luxe TV Kit, complete with all tubes, parts and instructions.

Less Kinescope . . . . . Net **\$169.50**



### BC-1223 "BLUE-RIBBON" TV KIT

Tech-Master's latest development in TV kits for 10" and 12" picture tubes. Features automatic gain control; 4-stage video IF; 4 Mc band-width; 3-stage sound IF includes "Standard" Turret front end tuner, completely wired, factory tested and aligned. Supplied with all first quality components, latest 9-pin miniature tubes, "Video-Lok" circuit using phase discriminator. All components but tuner and PM speaker are mounted. Complete with all tubes, parts, instructions.

BC-1223 "Blue-Ribbon" TV Kit, less kinescope. Net **\$119.95**

### TECH-MASTER TELEVISION CABINETS

Handsome, sturdy, television cabinets, completely drilled, ready for installing above kits, or any set using a 630-type chassis. Hand-rubbed mahogany finish, safety glass fronts.

- 10" Table Model Cabinet . . . . . Net **\$42.50**
- 12½" Table Model Cabinet . . . . . Net **\$44.50**
- 16" Table Model Cabinet . . . . . Net **\$54.50**
- 16" or 19" Console Cabinet . . . . . Net **\$98.50**

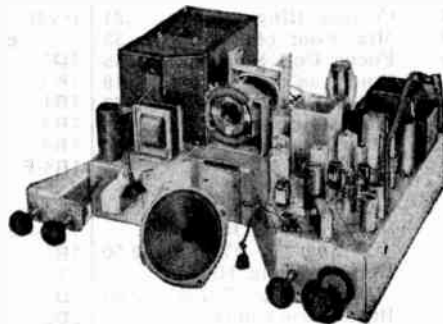
### 630-TK DE LUXE TV KIT

Build your own duplicate of the famous RCA 630-TS with this superline, 1950 model Tech-Master 630-TK television kit. The Tech-Master kit is complete in all details—major components, all controls, all sockets and terminal strips are mounted in place. Only the interesting and instructive wiring remains to be done from the ultra-simplified wiring diagrams. Furnished with "Standard" turret front end tuner completely wired, aligned and tested. "Circuit-Aligned" components mean all final adjustments can be made without additional equipment. 630-TK De Luxe TV Kit, all components mounted, complete with all tubes, parts, instructions, less kinescope.

Net **\$157.50**

630 Standard TV Kit. Similar to above but not assembled.

Net **\$144.50**



**Completely Wired & Aligned Chassis Available . . . Information On Request**

# TECH-MASTER PRODUCTS COMPANY

## 630-TK TELEVISION COMPONENTS KITS

### ELECTROLYTIC CONDENSER KIT

Consists of our part numbers 338, 367, 368, 369, 370, 371 listed below. EK Kit . \$7.98

### BLEEDER RESISTOR KIT

Consists of our part numbers 439, 458, 459, 876 listed below. BK Kit . . . . \$4.25

### IF & VIDEO COIL KIT

Consists of 2 1K1s, 2K2, 2K3, 2K4, 3K1, 2 2L1s, 3L1, 3L2, 2 3L3s, 2 3L4s, 5 4L1s listed below. 4X2 Kit . . . . \$12.00

### MICA CAPACITOR KIT

Consists of the 14 mica capacitors used in the 630-TS circuit. MK Kit . . . . \$3.95

### CERAMICON CAPACITOR KIT

Consists of the 25 ceramicon capacitors used in the 630-TS circuit. CK Kit . \$5.89

### TUBULAR BY-PASS KIT

Consists of the 38 by-pass moulded capacitors used in the 630-TS circuit.

TK Kit . . . . . \$8.85

### RESISTOR KIT

Consists of the 107 1/2, 1 and 2-watt resistors used in the 630-TS circuit. BK Kit \$8.48

### COMPLETE METAL CHASSIS KIT

Consists of our part numbers 1SC, 104, 107, 115, 116, 123, 129, 131, 172, 174, 308, 442, 445, 789, 4 860s, 2004, 2009, 3415, listed below. (Less cord.) No. 1950 Metal Kit . . . . \$29.50

### BASIC METAL CHASSIS KIT

Consists of our part numbers 1SC, 129, 172, 174, 308, listed below. No. 500 Metal Kit . . . . \$7.70

### HI-SWEEP CONVERSION KITS

Hi-Sweep Kits provide 13 KV 2nd

anode voltage in 630-type TV sets for use with 16" or larger kinescopes. Complete with wiring instructions.

**Hi-Sweep De Luxe "A" Kit**—Includes TJ1 flyback and mtg. bracket, width coil and ALL components for use with yokes up to 60" . . \$13.20

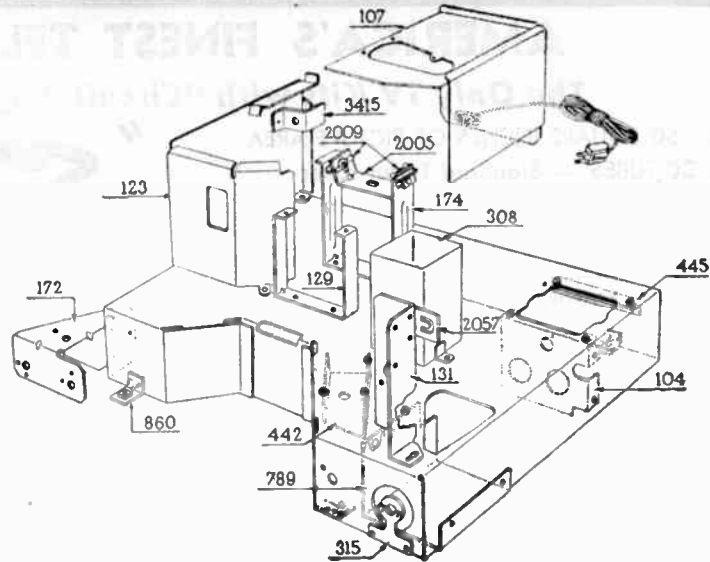
**Hi-Sweep De Luxe "B" Kit**—Similar to "A" kit but for yokes from 62" to 70" . . . . . \$13.20

**Hi-Sweep Standard Kit**—Includes TJ1 flyback and mtg. bracket, width coil

and instructions . . . . . \$8.75

**AUTOMATIC GAIN CONTROL KIT**  
Includes AGC width coil, 6AU6 tube and under-chassis mounting bracket, all components, step-by-step instructions for adding AGC to any 630-type TV set  
AGC Kit . . . . . \$4.45

**UB ADJUSTABLE MOUNTING BRACKETS**  
Kinescope mounting brackets for tubes from 12 1/2" to 19".  
UB Brackets . . . . . \$4.65



630-TK Chassis Assembly (No. 1950 Metal Kit)

## 630-TK TELEVISION REPLACEMENT PARTS

Part No.	Description	Net	Part No.	Description	Net	Part No.	Description	Net
<b>METAL PARTS AND BRACKETS</b>			11.15T	20,000 ohms (71447)	\$0.44	3D3	Ion Trap Magnet . . .	\$1.20
1SC	Stamped Chassis . . .	\$5.50	11.16	Horizontal Drive 250,000 ohms . . . .	.44	3K1	Discriminator Trnsfm.	1.65
1X1	Yoke Mounting Hood . .	.94	338	Vert. & Horiz. Centering 20 ohm WW (71443)	.97	3L1	Peaking Coil . . . .	.27
104	Electrolytics Bracket . .	1.50	367	<b>ELECTROLYTIC CONDENSERS</b>		3L2	Peaking Coil . . . .	.27
107	H.V. Shield Cover . . .	3.75	368	250/10V, 1000/6V . . .	1.25	3L3	Peaking Coil . . . .	.27
115	Bleeder Case Cover . . .	1.90	369	40-10/450V, 80/150V . .	1.53	3L4	Peaking Coil . . . .	.27
116	Bleeder Case . . . . .	2.20	370	40-40-10/450V . . . .	1.72	4L1	Filament Choke . . . .	.12
123	H.V. Comptmnt. Shield . .	3.75	371	80/450V, 50/50V . . . .	1.61	4T2	Vert. Deflection Trfmr.	3.00
129	Yoke Mtg. Bracket . . . .	.99	439	40-10/450V, 10/350V . .	1.39	8T2	Vert. Block Osc. Trfmr.	1.65
131	Speaker Bracket . . . . .	1.95	458	20/450V, 80/350V . . .	1.48	8T8	Synchrolock Trnsfmr.	1.38
172	Bracket for Controls . . .	1.65	459	<b>BLEEDER RESISTORS</b>		11T1	Horiz. Deflection Output & H.V. Transformer	5.70
174	Focus Coil U Bracket . . .	1.65	876	6300 ohm WW 50 watt . .	1.47	11T5	" " " " " . . . . .	7.50
308	Cathode Trap Shield . . .	1.65	876	1590 ohm WW 50 watt . .	1.18	18T1	" " " " " . . . . .	3.35
315	R.F. Shaft Support . . . .	.65	876	6855 ohm WW 50 watt . .	1.06	TJ1	Horiz. Deflection Output & H.V. Xfmr. (G-E type)	5.50
442	Detector Shield . . . . .	.65	876	5000 ohm WW 10 watt . .	.36	157	Power Transformer . . .	15.60
445	Transformer Bracket . . . .	.65	HVR	2 Meg. HV Resistor . . .	.60	<b>KNOB AND ESCUTCHEON PLATES</b>		
789	R.F. Unit Shield . . . . .	1.50	1D1	<b>COILS AND TRANSFORMERS</b>		533	Knob, Fine Tuning . . .	.24
853	Corona Ring . . . . .	.21	1K1	Deflection Yoke . . . . .	4.50	534	Knob, Station Selector . .	.33
860	Mtg. Foot (4 req.) ea. . .	.33	1R1	Sound IF Transformer . .	1.32	535	Knob, Pic, Brightness, Vertical Hold . . . . .	.21
2005	Focus Coil Support . . . .	.65	1R3	Width Control Coil . . .	.42	536	Knob, Hor. Hold, Vol. . .	.18
2009	Stud Ass'y & Nuts . . . .	.18	1R4	Horiz. Lin. Control . . .	.48	537	Knob, Dummy Brightness . .	.18
3415	Width Control Bracket . . .	.33	1R4-E	Width Control Coil . . .	.60	598A	12 Chan. Plate & Spring .	.60
<b>VOLUME CONTROLS</b>			1R4-J	AGC Width Coil (G-E type)	1.65	598B	13 Chan. Plate & Spring .	.60
11.4	Vert. Lin. Control 5000 ohms (71441)	.73	1R4-AG	AGC Width Coil . . . .	1.25	<b>MISCELLANEOUS COMPONENTS</b>		
11.5	Height Control 2.5 Megs (71440)	.44	1R5	Horiz. Lin. Control . . .	.72	450	500 mmf. 10 KV Condsr.	1.03
11.7	Volume—On/Off 10,000/ 1 Meg (71446)	2.50	1T8	Power Transformer . . . .	11.40	451	500 mmf. 20 KV Condsr.	1.35
11.8	Vert. & Horiz. Hold 50K/1 Meg (72758)	2.00	2D1	Focus Coil . . . . .	4.50	457	Line Cord & Plug . . . .	.96
11.9	Brightness Control 50,000 ohms (71444)	.44	2D2	Focus Coil . . . . .	6.60	458	Male Socket for above . .	.15
11.11	Focus Control 1500 ohms (71442)	.97	2K2	1st PIX IF . . . . .	1.41	525	Kine. Socket & Leads . .	1.32
11.15	Horizontal Drive		2K3	2nd PIX IF . . . . .	1.08	532	H.V. Anode Cap & Lead . .	.60
			2K4	Cathode Trap . . . . .	1.32	MVS	H.V. Socket Assembly . . .	1.75
			2L1	3rd & 4th PIX IF . . . .	.39	DS2	Doubler Socket Ass'y . . .	2.65

# RCA ELECTRONIC COMPONENTS

## TELEVISION PARTS

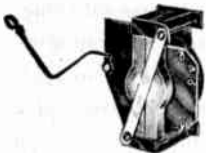


### CONTROLS

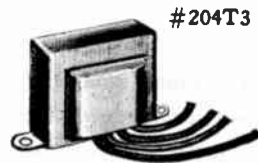
- #201R1 **Width Control.** Screwdriver-adjusted variable reactor. Powdered iron core. For use with RCA 211T1 where kinescope anode potential not over 9 KV.....\$0.70
- #201R3 **Horizontal Linearity Control.** Features spring clip mounting. For deflection circuits using RCA 211T1 and 201D1.....\$0.80
- #201R5 **Horizontal Linearity Control.** For use with the RCA 16AP4. Designed especially for use with the RCA 211T5 and the RCA 201D1. ....\$1.20
- #203R1 **Horizontal Oscillator and Synchronizing Control-Coil.** A permeability tuned center-tapped oscillator coil for use in Television receivers employing a 6SN7-GT as a combination horizontal blocking oscillator and synchronizing control tube.....\$1.80
- #205R1 **Horizontal Blocking Oscillator Coil and Frequency Stabilizing Coil.** For use with the 6SN7-GT, similar to the 203R1 except for addition of a synchronizing stabilizing coil which greatly improves the stability of the horizontal oscillator.....\$2.25
- #206R1 **Width Control.** Powdered iron core, intended for operation with the RCA 217T1 horizontal output transformer and the 205D1 deflection yoke. ....\$1.00
- #207R1 **Horizontal Linearity Control.** Variable inductor designed for adjusting the horizontal linearity of the picture on such kinescopes as the 10BP4 and the 12LP4. Has powdered iron core. ....\$1.20

### TRANSFORMERS

- #201T6 **Power Transformer.** For use in 30-tube TV receivers requiring rectified current of 295 ma. at voltage of approx. 385 volts.....\$26.00
- #201T7 **For 24-Tube Receivers** ..... \$21.00
- #201T8 **For 21-Tube Receivers** .....\$19.00



- #201T9 **For 27-Tube Receivers**.....\$21.00
- #201T10 **For 27-Tube Receivers**.....\$21.00
- #204T1 **Horizontal Output Transformer.** Moisture-resistant. For deflection circuits with 50° mag. deflection kinescopes using RCA 201D1 or 201D2 .....\$20.00



- #204T3 **Horizontal Output Transformer.** Powdered iron core. For use where electro-magnetic deflection kinescopes with RCA 201D1 yokes are employed. ....\$12.00
- #204T9 **Vertical Output Transformer.** Quiet operation. For use with RCA 201D1 or 201D2 where kinescopes require 50° magnetic deflection .....\$4.50
- #208T1 **Horizontal Blocking-Oscillator Transformer.** Powdered iron core. For use where electro-magnetic deflection kinescopes with RCA 201D1 yokes are employed.....\$3.90
- #208T3 **Horizontal Blocking-Oscillator Transformer.** Similar to 208T1 except that bracket mounting is used in place of potted can construction .....\$2.75
- #208T8 **Horizontal Sync-Discriminator Transformer.** Provides automatic horiz sweep freq control. Couples horiz-sweep oscillator to horiz-sync discriminator .....\$2.30
- #208T9 **Vertical Blocking-Oscillator Transformer.** Generates 60 cps pulses required to drive the grids of horizontal discharge tubes....\$2.50



- #211T1 **Horizontal Output Transformer.** For use with RCA 201D1 and directly-viewed kinescopes requiring 50° magnetic deflection using typical circuits.\$5.60
- #211T2 **Horizontal Output Transformer.** Designed for use in recommended circuits employing projection kinescope RCA 5TP4. Powdered iron core.....\$19.00

TRANSFORMERS Continued on page K-12

All prices in effect 4/1/50.

FOR COMPLETE INFORMATION ON  
RCA TELEVISION PARTS, ASK YOUR  
RCA DISTRIBUTOR FOR FORM 3F602R.

All prices shown are  
suggested list prices.





# RCA ELECTRONIC COMPONENTS

## TELEVISION PARTS

### TRANSFORMERS (Continued)

#211T3 **Horizontal - Deflection - Output and HV Transformer.** Designed for use with the RCA 201D1 Deflecting Yoke, RCA 201R1 width control, in magnetic deflection circuits employing the 10BP4.....\$5.60

#211T5 **Horizontal - Deflection - Output and HV Transformer.** Designed for use with the RCA 201D1 or 201D12 deflecting yoke, the RCA 201R4 width control, the RCA 201R5 horizontal linearity control and with magnetically deflected kinescopes such as the RCA 16AP4 .....\$9.50



#217T1 **Horizontal - Deflection - Output and HI-Voltage Transformer.** Designed for use in pulse operated power supplies of TV receivers with no load kinescope anode potentials up to 12 KV. Use with either the 10BP4 or 121P4 tubes.....\$5.60

### YOKES

#201D1 **Deflection Yoke.** Designed for use with direct viewing kinescopes such as the 7DP4 and 10BP4.....\$7.50

#201D2 **Deflection Yoke.** For use with projection kinescopes requiring 50° magnetic deflection such as RCA 5TP4.....\$13.00



#201D3 **Deflection Yoke.** For use with directly-viewed kinescope requiring 50° magnetic deflection such as RCA 7DP4 and 10BP4.....\$14.90

#205D1 **Deflection Yoke.** Magnetic deflecting yoke designed for use with kinescopes having neck diameters of 1 7/8" and deflecting angles up to about 60°. Especially designed for such kinescopes as the 10BP4 and 12LP4..\$7.50

### COILS

#202D1 **Focusing Coil.** For magnetically focused kinescopes with deflection angles up to 50°, such as 10BP4. Utilizes large conductor size for long life.....\$7.50

#202D2 **Focusing Coil.** An electromagnetic focusing coil especially designed for use with the RCA 16AP4 kinescope or other kinescopes requiring an external magnetic field for focusing the electron beam on the screen .....\$11.00



#204L1 **Filament Choke.** Eliminates undesirable RF currents from filament circuit. Consists of self-supported 16-turn coil on 1/4" inside diameter .....\$0.20

#204X1 **Television I-F and Video Coil Kit.** Contains all the coils for building a high quality receiver. 15 individual items.....\$19.50

### MISCELLANEOUS

#203D1 **Ion-Trap Magnet. (Coil Type).** Required for RCA 7BP4 and 10BP4. Eliminates ion spot on kinescope screen.....\$6.50

#203D3 **Ion-Trap Magnet.** Designed for use with kinescopes which incorporate ion-trap guns having a neck diameter of 1 3/8" to 1 1/2", and operate with anode potentials of 7 to 14 KV. It is particularly useful with RCA 10BP4 or 16AP4.....\$2.10



All prices in effect 4/1/50.

FOR COMPLETE INFORMATION ON  
RCA TELEVISION PARTS, ASK YOUR  
RCA DISTRIBUTOR FOR FORM 3F602R.

All prices shown are  
suggested list prices.



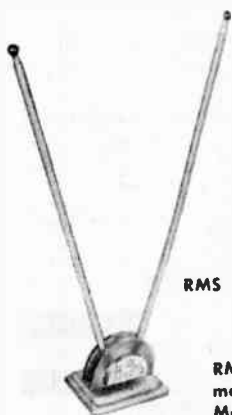
Acclaim for the RMS Pre-amplifier has forced our production rates up . . . enabling us to give you a lower cost Booster that's superior in every respect. All metal cabinet in neutral hammertone finish to blend with all furniture.

**Newly engineered — newly priced**

## RMS TELEVISION PREAMPLIFIER SP-5

- provides an average gain of 6 to 10 times—over the entire television range.
  - Individually shielded input, output and power sections with entire unit shielded against outside and television receiver interference.
  - efficient placement of components permits full use of tuning circuits with no loss in leads.
  - tuned input and output iron-cores assure maximum resonance at the desired frequency.
  - isolation-type transformer eliminates shock hazard from the chassis.
  - positive gear-driven tuning mechanism.
  - coils wound with flat ribbon for maximum efficiency at high frequencies.
  - can be peaked for operating channels without taking chassis out of cabinet.
  - broad frequency response to cover video and audio.
  - single knob, simplified tuning. Pilot light indicates Pre-amplifier is in use
- Shipping wt. — master carton of 6 . . . . 23 lbs.

### A COMPLETE LINE OF ANTENNAS for indoor, window and rooftop!

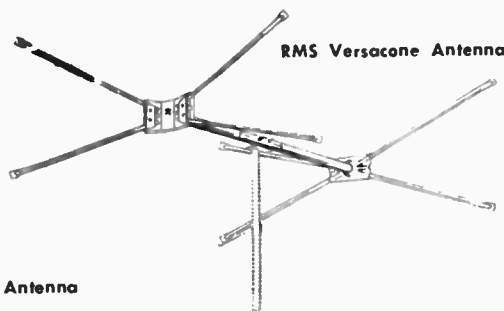


RMS Indoor Antenna

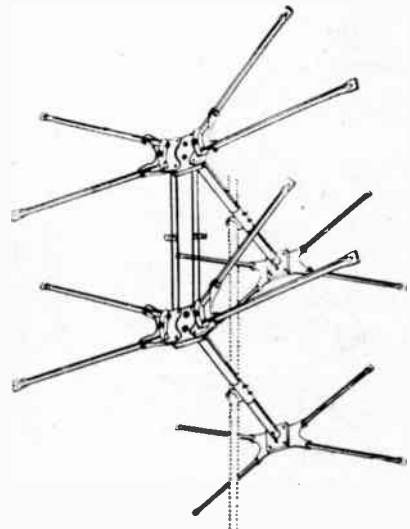
RMS Jackknife Antennas — feature top quality as the nation's most popular conical, all-channel, preassembled antenna. Model DL-20 illustrated.

RMS Versacone Antennas—conical, all-channel antennas featuring versatility plus superior performance. Simple shifting elements in unique preassembled insulator and reflector plates, permits 4 front, 4 back or 6 front, 2 back arrangement! Model V-1 illustrated.

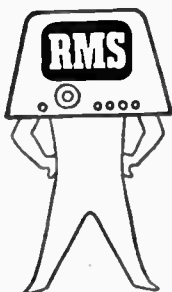
RMS Indoor Antennas — combine performance, durability and styling. Model T-2 (illustrated) — 2-section, telescope. Model T-4 — 4 section telescope variation affording closer and more accurate tuning to desired channels.



RMS Versacone Antenna



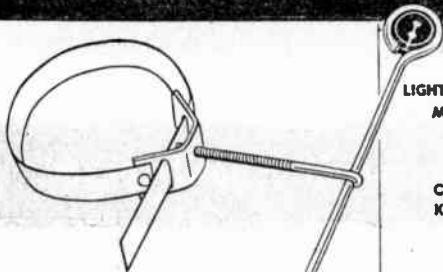
RMS Jackknife Antenna



**Radio Merchandise Sales Inc.**

**New York 59, N. Y.**

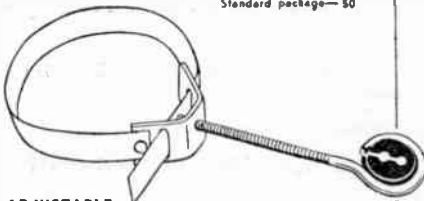
# RMS Television Accessories



## ADJUSTABLE MAST STAND-OFF WITH DUAL INSULATORS

Model No.	Description
DMC-3T	3 1/2" Double Twin Lead
DMC-3C	3 1/2" Double Co-Az
DMC-7T	7" Double Twin Lead
DMC-7C	7" Double Co-Az

Standard package—50



## ADJUSTABLE MAST STAND-OFF INSULATORS

Model No.	Description	Standard Qty.
MC-3T	3 1/2" Twin Lead	100
MC-3C	3 1/2" Co-Az	100
MC-7T	7" Twin Lead	100
MC-7C	7" Co-Az	100



## WOOD SCREW-EYE WITH DUAL INSULATORS

Model No.	Description
DW35-T	3 1/2" Double Twin Lead
DW35-C	3 1/2" Double Co-Az
DW70-T	7" Double Twin Lead
DW70-C	7" Double Co-Az

Standard package—50



BRIDLE RING  
MODEL GC-1



DRIVE RING  
MODEL CC-2

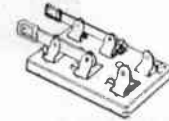


HEAVY DUTY GUY HOOK  
MODEL GH-3

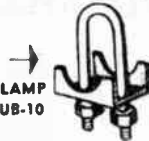
LIGHTING ARRESTOR  
MODEL LA-1



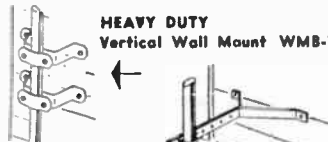
COMBINATION  
KNIFE SWITCH  
KN-2



U-BOLT CLAMP  
MODEL UB-10



HEAVY DUTY  
Vertical Wall Mount WMB-1



ADJUSTABLE VERTICAL  
WALL BRACKETS

AWM-180

8" to 18"



BASE MOUNT MODEL B-1

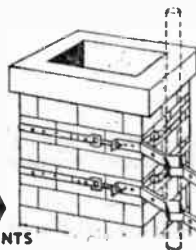


CEMENT DRIVE-IN INSULATOR

SN-3T Twin Lead  
SN-3C Coaxial Cable



CHIMNEY  
MAST MOUNTS  
MODEL SCM-100



## DRIVE-IN INSULATORS

DRT-1	Twin Lead	Standard package—100.
DRC-2	Co-Az	



## MACHINE SCREW EYE INSULATORS

Model No.	Description	Standard Qty.
M35-T	3 1/2" Twin Lead	100
M35-C	3 1/2" Co-Az	100
M70-T	7" Twin Lead	100
M70-C	7" Co-Az	100



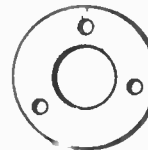
## STAND-OFF INSULATORS WOOD SCREW-EYE INSULATORS

Model No.	Description	Standard Qty.
W35-T	3 1/2" Twin Lead	100
W35-C	3 1/2" Co-Az	100
W70-T	7" Twin Lead	100
W70-C	7" Co-Az	100
W120-T	12" Twin Lead	50
W120-C	12" Co-Az	50



## GUY WIRE TURNBUCKLES

Model No.	Size
GTB 1	2 1/2" spread
GTB 2	3 1/2" spread



## FLOATING GUY WIRE RINGS

MODELS	I.D.
GWR-1	1" I.D.
GWR-2	1 1/4" I.D.
GWR-3	1 3/4" I.D.



## 300 OHM CONNECTOR CON-300

= 6—12" round

= 3—10" round



RMS  
*Tru-Scan*  
GLARE FILTERS

= 1— 8 x 11, 10"

You are invited to write for catalog illustrating complete line of outstanding RMS antennas and associated accessories.

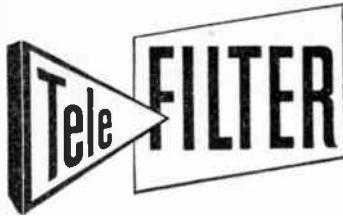
Radio Merchandise Sales Inc.

New York 59, N. Y.

# The **HOT** TV LINE



## Quality TELEVISION FILTERS in Black or Blue Screen



AND



### Pre-Cut to Fit Most Popular Sets . . .

**TELEFILTER**—a top quality product—made of optical quality plexiglass—.080 thick (7" size .060)—bevelled edges—mounting tape attached—wrapped in tissue and packaged.

**TELECLEAR**—an economy filter—made of lumarith—.020 thick—mounting tape attached—wrapped in tissue and packaged.

### BLACK SCREEN

Television's newest development, Black Screen. You can't paint a picture on white paper with white paint—yet that's exactly what the ordinary TV picture attempts. With Telefilter or Teleclear Black Screen, your picture is sharper, clearer, with greater contrast and less eye strain. No tint is visible.

### BLUE SCREEN

The original easy-on-the-eyes screen, Blue Screen. Pictures are sharper, clearer, with greater contrast. Slight blue tint is visible.

*The sizes listed will fit the majority of sets including the newest square-tube models. All come pre-cut.*

**APPEALING PACKAGE:** With each order of 24 TELECLEAR filters or 12 TELEFILTERS, an attractive, 3-color counter display box is included. Filters come individually wrapped in tissue and in a 3-color die-cut envelope for point-of-sale selling.

EXPLANATION OF MODEL NUMBERS	
First number . . .	S—Square corners R—Round corners (Circle with top and bottom cut off.)
First letter . . .	Size of picture tube
Last letter . . .	Key to filter size

IN ORDERING	
Specify TELECLEAR or TELEFILTER and Black Screen or Blue Screen.	

RESALE PRICE LIST				FILTER SIZES				
Model	LIST Telefilter	RESALE Telefilter	LIST Teleclear	RESALE Teleclear	Model	Size	Model	Size
7"	\$2.95	\$1.77	\$ .95	\$ .57	S-7A	5 $\frac{3}{4}$ " x 6 $\frac{1}{2}$ "	S-12B	9 $\frac{1}{4}$ " x 11 $\frac{3}{4}$ "
10"	4.95	2.97	1.25	.75	S-10A	7 $\frac{3}{4}$ " x 10"	S-12C	9 $\frac{3}{4}$ " x 12 $\frac{1}{2}$ "
12"	5.95	3.57	1.75	1.05	R-10B	8" x 9 $\frac{1}{4}$ "	R-12C	9 $\frac{3}{4}$ " x 12 $\frac{1}{2}$ "
15"	6.95	4.17	3.25	1.95	S-10C	8 $\frac{1}{4}$ " x 10 $\frac{3}{8}$ "	R-12D	10" x 11 $\frac{3}{8}$ "
16"	8.95	5.37	3.95	2.37	S-10D	8 $\frac{3}{4}$ " x 10 $\frac{3}{8}$ "	S-12E	9" x 11 $\frac{1}{2}$ "
19"	9.95	5.97	5.95	3.57	S-10E	8" x 9 $\frac{3}{4}$ "	R-15A	11 $\frac{1}{4}$ " x 14 $\frac{3}{8}$ "
					R-10F	8" x 9 $\frac{1}{2}$ "	S-16	11 $\frac{1}{2}$ " x 15"
					R-10G	7 $\frac{3}{4}$ " x 9 $\frac{7}{8}$ "	R-16A	12 $\frac{1}{2}$ " x 16 $\frac{1}{8}$ "
					R-12	8 $\frac{1}{8}$ " x 10 $\frac{1}{8}$ "	S-16A	12 $\frac{7}{8}$ " x 16 $\frac{1}{8}$ "
					R-12A	8 $\frac{1}{2}$ " x 11 $\frac{3}{8}$ "	R-16B	12" x 15"
							R-19	14" x 19 $\frac{3}{8}$ "

*Write for FREE listing of Set Model Numbers and Pre-Cut Filters that fit.*

# The HOUSE OF TELEVISION Inc.

# The **HOT** TV LINE



## HOT CLAMPS

That Make TV Installation Easier, Quicker, Permanent, Profitable!

COMPARE THESE MANY ADVANTAGES!

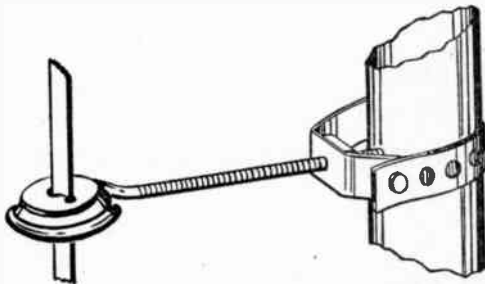
Fits pipe from  $\frac{3}{8}$ " to  $3\frac{1}{4}$ "  
Positive Contact  
No Pipe Cleaning  
Low Cost

Generous Discounts  
Made Simply, Easy to Handle  
No Soldering  
Guaranteed

Installed within 60 seconds  
 Foolproof—No vibration  
 Adjustable—Universal  
 Immediate Delivery

Similar clamps specified by telephone companies and U. S. Signal Corps since 1904.

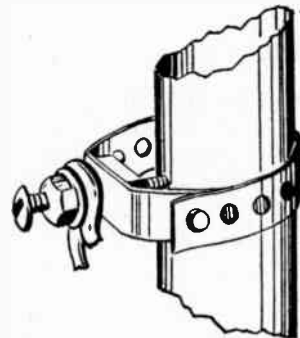
### MAST STAND OFF



HOT Ground Clamp also acts as a mast stand off. Model G-2, as furnished without screw, can be used with any 10/32 machine screw eye.

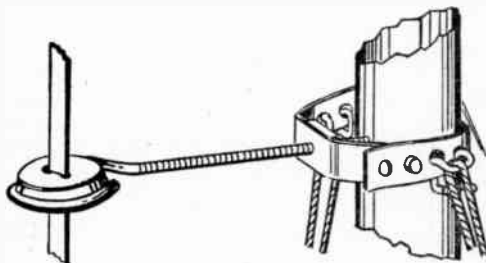
### GROUND CLAMP

A Ground Clamp for TV installation with an intermediate tightening screw that draws up slack as it chafes the pipe. It cuts through rust and dirt and contracts band around pipe or ground rod at the same time. Made of steel heavily cadmium plated, the Ground Clamp band around the pipe is not necessarily a part of the circuit but acts as support for the screw.



Model G-1 or G-3

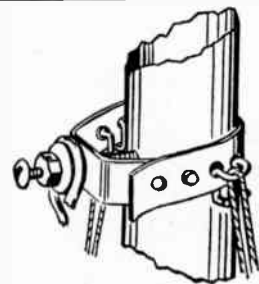
### GUY WIRE CLAMP & MAST STAND OFF



Model W-2, as furnished without screw, can be used with any 10/32 machine screw eye and it becomes a Guy Wire Clamp and Mast Stand Off.

### GUY WIRE CLAMP

THE HOUSE OF TELEVISION new Guy Wire Clamp is also a Ground Clamp. Assuring you dependable service with a minimum of installation effort, it permits Guy Wire to be attached to any part of the mast, yet making it impossible for the Clamp to slip . . . . . Model W-1.



### HOT GROUND ROD

Extra strong steel and copper plated,  $\frac{3}{8}$ " in diameter, the HOT Ground Rod is complete with clamp for ground wire with one end pointed.

	4 ft.	6 ft.
List	\$.98	\$1.55
Resale	.50	.88
St'nd'd		
Pkg.	25	25
Weight	41 lbs.	62 lbs.



### RESALE PRICES

Model	Description	Pipe Size OD	PER THOUSAND		Wt.
			List	Resale	
G-1	Complete with tightening screw, lock nut and washer	$\frac{3}{8}$ " to $1\frac{1}{4}$ "	\$120.00	\$72.00	40 lbs.
G-2	Same as G-1 less tightening screw, lock nut and washer	$\frac{3}{8}$ " to $1\frac{1}{4}$ "	108.38	64.80	30 lbs.
G-3	Complete with tightening screw, lock nut and washer	$\frac{3}{8}$ " to $3\frac{1}{4}$ "	156.87	94.00	50 lbs.
W-1	Complete with 3 guy wire clips, tightening screw, lock nut and washer	$\frac{3}{8}$ " to $2\frac{1}{2}$ "	175.00	105.00	65 lbs.
W-2	Same as W-1 less tightening screw, lock nut and washer	$\frac{3}{8}$ " to $2\frac{1}{2}$ "	168.00	97.80	55 lbs.

NOTE: Screw eye not furnished.  
PACKING: Standard package, 100 — Standard carton, 1,000.

# The HOUSE OF TELEVISION Inc.

# the **HOT** TV LINE



## HOT WAVE TRAP

A Wave Trap especially designed to eliminate the two types of principal interference in TV reception—FM image interference and amateur harmonic interference.

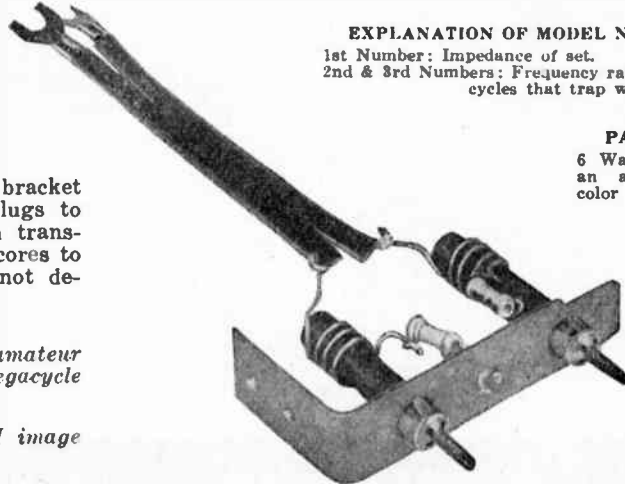
Installation is simple. Universal mounting bracket attaches to cabinet or chassis. Attach lugs to antenna input terminals in parallel with transmission line and tune the powdered iron cores to eliminate interfering frequencies. Does not decrease TV signal received by set.

**MODEL NO. 300-10-30:** Eliminates amateur harmonic interference from 14 and 28 megacycle bands.

**MODEL NO. 300-80-110:** Eliminates FM image interference.

**EXPLANATION OF MODEL NUMBERS**  
1st Number: Impedance of set.  
2nd & 3rd Numbers: Frequency range in megacycles that trap will eliminate.

**PACKAGE:**  
6 Wave Traps in an attractive 3-color counter box.



Model	List	Resale	Standard Pkg.	Wt.
300-10-30	\$2.75	\$1.65	6	½ lb.
300-80-110	2.75	1.65	6	½ lb.

## ANTENNA MATCHING TRANSFORMER



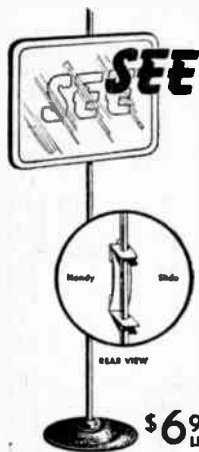
**PACKAGE:**  
6 Antenna Matching Transformers in an attractive 3-color counter box.

In many cases, in high noise areas, it is desirable to install a 70 ohm coaxial transmission line to a 300 ohm set. Since a match of impedance is essential to minimize noise pickup, The HOUSE OF TELEVISION engineers have designed a Matching Transformer to match the transmission line to the set . . . with no loss.

Easy to install . . . merely attach to antenna terminals of set in series with transmission line. Housed in aluminum can.

Model: 300-70	List: \$2.25	Resale: \$1.35	Standard Pkg.: 6	Wt.: ½ lb.
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## SEE FOR YOURSELF THE STEPS YOU'LL SAVE WITH TELEMIRROR



Save hundreds of those back-and-forth steps, neck stretching and other acrobatics every time you service a TV set. You'll save time and money by using a TELEMIRROR for it gives you a non-distorted reflection exactly where you want it. Carry a TELEMIRROR on every call . . . keep one in your shop too.

Mirror is 8" x 10" with nickel plated steel frame, durable, made of plate glass—no distortion—lightweight, portable, quick and easy to adjust, stands 44" high, broad non-tip base, rust-proof plating, back of mirror and base is black crackle finish, rod is bright nickel plate. Now one man is all it takes to adjust your TV picture . . . with a TELEMIRROR!



Model: TM-1	List: \$6.95	Resale: \$4.17	Standard Pkg.: 6	Wt. 53 lbs.
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The HOUSE OF TELEVISION Inc.

# The **HOT** TV LINE



## HOT WIRE

### Aluminum GROUND WIRE

The National Electrical Code states that all TV antenna masts must be grounded with copper or aluminum wire. Selecting the least expensive of the two, this HOT Aluminum Ground Wire is soft, light-weight, flexible and very easy to handle. Weather resistant and rust proof, it is an excellent conductor, reduces interference as well as the chance of lightning striking the antenna.

Strands	Wire Size	Per Thousand Feet		Standard Pkg.	Wt.
		List	Resale		
1	12	\$10.40	\$ 6.25	6-1,000 ft. Reels	45 lbs.
1	12	11.10	6.65	12- 500 ft. Reels	45 lbs.
1	12	11.80	7.10	60- 100 ft. Coils	45 lbs.
1	8	20.80	12.50	3-1,000 ft. Reels	50 lbs.
1	8	21.65	13.00	6- 500 ft. Reels	50 lbs.
1	8	22.10	13.25	30- 100 ft. Coils	45 lbs.
1	6	41.50	25.00	3-1,000 ft. Coils	100 lbs.
1	6	42.40	25.40	6- 500 ft. Coils	100 lbs.
1	6	43.40	26.00	30- 100 ft. Coils	100 lbs.

### Galvanized GUY WIRE

Made of Steel, sturdy and dependable, this HOT Guy Wire is flexible, easy to handle and heavily galvanized. High tensile strength.

Strands	Wire Size	Per Thousand Feet		Standard Pkg.	Wt.
		List	Resale		
4	20	\$ 9.75	\$ 5.85	10-1,000 ft. Reels	160 lbs.
4	20	10.90	6.54	60- 100 ft. Coils	80 lbs.
6	20	13.75	8.25	10-1,000 ft. Reels	220 lbs.
6	20	14.85	8.91	42- 100 ft. Coils	90 lbs.
6	19	17.65	10.59	6-1,000 ft. Reels	170 lbs.
6	19	17.90	10.75	30- 100 ft. Coils	80 lbs.
6	18	23.45	14.07	6-1,000 ft. Reels	245 lbs.
6	18	24.30	14.60	24- 100 ft. Coils	90 lbs.

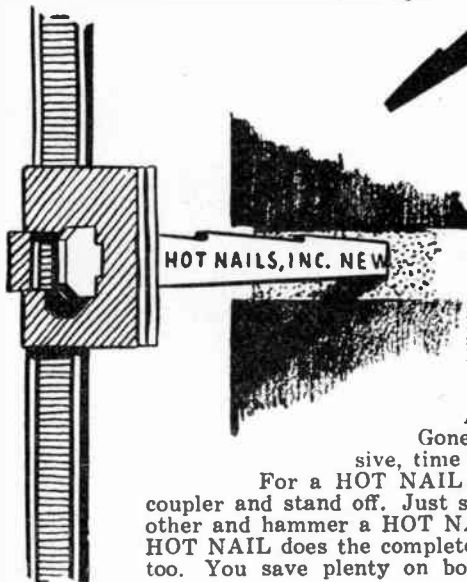
# The HOUSE OF TELEVISION Inc.

# HOT nails

## HOT STUFF!

Handle only for PROFITS!

Saves dollars on TV installation...  
Made of specially hardened steel  
and cadmium plated... Weather  
resistant... Low cost!



TV'S Only Universal Stand off! No longer must you pound out or drill holes in a brick wall, drive in lead plugs and screw in stand offs! Now, just hammer HOT NAILS in the wall... any kind of wall... for HOT NAILS easily pierce brick, mortar between bricks, wood, even most concrete. Complete with polyethylene insulator, it fits all types of transmission lines—light and heavy 300 ohm—50 and 72 ohm coax.

Ideal for Attaching Wall Mounts! Save time and money; just hammer in HOT NAILS to attach a Wall Mount.

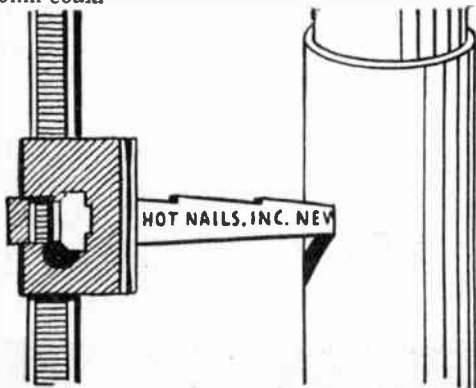
### A Mast Coupler Too!

Gone are the days of expensive, time wasting mast couplers. For a HOT NAIL is a combination mast coupler and stand off. Just slip one mast inside the other and hammer a HOT NAIL through both. One HOT NAIL does the complete job... and in a jiffy too. You save plenty on both material and labor.

Dollars Saved on TV Installation Mean More Profits to You!

Write TODAY for FREE Sample!

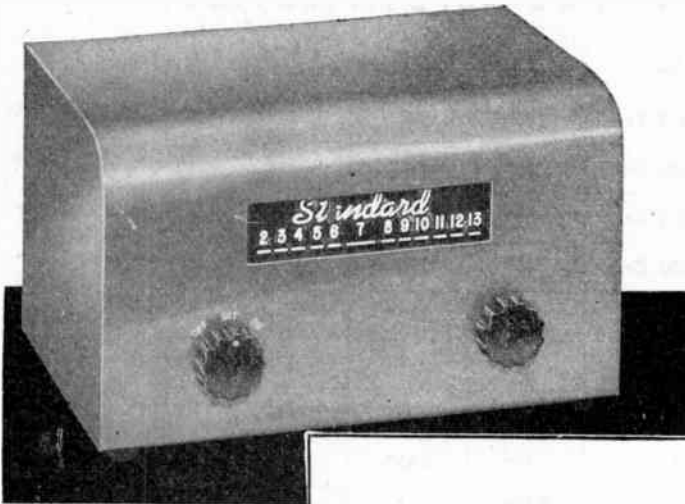
List: \$5.00 per 100 Resale: \$3.00 per 100 Standard pkg.: 10 boxes of 100's Wt. 32 lbs.



*Standard* COIL PRODUCTS CO., INC.

*Present  
the Standard Twins*

**"THE STANDARD BOOSTER" . . . "THE STANDARD TUNER"**



"THE STANDARD BOOSTER" A new high gain TV pre-amplifier that assures your customers studio-clear reception. This means plus profits for you by boosting your TV set sales in fringe areas. "The Standard Booster" features 2-knob control . . . continuous tuning, eliminates a switch from high to low channels . . . printed circuit . . . trouble-free operation . . . low noise factor.

**Tomorrow's Market... Here Today**

**FOR TWO GREAT PRODUCTS**

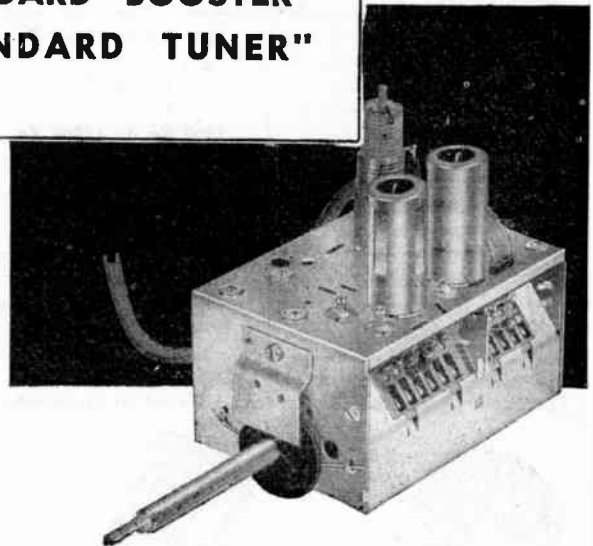
**"THE STANDARD BOOSTER"**

**"THE STANDARD TUNER"**

**"Over 1,000,000  
Standard Tuners  
Now In Use"**



"THE STANDARD TUNER" is nationally recognized as the accepted replacement tuner by the trade. Incorporated as original equipment in over a million TV sets produced by the majority of the outstanding manufacturers. This is the tuner for you. It gives higher sensitivity . . . quick interchanging of channel inductors . . . adaptable to U.H.F. See your jobber for details.



Build profits and expand your TV service business with these two great "Standard" products.

*Standard* COIL PRODUCTS CO., INC.

CHICAGO • LOS ANGELES • BANGOR, MICHIGAN



# PR Precision CRYSTALS

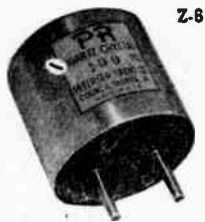


## COMMERCIAL TYPES—SPECIFICATIONS

Type	Frequency Range	Pin Spacing	Pin Diameter	Height Above Pins	Width	Depth	
Z-1 Fundamental	900 Kc. to 12000 Kc.	.486"	.093"	1-3/16"	13/16"	7/16"	
Z-1 Harmonic	12000 Kc. to 30000 Kc.	.486"	.093"	1-3/16"	13/16"	7/16"	
*Z-1A Fundamental	425 Kc. to 12000 Kc.	3/4"	.125"	1 3/8"	1 3/8"	1/2"	
*Z-1A Harmonic	12000 Kc. to 30000 Kc.	3/4"	.125"	1 3/8"	1 3/8"	1/2"	
Z-1B Fundamental	1000 Kc. to 12000 Kc.	3/4"	.125"	1 3/8"	1-3/16"	1/2"	
Z-1B Harmonic	12000 Kc. to 30000 Kc.	3/4"	.125"	1 3/8"	1-3/16"	1/2"	
Z-1D Same as Z-1	Same as Z-1	1/2"	.125"	1-3/16"	13/16"	7/16"	
Z-1E Same as Z-1	Same as Z-1	1/2"	.125"	1 1/4"	1 1/8"	7/16"	
Z-1H Single or dual unit Fundamental	100 Kc. to 5000 Kc.	3-Pin W.E.	.157"	2-1/16"	1-19/32"	1-3/16"	
Z-1K Same as Z-1A except has .157" dia. pins	Same as Z-1A						
Z-1M Fundamental	1000 Kc. to 5000 Kc.	7/8"	Std. Banana	2-3/32"	1-19/32"	3/4"	
†Z-1R Fundamental	175 Kc. to 475 Kc.	1/2"	.093"	1 1/4"	1-3/32"	7/16"	
Z-4 Fundamental	1500 Kc. to 12000 Kc.	3/4"	.125"	.650"	Diameter	.995"	
Z-4 Harmonic	12000 Kc. to 30000 Kc.	3/4"	.125"	.650"	Diameter	.995"	
Z-7 Fundamental	1000 Kc. to 12000 Kc.	3/4"	Std. Banana	1.660"	1.192"	.518"	
Z-8 Fundamental	400 Kc. to 5000 Kc.	3/4"	1/8"	1 3/4"	1-9/16"	1-11/16"	
Z-6 Fundamental	100 Kc. to 325 Kc.	3/4"	1/8"	1 1/2"	Diameter	1-25/32"	
E-1 Fundamental	100 Kc. to 7000 Kc.	Interchangeable with FT-164 and AC-95					
FT-171-B Fundamental	1000 Kc. to 8000 Kc.	3/4"	Std. Banana	2 1/4"	1 1/2"	13/16"	

\* Can be Supplied with Standard Banana Pins.

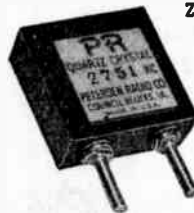
† For Signal Generator Use. Not recommended for Transmitter Freq. Control.



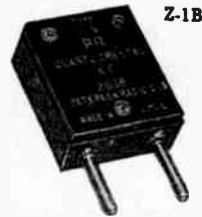
Z-6



Z-1



Z-1A



Z-1B

**PETERSEN RADIO Company, Inc., 2800 W. Broadway, Council Bluffs, Iowa**

# PR Precision CRYSTALS



## AMATEUR—Specifications and Frequencies



### TYPE Z-2

- 160 meter band for VFX-680 Narrow Band FM in Sonar Exciter.
- 1699.2 to 1710 Kc. for 11 meter band.
- 1750 to 1812 Kc. for 10 meter band.
- 1828 and 1844 Kc. These 2 frequencies cover entire 10 meter FM band in Sonar VFX-680.
- 1562.5 to 1687.5 Kc. for 6 meter band.
- 1778 to 1827 Kc. for 2 meter band.
- 3370 to 3403 Kc. for 11 meters.
- 3500 to 4000 Kc. for 80, 40, 20 and 10 meters.
- 6250 to 6750 Kc. for 2 meters.
- 6740 to 6807 Kc. for 11 meters.
- 7000 to 7425 Kc. for 40, 20 and 10 meters.
- 8000 to 8222 Kc. for 2 meters.
- 8334 to 9000 Kc. for 6 meters.
- 9000 to 9250 Kc. for 2 meters.



### TYPE Z-3

- 12000 to 12333 Kc. for 2 meters.
- 12500 to 13500 Kc. for 6 meters.
- 13480 to 13615 Kc. for 11 meters.
- 14000 to 14850 Kc. for 20 and 10 meters.

## CHECK SUPERIORITY OF PR Crystals

### Stability . . .

Drift characteristics of PR Crystals limited to less than 2 cycles per MC per degree. You get low drift, combined with high output, dependable frequency control. X-Ray orientation guarantees uniform cut for maximum low-drift performance.

### Accuracy . . .

Guaranteed accurate within .01 per cent of specified frequency or better. When doubling and quadrupling accuracy is absolutely essential. You KNOW where you are with PRs.

### Power Output . . .

PRs are designed to give maximum power output from the exciter stage when operating at the highest permissible voltages. PR Crystals can "take it."

### Activity . . .

PRs give you high activity. They "come in" instantly on phone . . . key without chirps, even at high bug speeds, without excessive "backing off."

### Unconditional Guarantee . . .

Every PR Precision CRYSTAL is guaranteed unconditionally, by the makers of fine crystals since 1934.

**PETERSEN RADIO Company, Inc., 2800 W. Broadway, Council Bluffs, Iowa**

# PR Precision CRYSTALS



## PRICE LIST SUBJECT TO CHANGE WITHOUT NOTICE

### COMMERCIAL

Type	Frequency Range	Tolerance			Schedule
		.005%	.01%	.02%	
Z-1 Fundamental	900 to 12000 Kc.	\$12.50	\$11.00	\$10.00	A
Z-1 Harmonic	12000 to 20000 Kc.	15.00	12.50	11.00	A
Z-1 Harmonic	20000 to 30000 Kc.	18.00	15.00	13.00	A
Z-1A Fundamental	425 to 900 Kc.	15.00	12.50	11.00	A
Z-1A Fundamental	900 to 12000 Kc.	12.50	11.00	10.00	A
Z-1A Harmonic	12000 to 20000 Kc.	15.00	12.50	11.00	A
Z-1A Harmonic	20000 to 30000 Kc.	18.00	15.00	13.00	A
Z-1B Fundamental	1000 to 12000 Kc.	12.50	11.00	10.00	A
Z-1B Harmonic	12000 to 20000 Kc.	15.00	12.50	11.00	A
Z-1B Harmonic	20000 to 30000 Kc.	18.00	15.00	13.00	A
Z-1D Same as Z-1	Same as Z-1				A
Z-1E Same as Z-1	Same as Z-1				A
Z-1H Fundamental	100 Kc. Standard		(Exact Frequency)	12.00	B
Z-1H Fundamental	101 to 900 Kc.	18.00	15.00	13.00	A
Z-1H Fundamental	901 to 5000 Kc.	15.00	12.50	11.00	A
Z-1H Dual Unit	901 to 5000 Kc.	30.00	27.50	25.00	A
Z-1K Same as Z-1A	Same as Z-1A				A
Z-1M Fundamental	1000 to 5000 Kc.	15.00	12.50	11.00	A
Z-1R Fundamental	175 to 475 Kc.	18.00	15.00	13.00	A
Z-1R Fundamental for Signal Generators	{ 175, 200, 262, 370, 455, 456, 465 Kc. }		6.00		B
Z-1R Fundamental	475 to 1000 Kc.	15.00	12.50	11.00	A
Z-4 Fundamental	Same as Z-1				A
Z-4 Harmonic	Same as Z-1				A
Z-7 Fundamental	Same as Z-1				A
Z-8 Fundamental	400 to 900 Kc.	18.00	15.00	13.00	A
Z-6 Fundamental	100 Kc. Standard		(Exact Frequency)	9.00	B
Z-6 Fundamental	101 to 175 Kc.	18.00	15.00	13.00	A
E-1 Fundamental	100 to 900 Kc.	20.00	19.00	18.00	B
E-1 Fundamental	900 to 7000 Kc.	19.00	18.00	17.00	B
FT-171-B Fundamental	1000 to 8000 Kc.	12.50	11.00	10.00	A

### AIRCRAFT

Type	Frequency	Price	Schedule
Z-1, Z-1A, Z-1B	3105 and 6210 Kc.	\$5.00	C

### MARINE

Type	Transmitter	Receiver	Schedule
Z-1	\$10.00	\$10.00	A
Z-1A	10.00	10.00	A
Z-1B	10.00	10.00	A
Z-1D	10.00	10.00	A
Z-1H	12.50	12.50	A
Z-1H Dual	25.00	25.00	A
Z-1K	12.50	12.50	A
Z-1M	12.50	12.50	A

### AMATEUR

Note: Crystals Within Amateur Bands Supplied INTEGRAL KILOCYCLES Only.

Type	Tolerance	Price	Schedule
Z-2	.01%	\$2.75	B
Z-3	.01%	3.75	B

Crystals for amateur service other than frequencies listed on Catalog Sheet can be supplied as follows:

Type	Range	Tolerances			
		Plus or Minus 1%		Plus or Minus .02%	
		Price	Sched.	Price	Sched.
Z-2, Fundamental	1500 to 10000 Kc.	\$2.75	B	\$10.00	A
Z-3, 3rd Harmonic	10000 to 20000 Kc.	3.75	B	11.00	A

#### NOTICE

Prices on Commercial Crystals are based on quantities of 1 to 10 of the same frequency. For larger quantities write for prices.

Price on crystals below 100 Kc. furnished on request. Tolerance can be guaranteed only when oscillator or circuit diagram is furnished.

To facilitate the handling of your order, please order by type number and indicate permissible tolerance.

PETERSEN RADIO Company, Inc., 2800 W. Broadway, Council Bluffs, Iowa

# Bliley CRYSTALS

 <p><b>SR10</b></p>	<p>CODE NO. E2-E4 5/16" HIGH * 3/4" WIDE 1 1/2" THICK PIN SIZE • PIN SPACE .093" .486"</p>	 <p><b>SR8</b></p>	<p>CODE NO. E7 1 1/4" HIGH * 1 1/8" WIDE 3/8" THICK PIN SIZE • PIN SPACE .093" .486"</p>	 <p><b>CF3</b></p>	<p>CODE NO. E14 1 1/2" HIGH * 1 1/8" WIDE 3/4" THICK PIN SIZE • PIN SPACE .125" .750"</p>
 <p><b>MC9</b></p>	<p>CODE NO. E3-E8-E9-E13-E22 1 1/4" HIGH * 1 3/8" WIDE 7/8" THICK PIN SIZE • PIN SPACE .093" .486"</p>	 <p><b>KV3</b></p>	<p>CODE NO. E10 1 1/2" HIGH * 1 3/8" DIA. PIN SIZE • PIN SPACE .093" .486"</p>	 <p><b>CF6</b></p>	<p>CODE NO. E15 1 1/2" HIGH 1 3/8" WIDE .695" THICK</p>
 <p><b>MC7</b></p>	<p>CODE NO. E5 1 3/4" HIGH * 1 1/4" WIDE 2 1/2" THICK PIN SIZE • PIN SPACE .125" .750"</p>	 <p><b>MS433</b></p>	<p>CODE NO. E11 1 1/2" HIGH * 1 3/4" DIA. PIN SIZE • PIN SPACE .093" .687"</p>	 <p><b>CCO-2A</b></p>	<p>CODE NO. E16 CHASSIS 2 1/4" x 3 1/8" x 3"</p>
 <p><b>SR5</b></p>	<p>CODE NO. E6 1 1/4" HIGH * 1 3/4" WIDE 7/8" THICK PIN SIZE • PIN SPACE .125" .500"</p>	 <p><b>SMC100</b></p>	<p>CODE NO. E12 1 1/2" HIGH 1 1/8" WIDE 1.039" THICK</p>	 <p><b>AX2 AX3</b></p>	<p>CODE NO. E17-E18-E19-E20-E21 1 1/8" HIGH * 1 1/8" WIDE 3/8" THICK PIN SIZE • PIN SPACE .093" .486"</p>

\* NOTE: DIMENSIONS GIVEN EXCLUDE PIN LENGTH.

CODE	SERVICE	TYPE	APPLICATION	TOLERANCE	PRICE	CODE
E2	TV Test	SR10	sound channel markers — submultiples	±.05%	\$ 6.95	E2
E3	TV Test	MC9	intercarrier 4.5 mc	±.02%	\$ 3.95	E3
E4	TV Test	SR10	video submultiples; i-f freqs. 18-27.5 mc	±.05%	\$ 8.50	E4
E5	Ship-to-shore	MC7	radiotelephone 2-3.5 mc	±.02%	\$ 6.00	E5
E6	Ship-to-Shore	SR5	radiotelephone 2-3.5 mc	±.02%	\$ 6.00	E6
E7	Ship-to-Shore	SR8	radiotelephone 2-3.5 mc	±.02%	\$ 6.00	E7
E8	Marker	MC9	signal generator — 5.0 mc	±.02%	\$ 2.80	E8
E9	Marker	MC9	FM i-f alignment — 10.7 mc	±.05%	\$ 3.95	E9
E10	Standard	KV3	reference frequency 100 kc	±.005%	\$ 6.95	E10
E11	Standard	MS433	reference frequency 1000 kc	±.005%	\$17.00	E11
E12	Standard	SMC100	100 kc (exact by ckt. adjust.) 1000 kc	±.05%	\$ 8.75	E12
E13	Diathermy	MC9	13.560 mc — multiplier to 27.12 mc	±.05%	\$ 5.50	E13
E14	Filters	CF3	455 kc — 456 kc — 465 kc	± 5 kc	\$ 5.00	E14
E15	Filters	CF6	455 kc — 456 kc — 465 kc	± 5 kc	\$ 4.50	E15
E16	Amateur	CCO-2A	packaged oscillator for 2-6-10-11 meters		\$ 9.95	E16
E17	Amateur	AX2	1803 — 1822 kc; 1878 — 1897 kc 1903 — 1922 kc; 1978 — 1997 kc	± 1 kc	\$ 3.75	E17
E18	Amateur	AX2	3500 — 3997 kc	± 2 kc	\$ 2.80	E18
E19	Amateur	AX2	7000 — 7425 kc; 8000 — 8222 kc	± 2 kc	\$ 2.80	E19
E20	Amateur	AX2	12.5 — 13.61 mc; 14 — 14.85 mc	± 30 kc	\$ 3.95	E20
E21	Amateur	AX3	24 — 24.33 mc; 25 — 25.5 mc	± 5 kc	\$ 3.95	E21
E22	Amateur	MC9	3.0 mc — 10 mc experimental freqs.	±.05%	\$ 6.95	E22

BULLETIN 41

*Bliley*

UNION STATION BUILDING  
ERIE, PENNSYLVANIA

# FOR EVERY FREQUENCY CONTROL APPLICATION— SPECIFY...



PRODUCED TO YOUR SPECIFICATIONS

BH6	SR5	MC9	TCO-1
<b>FREQUENCY</b> 200—600 kc 1.0 to 100 mc	<b>FREQUENCY</b> 600—15000 kc	<b>FREQUENCY</b> 2500—15000 kc	<b>TEMP. CONTROLLED OVEN FOR BH6 UNIT</b>
<b>DIMENSIONS</b> HIGH WIDE THICK (exc. pins) 25/32" 3/4" 11/32"	<b>DIMENSIONS</b> HIGH WIDE THICK (exc. pins) 1 1/4" 1 9/64" 7/16"	<b>DIMENSIONS</b> HIGH WIDE THICK (exc. pins) 1 11/64" 1 1/16" 7/16"	<b>DIMENSIONS</b> 1 1/4" Diameter 1 1/2" High (exc. pins)
<b>PIN SIZE &amp; PIN SPACE</b> .050" .486"	<b>PIN SIZE &amp; PIN SPACE</b> .125" .500"	<b>PIN SIZE &amp; PIN SPACE</b> .093" .486"	<b>STANDARD OCTAL BASE</b>
<b>AIRBORNE CAATC MILITARY (HC-6 U)</b>	<b>AIRBORNE CAATC MILITARY (CR-1A/AR)</b>	<b>AIRBORNE CAATC MILITARY (FT-243)</b>	<b>MAINTAINS CRYSTAL TEMPERATURE AT 75 C</b>

A COMPLETE LINE OF CRYSTAL UNITS FOR COMMERCIAL AND MILITARY SERVICE IS DESCRIBED IN OUR GENERAL CATALOG. REQUEST COPY ON YOUR LETTERHEAD.

A NEW HIGH STABILITY FREQUENCY STANDARD FOR PRECISION REFERENCE AT 100 kc. THE RIGHT COMBINATION AND BALANCE OF CIRCUITRY UTILIZING A SPECIAL BLILEY CRYSTAL UNIT AND TEMPERATURE CONTROL OVEN. AN OUTSTANDING INSTRUMENT WITH EXCEPTIONAL QUALIFICATIONS. WRITE FOR BULLETIN 40.



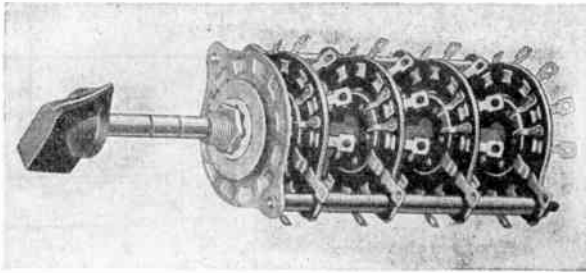
BCS-1A  
FREQUENCY  
STANDARD

- ULTRASONICS:**  
Quartz blanks produced to customer specifications for ultrasonic application or research. Material carefully processed to individual requirements.
- DELAY LINES:**  
Fused quartz delay lines custom-built to specifications.
- PACKAGED OSCILLATORS:**  
Crystal oscillator sub-assemblies designed and produced for commercial VHF equipment.

**Bliley ELECTRIC COMPANY**  
UNION STATION BUILDING ERIE, PENNSYLVANIA



# MALLORY ROTARY SWITCHES



## Multi-Section Rotary Switches

**APPLICATION**—Ideally suited for test equipment, meter switching, and low current switching in industrial applications, including machine tool equipment. Also miscellaneous electronic devices, such as medical equipment, navigation instruments, and radar.

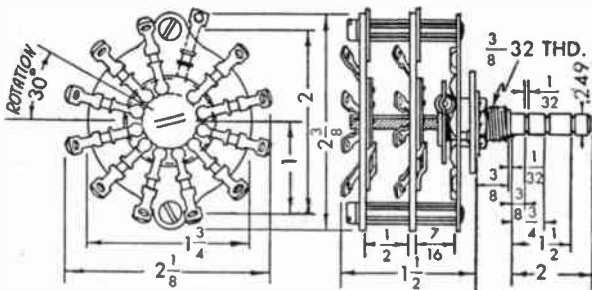
**DESCRIPTION**—All contacting members are silver plated, except rotor contact slugs, which are solid silver. This insures low contact resistance. The high lift of the contact springs provides a wiping and self-cleaning action to insure good electrical contact. The index spring, made of durable phosphor-bronze reinforced with web, prevents fracture failure and insures long-life operation.

An adjustable stop feature permits selection of the desired number of positions for extremely flexible use. The insulation used in all sections is high-grade phenolic resin. All switches supplied with  $\frac{3}{8}$ " diameter,  $\frac{3}{8}$ " long brass bushing, and 2" long shaft, grooved for easy cutting at popular lengths.

All switches have  $\frac{1}{2}$ " spacing between sections, excepting the three and four-section, which have 1" spacing. If closer spacing is required between sections, the switch can be dis-assembled and spacers cut to proper length.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, and one No. 227 lock washer furnished with each switch. See Miscellaneous Items section for Dial Plates.

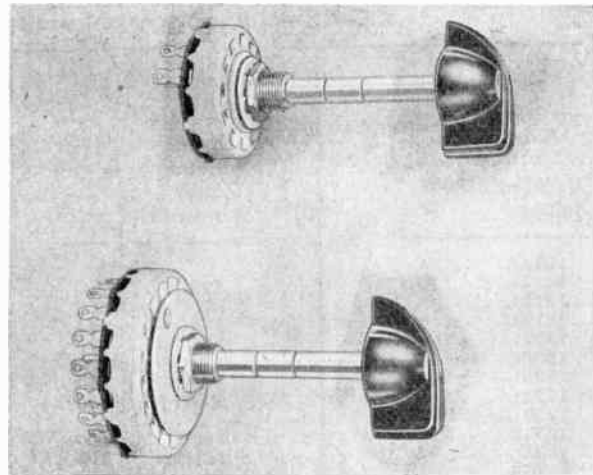
**PACKAGING**—One switch and accessories per display carton.



Shorting Type Catalog No.	Non-Shorting Type Cat. No.	No. of Circuits per Section or Gang	Total No. of Circuits per Switch	No. of Positions	No. of Sections or Gangs per Switch
1211L	1311L	1	1	2 to 11	1
1215L*	1315L*	2	2	2 to 5	1
1213L*	1313L*	3	3	2 to 3	1
1212L*	1312L*	4	4	2 to 2	1
1221L	1321L	1	2	2 to 11	2
1225L*	1325L*	2	4	2 to 5	2
1223L*	1323L*	3	6	2 to 3	2
1222L*	1322L*	4	8	2 to 2	2
1236L*†		1	3	2 to 6	3
1231L	1331L	1	3	2 to 11	3
1235L*	1335L*	2	6	2 to 5	3
1246L*†		1	4	2 to 6	4
1241L	1341L	1	4	2 to 11	4
1245L*	1345L*	2	8	2 to 5	4
1251L	1351L	1	5	2 to 11	5
1256L	1356L	2	10	2 to 6	5
1261L	1361L	1	6	2 to 11	6
1266L	1366L	2	12	2 to 6	6

\*These switches are provided with an "off" position which is in addition to the number of positions listed in the fifth column.

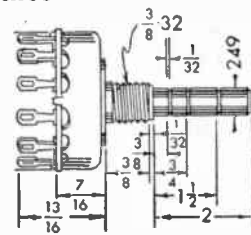
†Will be discontinued when present stocks are exhausted.



## Single Section Rotary Switches

**APPLICATION**—For use in small receivers as tone controls, band selector and antennae switching; also ideal for meter switching in test equipment and many other electronic devices where space is at a premium.

**DESCRIPTION**—Available in single section only, and in two sizes:  $1\frac{1}{8}$ " diameter, 30° indexing, and  $1\frac{1}{16}$ " diameter, 20° indexing. All combinations made in both shorting and positive non-shorting action. The  $1\frac{1}{16}$ " base switch is available with the adjustable stop feature. High quality phenolic resin insulation is employed. All switches supplied with  $\frac{3}{8}$ " diameter,  $\frac{3}{8}$ " long brass bushing and 2" long shaft grooved for easy cutting at popular lengths.



**3100J-3200J SERIES**

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, and one No. 227 lock washer furnished with each switch. See Miscellaneous Items section for Dial Plates.

**PACKAGING**—One switch and accessories per display carton.

Shorting Type Catalog No.	Non-Shorting Type Cat. No.	Number of Circuits	Number of Positions	Diameter of Base	Adjustable Stop
3115J	3215J	1	5	1 1/8"	No
3112J	3212J	1	12	1 1/8"	No
3122J	3222J	2	2	1 1/8"	No
3123J	3223J	2	3	1 1/8"	No
3126J	3226J	2	6	1 1/8"	No
3134J	3234J	3	4	1 1/8"	No
3142J	*3242J	4	2	1 1/8"	No
3143J	3243J	4	3	1 1/8"	No
‡3117J	3217J	1	2 to 17	1 1/16"	Yes
3129J	3229J	2	2 to 9	1 1/16"	Yes
3136J	3236J	3	2 to 6	1 1/16"	Yes
3163J	‡3263J	6	2 to 3	1 1/16"	Yes

\*Replaces No. 2742.

‡Replaces No. 2762 by using adjustable stop.

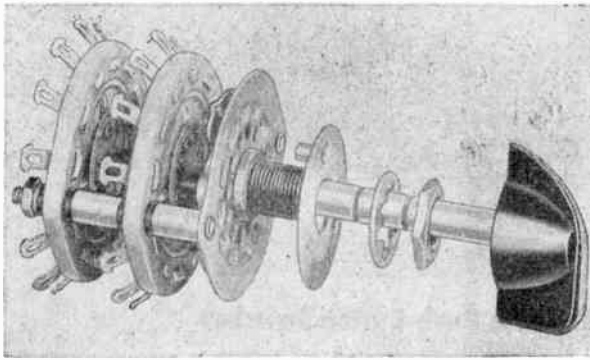
†Replaces No. 150J by using adjustable stop.



## UNIVERSAL MOUNTING BRACKET-RB254

Mallory Page 2 (See Mallory Page 1 for List Prices)

# MALLORY SELECTOR, TAP AND LEVER ACTION SWITCHES



## Ceramic Section Selector Switches

**APPLICATION**—These switches are ideal for highly efficient critical radio frequency circuit applications. Suitable for radio receivers and low-power transmitter circuits. They find widespread use in laboratories, by manufacturers of transmitters, receivers, test equipment and other electronic apparatus, and by experimenters and amateurs.

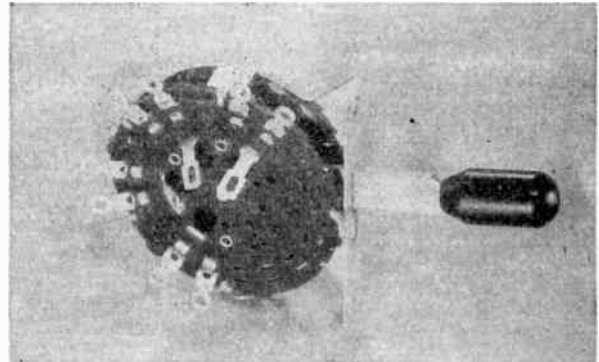
**DESCRIPTION**—Ceramic insulation minimizes RF losses and retards moisture absorption. Indexing mechanism is the "hill-and-valley" type providing a definite "snap" indexing action. An adjustable stop feature is designed into the index assembly to permit a choice of 2 to 11 positions. All current-carrying parts are heavily silver-plated. The contacts are of the double-wiping, self-cleaning type, which insures low contact resistance over an extended temperature range. All switches supplied with  $\frac{3}{8}$ " diameter,  $\frac{3}{8}$ " long brass bushing and 2" long shaft grooved for easy cutting at popular lengths. All types non-shorting.

The two-section switch has  $\frac{1}{2}$ " spacing between sections. The three-section switch has 1" spacing.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, and one No. 227 lock washer furnished with each switch.

**PACKAGING**—One switch and accessories per display carton.

Catalog No.	Number of Gangs or Sections	Number of Circuits per Gang or Section	Number of Positions
172C	1	1	2 to 11
173C	1	2	2 to 5
174C	1	3	2 to 3
176C	2	1	2 to 11
177C	2	2	2 to 5
178C	2	3	2 to 3
179C	3	1	2 to 6
180C	3	1	2 to 11
181C	3	2	2 to 5



## Lever Action Switches

**APPLICATION**—These switches are particularly adapted to centralized radio, sound distribution, public address equipment, and intercommunication equipment for school installations of loud-speaker systems and office communication systems.

**DESCRIPTION**—The housing and mounting bracket of these switches are one integral part, which assures rigidity, and the design lends itself to the support of the section, thus preventing warping of the section or distortion in alignment of contacts. A smooth contact surface is guaranteed by the use of the exclusive Mallory "wrap-around" method of securing the terminal through the holes in the phenolic resin section. The phenolic resin is high grade for maximum insulation. The 5000 series have elongated mounting holes in the bracket, spaced from  $2\frac{3}{16}$ " to  $2\frac{3}{8}$ " apart. The 6000 and 7000 series have mounting brackets with round holes spaced  $1\frac{1}{2}$ " apart. Switches may be mounted singly or grouped in multiple mounting with  $\frac{3}{8}$ " between lever arm centers to facilitate conventional rack and panel installations.

**ACCESSORIES**—One knob, two 6-32 bolts and nuts are furnished with each switch.

**PACKAGING**—One switch and accessories per display carton.

### Positive Indexing

Cat. No. Shorting Type	Cat. No. Non-shorting Type	Number of Poles or Circuits	Number of Positions or Contacts
5124	5224	2	4
6142	6242	4	2
6143	6243	4	3

### Spring Return

7122-L	7222-L	2	2
7123-C	7223-C	2	3
7142-L	7242-L	4	2
7143-C	7243-C	4	3
7162-L	7262-L	6	2

**DON'T MISS THE  
MALLORY CONTROL  
DEALS**

Turn to Page 3,  
Mallory Controls,  
for  
Full Information

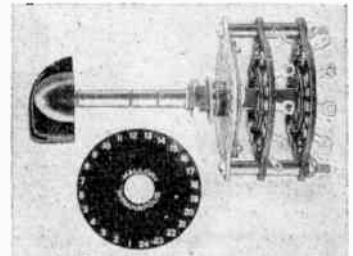
## 24-Point Non-Shorting Tap Switch

**APPLICATION**—This switch is particularly useful in test equipment applications where more than the conventional 12-point switch is required.

**DESCRIPTION**—The single circuit 24-point is accomplished through the use of two sections similar in design to the 1300L series switch. The indexing mechanism has no stops and is capable of continuous rotation with a 15° indexing action between positions. Furnished with  $\frac{3}{8}$ " diameter,  $\frac{3}{8}$ " long brass bushing and 2" long notched shaft.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, one No. 227 lock washer, and one No. 394 Mallory Dial Plate furnished with each switch.

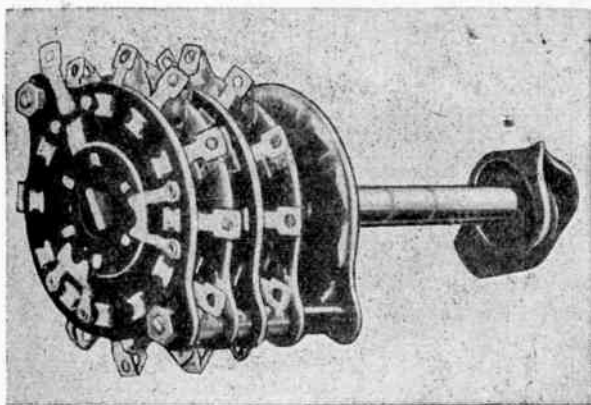
**PACKAGING**—One switch and accessories per display carton. Catalog No. 13124L



Mallory Page 3 (See Mallory Page 1 for List Prices)



# MALLORY CIRCUIT-OPENING, "HAM", AND PUSH-BUTTON SWITCHES



## Circuit-Opening Switch

**APPLICATION**—This switch has found wide application in the construction of test sets, tube checkers, analyzers, and other apparatus where it is desirable to use only one meter.

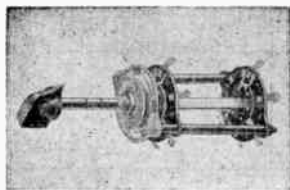
**DESCRIPTION**—This is a special design of the series 1200L switch to provide for wiring of multiplying resistors to the switch, so that the switch not only opens the line but also automatically cuts in the proper multiplying resistor. The switch employs the standard 30° index, and is supplied with 3/8" diameter, 3/4" long brass bushing and a 2" long shaft grooved for easy cutting to proper lengths.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, one No. 227 lock washer, and one No. 382 Mallory etched Dial Plate.

**PACKAGING**—One switch and accessories per display carton.

Catalog No. 1400L

## Two-Section Five-Position "Hamswitch"\*



**APPLICATION**—This switch provides a method of using a single meter to measure current or voltages up to and including 5 circuits of an amateur transmitter.

**DESCRIPTION**—This switch has the basic design of the 1200L series switch. It is of two-section construction with 2 1/4" spacing between sections to permit multiplying resistors to be soldered directly to the switch terminals. High insulating qualities and low loss construction permit a conservative rating of 1000 volts RMS AC or 1500 volts DC. 60° indexing between positions and provided with the adjustable stop feature, giving a maximum of 5 positions. Supplied with 3/8" diameter, 3/4" long brass bushing and 2" long shaft grooved for easy cutting at popular lengths.

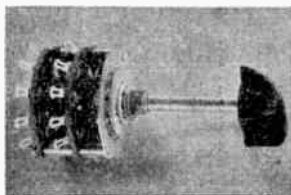
**ACCESSORIES**—One Mallory No. 366 knob, one No. 237 nut and one No. 227 lock washer, furnished with each switch.

Refer to Misc. Items Section for special dial plate No. 487.

**PACKAGING**—One switch and accessories per display carton.

Catalog No. 151L

## Two-Section Two-Circuit Six-Position "Hamswitch"



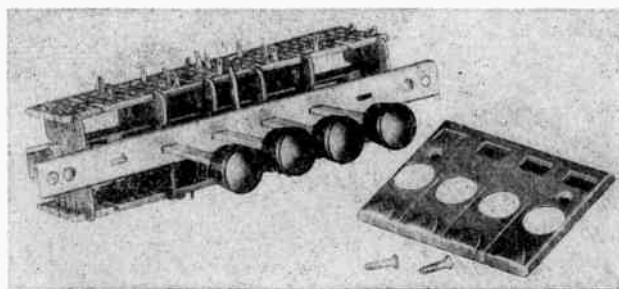
**APPLICATION**—Where all unused terminals are to be connected together and automatically shorted out.

**DESCRIPTION**—This switch is of the basic design of series 170C, excepting a phenolic resin insulation is used in the two-section assembly. Through the use of the 330° shorting shoes, all unused terminals are automatically connected. The spacing between sections is 1/2". Switch is supplied with adjustable stop feature for 2 to 6 positions. Supplied with 3/8" diameter, 3/4" long brass bushing and 2" long shaft grooved for easy cutting at popular lengths.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, and one No. 227 lockwasher furnished with each switch.

**PACKAGING**—One switch and accessories per display carton.

Catalog No. 152L



## Multiple Push-Button Switches

**APPLICATION**—This switch is ideal for applications requiring a device for making, breaking, or transferring multiple circuits in automatic station selector tuning, inter-office communication systems, telephone and annunciator systems, set analyzers, tube checkers, and multimeters.

**DESCRIPTION**—Available from four to eight buttons with 3/4" spacing between center lines of plungers. Each plunger actuates a phenolic resin slider supporting the various combinations of shoes which engage the stationary contacts. Arrangement of the plunger and latch bar mechanism provides an inter-locking action whereby one or more plungers may be pressed simultaneously, and will remain latched until released by depressing another plunger. Available in both shorting and non-shorting types, and with contact arrangement for both circuit closing and circuit transfer.

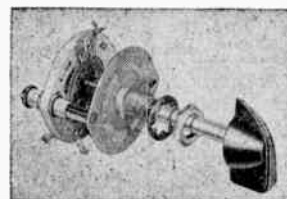
**ACCESSORIES**—Each switch furnished with brown phenolic resin knobs, one attractive statuary bronze escutcheon plate with blank designation inserts, and transparent strip for windows.

**PACKAGING**—One switch and accessories per display carton.

Catalog Number	Number of Buttons	Type
2164	4	Circuit Closing
2166	6	Circuit Closing
2168	8	Circuit Closing
2184	4	Circuit Transfer
2186	6	Circuit Transfer
2188	8	Circuit Transfer
2194	4	†Circuit Transfer
2196	6	†Circuit Transfer
2198	8	†Circuit Transfer

†Non-shorting.

## Ceramic Section "Hamband" Switches



**APPLICATION**—For transmitter band switching of low power transmitter circuits.

**DESCRIPTION**—A special ceramic switch designed for transmitter plate circuits using up to 1000 volts DC with power up to 100 watts inclusive. Ceramic insulation is employed in both the section and spacers between sections to obtain highest insulation qualities, and to provide low losses at high frequencies. Available in one to five sections, with each section having one circuit. 90° indexing between positions, and capable of continuous rotation. Supplied with 3/8" diameter, 3/4" long brass bushing and 2" long shaft grooved for easy cutting at popular lengths. All types non-shorting.

**ACCESSORIES**—One Mallory No. 366 knob, one No. 232 nut, and one No. 227 lock washer furnished with each switch.

Refer to Misc. Items Section for special dial plate No. 488.

**PACKAGING**—One switch and accessories per display carton.

Catalog Number	No. of Sections or Gangs	Circuits per Switch	Spacing between Sections	Points or Contacts per Circuit
161C	1	1		4
162C	2	2	2"	4
163C	3	3	1"	4
164C	4	4	1"	4
165C	5	5	1"	4

\*Reg. U.S.Pat. Off.

# MALLORY PUSH-BUTTON AND JACK SWITCHES



**Single Push-Button Switches**

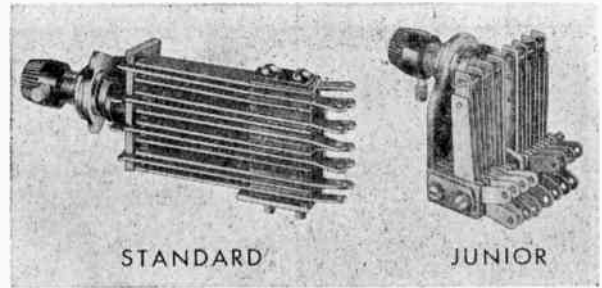
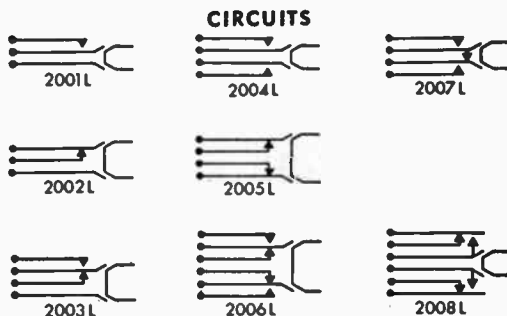
**APPLICATION**—These switches are ideal for a wide variety of applications requiring momentary or permanent contact. Especially adapted for use in laboratories, on test panels, in meter circuits, etc.

**DESCRIPTION**—Eight different circuit combinations available in either the locking or non-locking types. The locking types keep the circuit closed until the button is pulled out. The non-locking types maintain contact only while the button is held in the depressed position. Excellent electrical characteristics are achieved through the use of the phosphor bronze contact springs and the low resistance silver-plated contacts. The switch frame is steel cadmium plated, and the mounting bushing is nickel plated brass. Will mount in single hole  $\frac{7}{16}$ " diameter on panels up to  $\frac{1}{4}$ " thick.

**ACCESSORIES**—One polished phenolic resin knob, one Mallory 232 nut and one No. 225 washer furnished with each switch.

**PACKAGING**—One switch and accessories per display carton.

Cat. No.	Circuit Arrangement
2001	S. P. Make contact—Non-locking type
2001-L	S. P. Make contact—Locking type
2002	S. P. Break contact—Non-locking type
2002-L	S. P. Break contact—Locking type
2003	S. P. Double-Throw—Non-locking type
2003-L	S. P. Double-Throw—Locking type
2004	2-Pole—Make two contacts—Non-locking type
2004-L	2-Pole—Make two contacts—Locking type
2005	2-Pole—Break two contacts—Non-locking type
2005-L	2-Pole—Break two contacts—Locking type
2006	2-Pole—Double-Throw—Non-locking type
2006-L	2-Pole—Double-Throw—Locking type
2007	2-Pole—Make two—Break one—Non-locking type
2007-L	2-Pole—Make two—Break one—Locking type
2008	Double-Throw—Make before break—Non-locking type
2008-L	2-Pole—Double-Throw—Make before break—Locking type



STANDARD

JUNIOR

## Jack Switches

**APPLICATION**—Ideally suited for use in laboratories, test panels, meter circuits, and other equipment where variable circuit combinations are accomplished through the leaf spring type assembly.

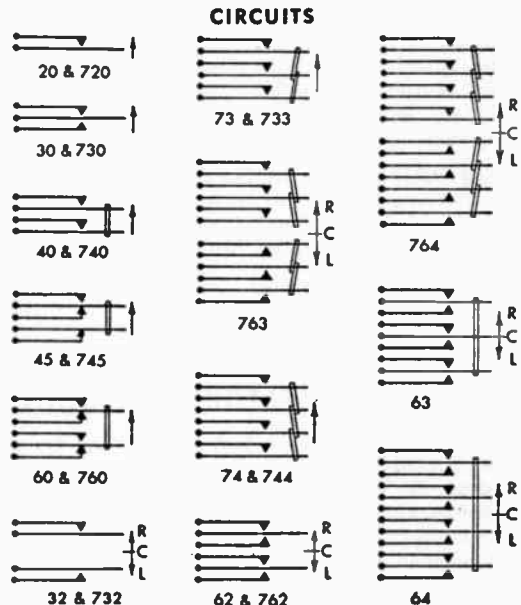
**DESCRIPTION**—The Standard Jack (or long frame type) may be used where space is no factor, as the frame extends straight back from panel mounting. The spring stack is assembled on a horizontal line with the frame. Constructed with knob and shaft that rotates through the bushing, operating a cam to actuate the spring which accomplishes the circuit switching.

The Junior Jack (or short frame type) is made with the frame supporting the spring stack at right angles. Because of the short springs used, it requires a minimum of space for mounting. The actuation of the springs is the same as for the Standard Switch. Frames on both Standard and Junior types are cadmium plated. Brass bushings and phosphor bronze springs are nickel plated. The fine silver contacts insure good electrical and low resistance contact. Both switch types are suitable for mounting in a single hole  $\frac{7}{16}$ " diameter on panels up to  $\frac{1}{4}$ " thick.

**ACCESSORIES**—One Mallory black phenolic resin knob, one No. 232 nut, and one No. 225 washer furnished with each switch.

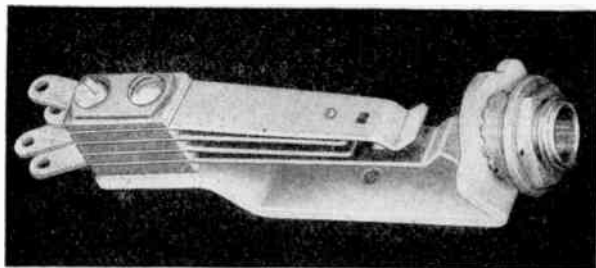
**PACKAGING**—One switch and accessories per display carton.

Two Position		Circuit Arrangement
Standard No.	Junior No.	
20	720	Single-Pole, Single-Throw
30	730	Single-Pole, Double-Throw
40	740	Double-Pole, Single-Throw
45	745	Five Springs, two break and one make
60	760	Double-Pole, Double-Throw
73	733	Three-Pole, Single-Throw
74	744	Four-Pole, Single-Throw
Three Position		Circuit Arrangement
32	732	Double-Pole, Single-Throw Center off Position
62	762	Double-Pole, Double-Throw Center off Position
63	763	Three-Pole, Double-Throw Center off Position
64	764	Four-Pole, Double-Throw Center off Position



Mallory Page 5 (See Mallory Page 1 for List Prices)

# MALLORY JACKS



## Jacks

**APPLICATION**—These jacks provide a conventional receptacle where it is desirable to open or close auxiliary circuits by use of a combination of spring assemblies actuated by insertion of connection plugs. Excellent for head sets, hand sets, or microphone cord and plug connections, for meter testing cord and plug connections, or as a receptacle for any device where desirable to connect or disconnect by cord and plug. Fit all Mallory #75 and 76 plugs.

**DESCRIPTION**—The long frame jacks are provided with a variety of spring combinations. The spring stackups are mounted horizontally to the frame. The jack is designed to mount in a single  $\frac{7}{16}$ " hole in panels up to  $\frac{5}{16}$ " thick. Fits all standard Mallory plugs of two and three conductor types.

The Junior Jack (sometimes called "short frame" jack) is made with the frame supporting the spring stack at a right angle with the short springs requiring only  $1\frac{5}{16}$ " space back of panel for mounting. Bushings are made to mount in single  $\frac{7}{16}$ " diameter holes in panels up to  $\frac{5}{16}$ " thick. Fits all standard Mallory plugs.

The Midget Jack is very compact (with shorter frame and springs than the Junior types), being extremely useful where bare minimums of space exist. Will mount in a single  $\frac{3}{8}$ " diameter hole in panels up to  $\frac{1}{4}$ " thick.

The Infant Jack (sometimes referred to as a "pup" jack) is the smallest single circuit jack manufactured to accommodate the conventional 2-way phone plug tip and sleeve connection.

All jacks are made with cadmium-plated frames. Brass bushings and phosphor bronze springs are nickel plated. Fine silver contacts provide a jack with excellent electrical contact and low-contact resistance.

**ACCESSORIES**—One Mallory No. 232 nut and one No. 225 washer furnished with each long frame Junior and A-1 (Infant) Jack. Two nuts and one washer furnished with all Midget Jacks.

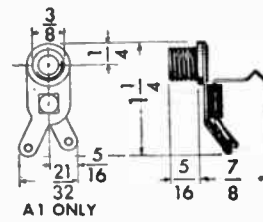
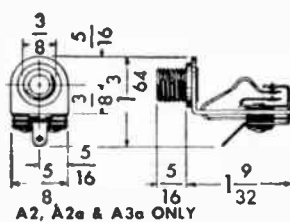
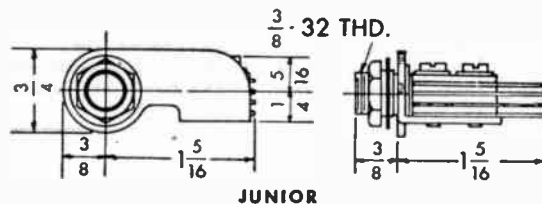
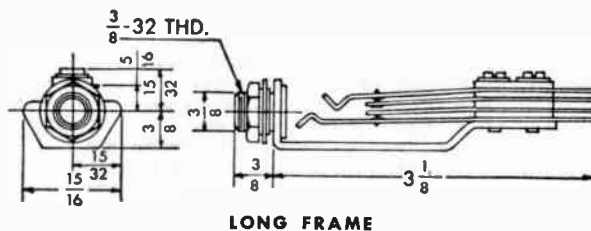
**PACKAGING**—One switch and accessories per display carton.

	Long Frame Cat. No.	Junior Jacks Cat. No.	Infant and Midget Cat. No.
	1	701	*A-1
	2	702	A-2
	2A	702A	A-2A
	2B	702B	
	3	703	
	3A	703A	A-3A
	3B	703B	
	3C	703C	
	4	704	
	4A	704A	
	4B	704B	
	5	705	
	6	706	

\*Commonly referred to as "Infant" Jack.

**"GROUNDING" JACK**—(Type GJ-1), for "grounding" airplanes while refueling. Similar in construction to A1 Jack except for insulation.

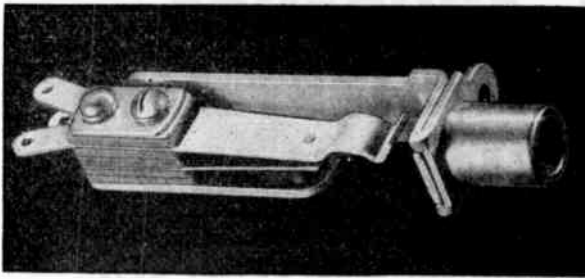
### JACK DIMENSIONS



## MALLORY VIBRATOR DATA BOOK

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# MALLORY JACKS AND PLUGS



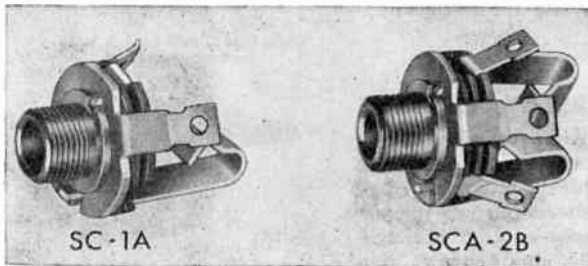
## Jacks

**APPLICATION**—Ideal for telephone switchboard types of applications, as well as industrial applications where a more compact jack is required for close strip panel mounting.

**DESCRIPTION**—Although limited to three circuit combinations, these jacks serve the same purpose as the Mallory Standard Long Frame Jacks, but employ a special frame angle to provide greater support. The bushing is plain, unthreaded, and the jack is mounted by means of a screw through the panel mounting plate at the base of the bushing. Bushing fits all standard Mallory plugs of two and three conductor types. The springs are assembled horizontally to the frame. The frames are steel cadmium plated. Brass bushings and phosphor bronze springs are nickel plated. The fine silver contacts provide an excellent electrical contact and low contact resistance.

**ACCESSORIES**—None furnished.

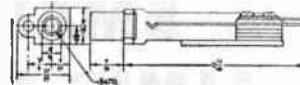
**PACKAGING**—One jack per display carton.



## SC Jacks

**No. SC-1A Phone Jack**—Equivalent of Signal Corps Jack No. JK-34A. Same spring arrangement as No. 1 Long Frame Jack. Designed to receive following plugs: Mallory No. 75, Western Electric Nos. 47A and 47B; Signal Corps Nos. PL-47, PL-48, PL-55, PL-148, PL-155.

**No. SCA-2B Microphone Jack**—Equivalent of Signal Corps Jack No. JK-33A. Same spring arrangement as No. 2B Long Frame Jack. Designed to receive following plugs: Western Electric No. 109 and Signal Corps Nos. PL-46, PL-68 and PL-168.



Cat. No.	Type
----------	------



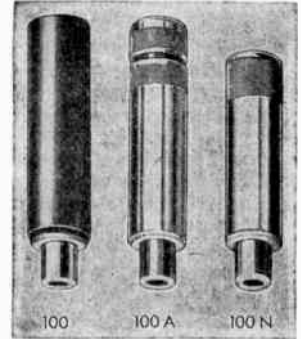
XP1—(Open Circuit)

XP2B—(Three-Circuit Microphone)



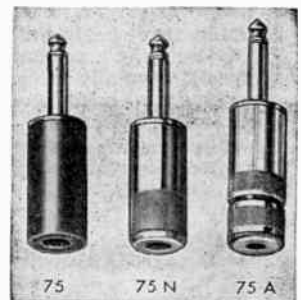
XP3B—(Single Circuit, Make before Break)

## Extension Jacks



Cat. No.	Description
100	Two-Way Extension Jack (Fiber Shell) for No. 75 Phone Plug
100N	Two-Way Extension Jack (Shielded One-Piece Nickel Shell) for No. 75N Phone Plug
100A	Two-Way Extension Jack (Shielded Two-Piece Nickel Shell) for No. 75A Phone Plug (with Built-in Cable Clamp)

## Plugs



Cat. No.	Description
75	Two-Way Phone Plug with Tie-Cord Anchor (Phenolic Resin Shell)
75N	Two-Way Phone Plug with Tie-Cord Anchor (Shielded One-Piece Nickel Shell)
75A	Two-Way Phone Plug with Tie-Cord Anchor (Shielded Two-Piece Nickel Shell) (with Built-in Cable Clamp)
76	Three-Way Microphone Plug (Phenolic Resin Shell)
76A	Three-Way Microphone Plug (Shielded Two-Piece Nickel Shell) (with Built-in Cable Clamp)

## MALLORY RADIO SERVICE ENCYCLOPEDIA

Page after page of replacement information for all pre-war and post-war receivers.

Mallory Page 7 (See Mallory Page 1 for List Prices)



# SMALL SWITCHES, LIMIT SWITCHES, AND MAGNETIC RELAYS

## SMALL SNAP-ACTION SWITCH, G-E SWITCHETTE CR1070-C103

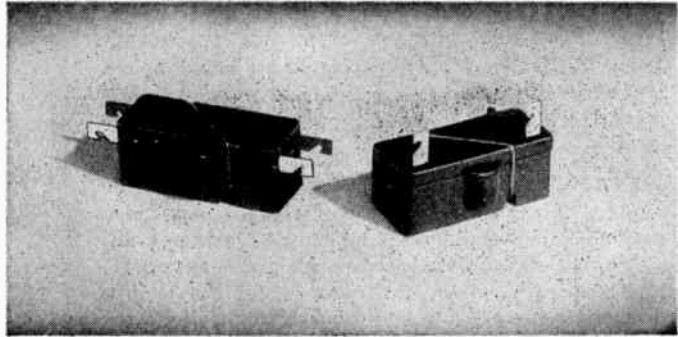
This lightweight switch mechanism lends itself especially to applications where space is limited and long life required.

The Switchette is operated by movement of the spring-return button located in the housing. This button can be actuated by a lever, bellows, or other means. Snap-action, double-break-contact construction gives the G-E Switchette a high current rating and makes it suitable for applications where the vibration is severe.

### FEATURES AND ADVANTAGES

1. Small (approximately 1¼ in. by ½ in. by ½ in.) and weighs only 9 grams (0.02 lb).
2. Resists vibration and corrosion.
3. Phenolic-resin operating button provides safety from live parts during operation.
4. Contact tips are 99.95 per cent pure silver.
5. Particularly suited to electronic applications because of negligible amount of contact bounce.
6. Five terminal arrangements are available, including the two shown above.
7. Wide variety of forms available, for example, three basic contact arrangements: single-circuit, normally open; single-circuit, normally closed; and two-circuit, normally open and normally closed. Also many special forms.

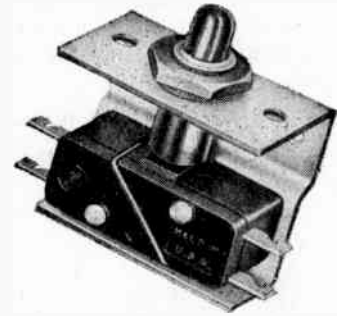
Switchettes are available in ratings up to 10 amperes at 115 or 230 volts a-c. Write for Bulletin GEA-3818.



Switchettes showing two terminal arrangements

## LIMIT SWITCH, CR1070-D101

This sturdy, open-type limit switch is operated by a plunger which provides ¾-inch overtravel. The contact mechanism of this device is the G-E Switchette, which can be wired to control one normally open circuit and one normally closed circuit. Rated 10 amperes at 230 volts a-c. Write for Bulletin GEC-197.



Open-type limit switch with push-rod operation

## GENERAL PURPOSE RELAY, CR2790-E

The CR2790 relay is a compact, attractively finished device for use either as a motor starter or a relaying unit. Available in either an open form or enclosed in a general-purpose or explosion-proof housing. Three contact arrangements available: single-pole, single-throw; double-pole, single-throw; and double-pole, double-throw. In the open form, all three contact arrangements use the same base, which facilitates mounting. In the enclosed form, the U-shaped cover makes wiring and servicing convenient. Rated 10 amp. continuous, 110/120 volts a-c.

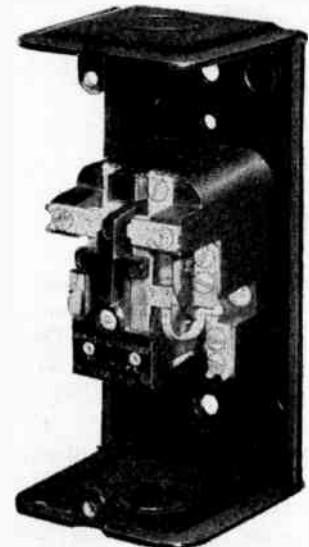
### Applications

Control of pilot circuits in response to remote control switch or thermostat, or for direct control of small motors.

As a fractional-horsepower motor starter, or in conjunction with a magnetic switch controlling larger motors, heating or lighting circuits, and signal systems. Bulletin GEC-257.



Enclosed magnetic relay



Enclosed relay with cover removed

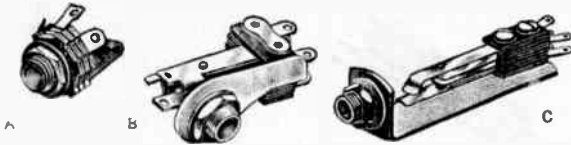
# SWITCHCRAFT INC.

CHICAGO 22, ILLINOIS

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SWITCHES: Push-Button . . .  
Rotary and Lever Action . . .

"SWITCHCRAFT" produces many custom made products for the industry. Inquiries invited.

## SWITCHCRAFT PHONE JACKS



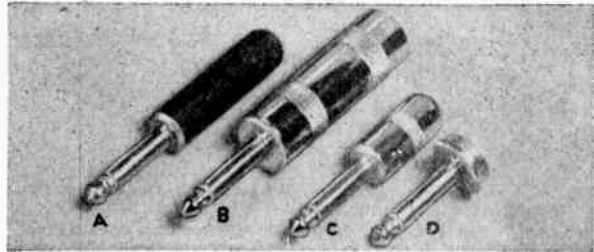
The "Littel-Jax" (A) features notched insulating washers mechanically interlocking springs and lugs; "V-bend" in tip spring firmly "holds" mating Plug; minimum space requirements, economical. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{8}$ " thick. Our No. C-11 (JK-34A) mates with Army Plug PL-55; our C-12B (JK-33A) is adjusted to fit Army Plug PL-68; our S-13B is same as 13B except to fit W.E. Plug 109 and Signal Corps Plug PL-68.

The short frame type Jack "SF-JAX" (B), requires minimum panel depth, mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{8}$ " thick.

The long frame type Jack "LF-JAX" (C), requires minimum panel space, 3" deep, mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick.

"LITTEL-JAX"		"SF-JAX"		"LF-JAX"		Schematic
Part No.	U.S.A. List Price	Part No.	U.S.A. List Price	Part No.	U.S.A. List Price	
11	\$0.35					
C-11	\$0.50	21	\$0.50	31	\$0.60	
		22	\$0.65	32	\$0.75	
12A	\$0.40	22A	\$0.65	32A	\$0.75	
12B	\$0.50	22B	\$0.65	32B	\$0.75	
C-12B	\$0.60	23	\$0.75	33	\$0.85	
		23A	\$0.75	33A	\$0.85	
13B	\$0.70	23B	\$0.75	33B	\$0.85	
S-13B	\$0.90	23C	\$0.75	33C	\$0.85	
		23E	\$0.75	33E	\$0.85	
		24	\$0.85	34	\$1.00	
		24A	\$0.85	34A	\$1.00	
		24B	\$0.85	34B	\$1.00	
		25	\$1.05	35	\$1.15	
		26	\$1.15	36	\$1.25	

## SWITCHCRAFT PHONE PLUGS



The "Littel-Plug" (A), radically new, fitting standard Jacks; solder lug type features clamp terminal serving as a cable clamp and terminal—perfect for metal braid cable. Screw type terminals—no clamp. Tenite or Metal handles are  $1\frac{1}{2}$ " L.,  $\frac{1}{2}$ " dia. Exterior metal parts bright nickel pl.

The Standard Plugs (B), conventional design, available both black Bakelite or metal handles  $2\frac{1}{8}$ " L.,  $\frac{1}{4}$ " O.D., except No. 90 and No. 160 have metal handles 1" long. Exterior metal parts bright Nickel Pl.

The "Lug-Plug" (C), low-cost two conductor, solder lug term. Exterior metal parts bright Nickel Pl. Red or Black Tenite Handles are  $1\frac{1}{2}$ " L.,  $\frac{1}{2}$ " O.D. No. 380 has metal handle 1" L., bright Nickel Pl. Plug Adapter (D) used with MC1F or MC1FA Connectors for use with standard Phone Jacks.

Part No.	U.S.A. List Price	Plug Type	Color or Type of Handle	Description
240	\$0.70	"Littel-Plug"	Black	2-conductor. Screw Term.
245	\$0.70	" "	Red	" " " " " "
270	\$0.95	" "	Metal	" " " " " "
250	\$0.65	"Littel-Plug"	Black	2-conduct. Clamp-lug Term.
255	\$0.65	" "	Red	" " " " " "
280	\$0.90	" "	Metal	" " " " " "
260	\$1.10	"Littel-Plug"	Black	3-conductor. Screw Term.
290	\$1.30	" "	Metal	" " " " " "
267	\$0.95	"Littel-Plug"	Black	3-conduct. Clamp-lug Term.
269	\$0.95	" "	Red	" " " " " "
297	\$1.20	" "	Metal	" " " " " "
40	\$0.65	Standard	Black	2-conductor. Screw Term.
70	\$1.10	" "	Metal	" " " " " "
160	\$0.85	" "	Metal	" " " " " "
44	\$0.45	Adapter	—	" " " " " "
60	\$0.95	Standard	Black	3-conductor. Lug Terminals
90	\$1.20	" "	Metal	" " " " " "
350	\$0.50	"Lug-Plug"	Black	2-conductor. Lug Terminals
355	\$0.50	" "	Red	" " " " " "
380	\$0.60	" "	Metal	" " " " " "

## SWITCHCRAFT "FLAT PLUG"



A radically new design, in both 2 and 3-conductor types. Removable Plastic Cap; terminals and body mechanically interlocked; Cover of Black or Red Tenite; one-piece tip rod; high grade insulation; terminal identification.

Ideal for theatre or church hearing-aid installations, office dictation equipment, disc, wire or tape recorders, test equipment, etc.

Part No.	U.S.A. List Price	Color or Type of Handle	Description
220	\$0.75	Black	2-conductor Screw Term.
225	\$0.75	Red	" " " " " "
227	\$0.70	Black	" " " " Lug. Term.
229	\$0.70	Red	" " " " " "
230	\$1.10	Black	3-conductor Screw Term.
235	\$1.10	Red	" " " " " "
237	\$1.05	Black	" " " " Lug. Term.
239	\$1.05	Red	" " " " " "

## SWITCHCRAFT "EXTENSION JAX"



Features a clamp type terminal providing a cable anchor. Spring tempered nickel silver springs, designed to properly "hold" mating plug. Exterior metal parts N.P.; Terminals mechanically interlock. High grade insulation. Available in 2 and 3-conductor types, solder lug or screw type terminals. Bakelite or Brightly Nickel Plated Brass handles. Mates with any standard plug.

Part No.	U.S.A. List Price	Color or Type of Handle	Description
80	\$1.10	Black	2-conductor Screw Term.
88	\$0.95	" "	" " " " Lug. Term.
120	\$1.45	Shielded	" " " " Screw Term.
128	\$1.30	" "	" " " " Lug. Term.
830	\$1.45	Black	3-conductor Screw Term.
838	\$1.30	" "	" " " " Lug. Term.
1230	\$1.80	Shielded	" " " " Screw Term.
1238	\$1.65	" "	" " " " Lug. Term.

AVAILABLE AT ALL LEADING RADIO JOBBERS.  
PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

Canadian Representative: ATLAS RADIO CORPORATION, Ltd.,  
560 King Street, W., Toronto 2B, Canada. Phone: Waverly 4761.

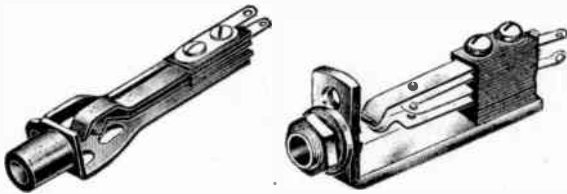
# SWITCHCRAFT

CHICAGO 22, ILLINOIS

PHONE JACKS • PHONE PLUGS  
SWITCHES: Push-Button . . .  
Rotary and Lever Action . . .

"SWITCHCRAFT" produces many custom made products for the industry. Inquiries invited.

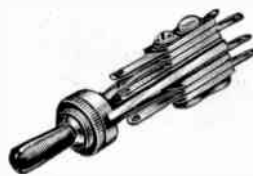
## SWITCHCRAFT "T" & "M" JAX



"T" JAX — Long frame, Switchboard type, designed for quality communication and military equipment.

"M" JAX — Heavy, long frame Jack, often referred to as Navy Jack, designed for industrial and military equipment requirements. Circuits listed are standard; more complex circuits available.

## SWITCHCRAFT "LEV-R-SWITCHES"



Unusually small, lever action switch, available in numerable circuits, to provide the simplest in switching design. Ideal for inter-comm. equip., test equip., model r.r. switch panels, recording equip., etc.

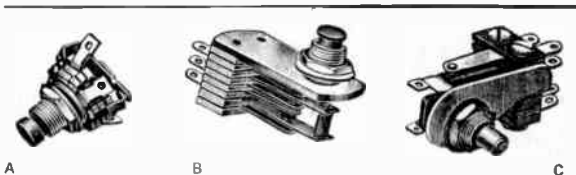
Mounts in single  $\frac{1}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick; Long life springs; soft, easy action — real detent action on locking types; Springs assembled into a conventional stack assembly; fine silver contacts rated at 3 amperes, 120 volts A.C., non-inductive load; other contacts available.

"T-JAX"			Schematic
Part No.	U.S.A. List Price	Similar Jan Type No.	
T-331	\$0.95	JJ-086	
T-332A	\$1.10	JJ-024	
T-332B	\$1.10	JJ-022	
T-332C	\$1.30		
T-333	\$1.20	JJ-084	
T-334A	\$1.35		
T-334B	\$1.45	JJ-042	
T-334C	\$1.35	JJ-072	
T-334F	\$1.35	JJ-035	
T-335	\$1.45		
T-336	\$1.60	JJ-074	
"M-JAX"			Schematic
M-444B	\$2.20	JJ-082	
*M-444	\$2.30	*JJ-083	
M-446	\$3.50	JJ-079	
M-446A	\$3.90	JJ-081	

\*Bushing .2085" to mate PJ-068, PJ-168 & PJ-309.

TWO-POSITION TYPE			Schematic
Part No. Non-locking	Part No. Locking	U.S.A. List Price	
3001	3001L	\$1.95	
3002	3002L	\$1.95	
3003	3003L	\$2.25	
3004	3004L	\$2.50	
3005	3005L	\$2.50	
3006	3006L	\$2.75	
THREE-POSITION TYPE			Schematic
3033	3033L	\$2.50	
3034	3034L	\$2.60	
3035	3035L	\$2.60	
3036	3036L	\$2.90	
3037	3037L	\$2.95	
INTER-COMM. SWITCHES			
3033T		\$2.50	
3037T		\$2.95	

## SWITCHCRAFT PUSH-BUTTON & ROTARY SWITCHES



The "Littel-Switch" (A), available in 3 circuits, either in Red or Black one-piece Plastic Push-Buttons, non-locking only. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick. Integral contacts are standard, recommended for low current only.

The "FF-Switch" (B), all common circuits, one-piece Black Plastic Push-Button, non-locking only. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick. Fine silver contacts rated 3 amperes, 120 volts A.C., non-inductive.

The "RS-Switch" (C), locking and non-locking types, two-position rotary, all common circuits. Mounts in single  $\frac{3}{8}$ " dia. hole, panels up to  $\frac{1}{4}$ " thick. Fine silver contacts rated 3 amperes, 120 volts A.C., non-inductive. Ideal for "Talk-Listen" switches in Inter-Communication Systems, Electro-musical equipment, Test equipment, Electro-therapy and X-Ray equipment.

"LITTEL-SWITCH"			"FF-SWITCH"		"RS-SWITCH"			Schematic Circuit
Part No. Red-Button	Part No. Black-Button	U.S.A. List Price	Part No.	U.S.A. List Price	Part No.		U.S.A. List Price	
			Non-Locking	Locking				
101	201	\$0.80	1001	\$0.90	2001	2001L	\$0.90	Schematic
102	202	\$0.80	1002	\$0.90	2002	2002L	\$0.90	
103	203	\$0.85	1003	\$1.00	2003	2003L	\$1.10	
			1004	\$1.10	2004	2004L	\$1.15	
			1005	\$1.10	2005	2005L	\$1.15	
			1006	\$1.35	2006	2006L	\$1.50	

# Advance RELAYS



Type 7204

## COAXIAL RELAY

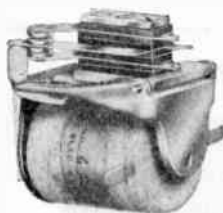
This relay, for use with 52 ohm RG coaxial cable, has SPDT internal contacts, rated at 880 watts maximum. If desired, DPDT auxiliary contacts (as illustrated) may be had. Tests on a 52 ohm line show VSWR of 1.02:1.0 at 100 meg.

\*List Prices: (Up to 115 V A.C. or 40 V D.C.)

A.C.	D.C.		
7200	8200	.....	\$15.12
7204	8204	With auxiliary contacts .....	18.75

\*For higher voltages up to 440 V A.C. or 240 V D.C., or for other Advance Coaxial Relays, see your nearest jobber.

Size (without auxiliary contacts): 1 3/8" x 2 7/8" x 3 1/2"



Type 5203A  
"A" denotes  
5-amp. contacts

## MIDGET TELEPHONE RELAY

This small, yet sturdy relay is offered in any contact combination from SPST to 4PDT; with 1/8", 1.5 amp. contacts, or with 3/16", 5 amp. contacts. Coils draw from .1 to 2 watts D.C. or 1 to 1 1/2 watts A.C. List prices below are for coils up to 115 V A.C. or 1000 ohms D.C.

A.C.	D.C.			
5201	6201	SPST N. O.....	\$4.23	
5201A	6201A	SPST N. O.....	4.47	
5203	6203	SPDT .....	4.53	
5203A	6203A	SPDT .....	5.01	
5204	6204	DPDT .....	5.44	
5204A	6204A	DPDT .....	6.41	

For higher voltage coils, up to 220 V A.C. or 16,000 ohms D.C., see your nearest jobber. He can also show you other Advance Telephone Relays.



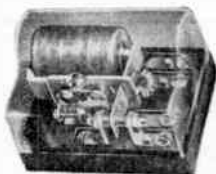
Type 003

## TINY MITE RELAYS

(FOR D.C. ONLY)

In these tiny relays, which require less than 1/2 cubic inch mounting space, all switching is above ground. Contacts are rated at .35 amperes at 115 V A.C. (non-inductive). Power required is .2 to .5 watt. Coils are available for any D.C. voltage 1 to 80; resistances up to 5000 ohms. Weight: 10 grams. (45 relays per lb.). List prices below are for any coil up to 800 ohms (24 V D.C.). For higher resistances see your nearest jobber.

Type		List	Size: 1 3/8" x 1 3/8" x 1 1/8"
003	SPST N. O.....	\$3.20	(Overall dimensions with lugs as illustrated).
005	DPST N. O.....	3.50	If desired, can be supplied with leads.



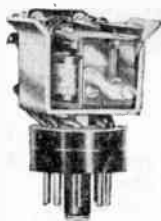
Type 1200

## ULTRA-SENSITIVE D.C. RELAYS

This relay combines many superior features — transparent plastic cover-molded Bakelite base — counter-balanced armature — high overall sensitivity . . . 5 milliwatts for positive operation — 2 1/2 milliwatts with careful adjustment, and light contact load . . . Three adjustments with vernier screws: spring, and each contact. Contacts are SPDT, pure silver rated at 1.5 amperes at 115 V A.C. (non-inductive). Supplied in coil resistances up to 40,000 ohms. Be sure to specify resistance desired! List Prices:

Up to 2200 ohms .....	\$ 9.77	8700 ohms .....	\$10.89	30000 ohms .....	\$13.91
3500 ohms .....	10.28	14000 ohms .....	11.49	40000 ohms .....	16.94
5500 ohms .....	10.58	20000 ohms .....	12.10		

Base Dimensions: 2" x 2 7/8". Height: 1 1/2". Weight: 6 1/4 ounces.



Type K1604P

## PLUG-IN RELAYS

Any Advance Relay can be Supplied with Standard Speaker Plugs!

To designate that plug-in is desired, add the letter "P" to the type number when ordering. For example type K1604 (illustrated) becomes type K1604P.

To compute list prices, add to the prices shown elsewhere as follows:

8 prong .....	\$3.00	11 prong .....	\$4.30
9 prong .....	3.55	12 prong .....	4.70
10 prong .....	3.90		

• Ask your jobber about Advance Hermetically Sealed or Dustite Relays! •



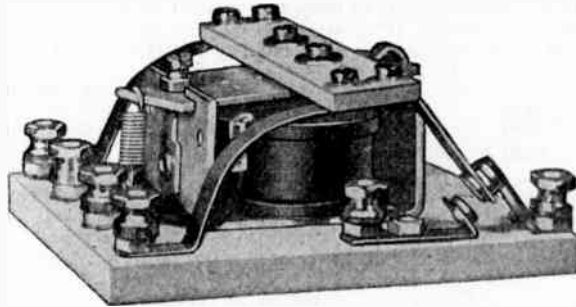
# Advance RELAYS

Isolantite model Antenna Change-Over. Designed for use in Amateur Transmitters.

The contact system is Double Pole-Double Throw, using  $\frac{1}{4}$ " Pure Silver contacts, with exceptional wiping action. Three and four pole arrangements are available on special order.

For high radio frequency control. Entirely hum-

## TRANSMITTER RELAYS



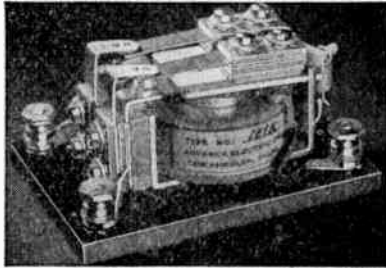
Type 400

free where intended for A.C. operation, and highly efficient on D.C. supplies. All metallic parts are cadmium and chromium plated.

Standard coils are for 110V A.C. and may also be used for 24V D.C. However, they will also be supplied for lower A.C. or D.C. voltages at no increase in price.

List Price.....\$11.97

## KEYING RELAYS

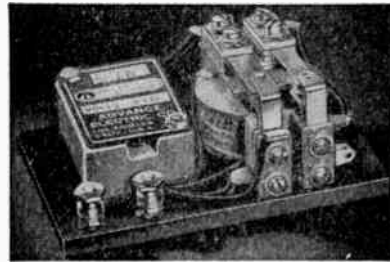


Type 101K—A.C.  
Type 201K—D.C.

Designed expressly for use in Keying Circuits where it is desired to use low voltage across the key to control high voltage transmission through the Relay contacts. The heavy duty coil and strong return spring makes possible an exceptional keying speed. Two sets of  $\frac{1}{4}$ " Pure Silver contacts in series allow a carrying capacity of 2500 volts. The complete unit, mounted on a  $\frac{3}{16}$ " Bakelite base with binding posts for coil connections, has over-all dimensions of 3" x 2" x  $\frac{1}{8}$ " and is obtainable for A.C. operation to 115 volts or D.C. operation to 60 volts.

List Price.....\$6.65

## TIME DELAY RELAYS

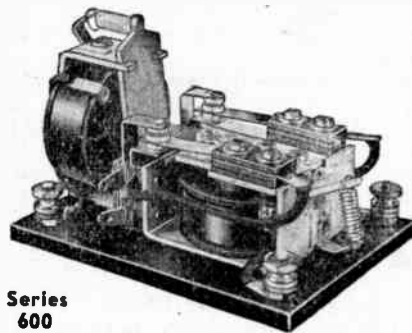


Type 305B—N.O.  
Type 355B—N.C.

Particularly suited for use where short time delays (10 sec. to 1 min.) are required, these Relays are available with both normally open and normally closed thermostats. Types 300 and 350 respectively, the former being widely used for pre-heating tube filaments, etc. The contact combination on both models is Double Pole Single Throw with  $\frac{1}{4}$ " Pure Silver contacts. Mounted on  $\frac{3}{16}$ " Bakelite bases measuring  $3\frac{3}{4}$ " x  $2\frac{3}{8}$ " x  $1\frac{1}{2}$ " with binding posts for coil connections. Standard operating voltage is 110 A.C.....List Price \$10.28

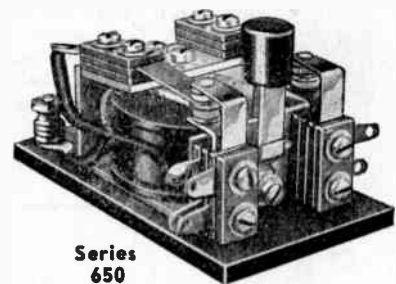
Low voltage units are available on special order.

## LATCHING RELAYS



Series 600

These Relays are highly desirable for applications where it is impractical to have the holding coil in constant service. When the coil actuating the contact arrangement is momentarily energized, the armature is locked in the closed position, and may be released electrically (Type 600) or manually (Type 650).

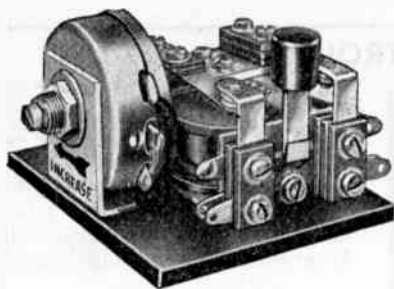


Series 650

	List		List	
Type 604B	\$11.61	.....Double Pole-Double Throw	Type 654B	\$8.64
Type 605B	11.30	.....Double Pole-Single Throw (N. O.)	Type 655B	8.28
Type 606B	11.30	.....Double Pole-Single Throw (N. C.)	Type 656B	8.28

The above list prices are for  $\frac{1}{4}$ " contacts. For  $\frac{3}{16}$ " points deduct 25c—for  $\frac{1}{8}$ " points deduct 50c. When ordering these types SPECIFY THE VOLTAGE.

# Advance RELAYS

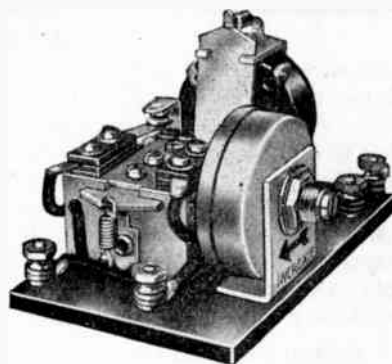


Type 700

## OVERLOAD RELAYS

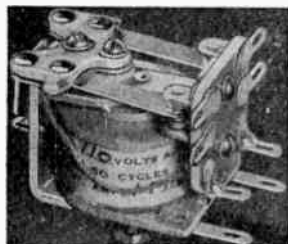
These Relays are designed to provide accurate and positive protection against current surges and continuous overloads, and both the Manual Reset (Type 700) and Electrical Reset (Type 750) are divided into two classifications: Type "A" allows the Relay to attract on any current value between 250 and 500 mills, and Type "B" for any setting between 500 mills and 1 ampere.

When the current flow passes the safety setting, the Double Pole-Single Throw  $\frac{1}{4}$ " Pure Silver contacts are opened, breaking the power supply circuit until reset.



Type 750

Type 700—Base dimensions 3" x 2 $\frac{1}{2}$ "	.....	List Price	
Type 750—Base dimensions 4" x 2 $\frac{1}{2}$ "	.....		\$12.27
			15.97



Series K1500 and K1600

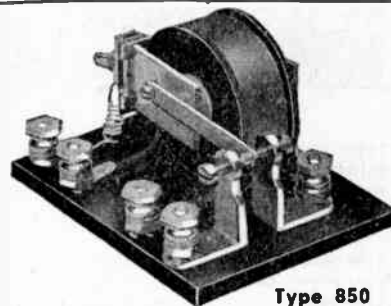
## MIDGET RELAY

Of particular interest where size and cost are factors, this new series of Midget Relays, of improved design, incorporates all of the fine construction features typical of the ADVANCE line. This unit measures only  $1\frac{1}{2}$ " x  $\frac{3}{4}$ " x  $1\frac{1}{8}$ " high. Pure Silver contacts are used,  $\frac{1}{8}$ " in diameter. Standard coils are obtainable from 2 to 32 V D.C. and 1 to 115 V A.C. The following switch combinations can be supplied:

TYPE		CONTACT COMBINATION	LIST PRICES
A.C.	D.C.		
K1505	K1605	DP-ST NOR. OPEN	\$3.92
K1506	K1606	DP-ST NOR. CLOSED	3.92
K1504	K1604	DP-DT	4.23

## ELECTRONIC RELAY

An ultra-sensitive unit for use in electronic tube circuits, providing positive, dependable control on as little as 12 milliwatts. Adjustment screws to change the air-gap between the armature and the pole face, allow operation on a voltage differential of 30%, a condition ideal for electronic applications. The contact combination is Single Pole-Double Throw, employing  $\frac{1}{8}$ " Pure Silver points to safely handle 100 watt non-inductive loads. Obtainable in resistances of 2500, 3000, 5000 and 10,000 ohms at no increase in price.....List Price \$8.64



Type 850



## GENERAL PURPOSE RELAYS

Types 951B — 952B — 953B

These Relays afford maximum power and efficiency at very low cost.  $\frac{1}{4}$ " Pure Silver contacts are standard on the Single Pole-Single Throw (N. O.) Type 951B—Single Pole-Single Throw (N. C.)—952B—and Single Pole- Double Throw—953B—switch combinations. Adequately insulated and entirely above "ground," these Relays may be mounted on any type of panel, quickly and easily, by means of the metal mounting bracket. Coils are obtainable to 115V A. C. or 60V D. C.

List Price.....\$4.65

## GEN-E-MOTOR STARTING RELAY

Type 951C

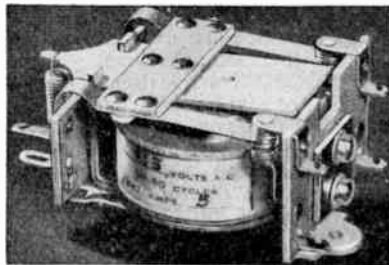
An exceptionally sturdy power transfer Relay, easily capable of handling the heavy current surge encountered on "cold" starts in motor-generator systems. The contacts are  $\frac{3}{8}$ " Pure Silver and have ample carrying capacity for the usual 200-500V converters. Heavy-duty in every phase of construction, this unit is not to be compared with the common five and ten ampere circuit controls. Base dimensions are 3" x 2" and each unit is complete with a braided generator-cable pig-tail and binding posts for all connections. Coils for 5 $\frac{1}{2}$  to 32V D. C. or 1 to 115 A.C.....List Price \$7.98



# Advance RELAYS

## MIDGET TYPE CIRCUIT CONTROLS

These Relays are designed for general circuit control applications where the space for mounting is limited, and measure only 2½" in length, 1½" in width, and 1¼" in height. A.C. operated Relays in this series require but 4 watts on 50/60 cycle current, and the D.C. models from 1.5 to 2 watts, affording maximum efficiency

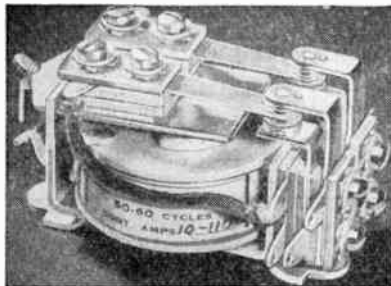


without sacrifice of power and dependability. Metal brackets (not shown in the illustration) are supplied with all Relays of this type, and except on special order, these models are limited to the following contact arrangements and the usual standard operating voltages:

Contact Combinations	3/16"	List	1/4"	List
Double Pole-Double Throw .....	104AM	\$6.65	104BM	\$7.31
Double Pole-Single Throw (N. O.) .....	105AM	6.29	105BM	6.95
Double Pole-Single Throw (N. C.) .....	106AM	6.29	106BM	6.95

The above chart lists type numbers for A.C. operated Relays. D.C. coils may be obtained by changing the series number from 100 to 200. Prices apply to both.

## INDUSTRIAL CONTROL RELAYS



Series 960

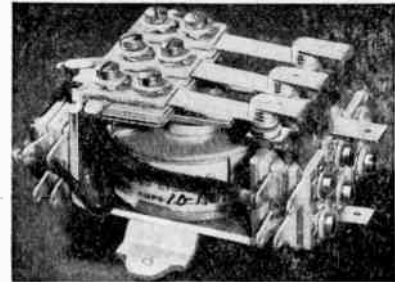
Designed mainly for industrial applications — air conditioning, lighting, and power transfer systems, the Series 960 Relays embody all of the rugged construction features demanded in units of this

type without sacrificing the desirable qualities of the midget style. Available in the following contact combinations, and to operate on standard A. C. and D. C. voltages.

Type	List
Type 964B—Double Pole-Double Throw .....	\$6.65
Type 965B—Double Pole-Single Throw (N. O.) .....	6.29
Type 966B—Double Pole-Single Throw (N. C.) .....	6.29

For smaller contacts, deduct 25c for 3/16" or 50c for 1/8" points, from the above list prices.

Having the same characteristics as the Series 960 Relays, these Three Pole units, Series 970, may be used for fractional h/p 3-phase motor controls, etc. The area required for mounting 2½" x 1½" for Type



Series 970

970 Relays, as against 2½" x 1¼" for the Type 960's, is due to the slightly larger frame. The metal brackets are the same in both instances—2-5/16" long, and 2" between centers of the 6/32 mounting holes. Available in the voltages indicated in the preceding series, and in the following contact combinations:

Type	List
Type 977B—Three Pole-Single Throw (N. O.) .....	\$6.95
Type 978B—Three Pole-Single Throw (N. C.) .....	6.95
Type 979B—Three Pole-Double Throw .....	7.98

For smaller contacts, deduct 50c for 3/16" or 75c for 1/8" points from the above list prices.

## GENERAL PURPOSE RELAY



This Advance relay, with molded bakelite insulation, is compact, sturdy, and all electrical connections are well spaced and easily accessible.

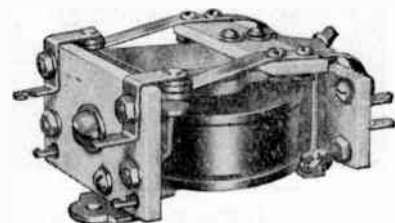
Contacts are 1/4" diameter pure silver, rated at 15 amps. at 115 V. A.C. or 24 V. D.C. non-inductive. BE SURE TO SPECIFY CORRECT TYPE NUMBER AND OPERATING VOLTAGE WHEN ORDERING. PRICES

BELOW ARE FOR A.C. COILS UP TO 115 VOLTS OR D.C. COILS UP TO 40 VOLTS.

D.C.	A.C.	List
Type 9001	9101 SPST—Normally Open—Double Make.....	\$7.37
Type 9003	9103 SPDT—Double Make and Break.....	7.70
Type 9004	9104 DPDT—Single Make and Break.....	7.70

## MIDGET TYPE R.F. RELAYS

These models are sturdy, compact Double Pole - Double Throw Transmitter Relays, designed expressly for use in all types of mobile-portable communications equipment

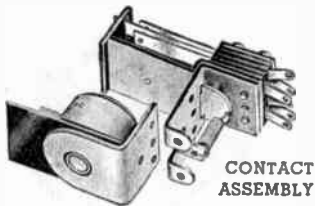


Series 1000—A.C. Series 2000—D.C., where space is at a premium. The insulation on this, as on the Type 400's, is Isolantite for both the cross-arm and end pieces, with all holes adequately well spaced to prevent structural weakness and possible "creepage." Coils are obtainable for all A. C. and D. C. voltages, and will operate in any position, the former consuming approximately four watts—the latter, two watts of power. Dimensions are 2¾" x 1½" x 1¼".

List Price.....\$9.97

# RELAYS BY GUARDIAN

A COMPLETE LINE OF AMATEUR AND INDUSTRIAL RELAYS



CONTACT ASSEMBLY

**COIL ASSEMBLY**

**CONTACT SWITCH ASSEMBLIES**

Type 200-1—Stand., with SPDT Contact Ass'ly, 8 Amps.....	\$1.83
Type 200-2—Stand., with DPDT Contact Ass'ly, 8 Amps.....	2.50
Type 200-4—Standard, DPDT, 12.5 Amps.....	2.90
Type 200-M1—Midget, with SPDT Contact Ass'ly, 8 Amps....	1.70
Type 200-M2—Midget, with DPDT Contact Ass'ly, 8 Amps....	2.25

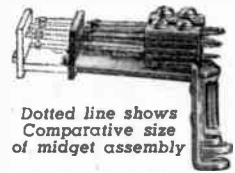
**AC COILS\***

6 Volt.....	\$2.25
12 Volt.....	2.25
24 Volt.....	2.25
115 Volt.....	2.80

\*All AC coils available in 25 and 60 cycles.

## SERIES 200—INTERCHANGEABLE

Two basic parts—a coil assembly and a contact assembly—comprise this simple, yet versatile, relay. Coil assembly consists of coil and field piece. Contact assembly consists of switch blades, armature, return spring and mounting bracket. The new midget contact assembly, which is interchangeable with the standard assembly, is also available in either single pole double throw, or double pole, double throw. The standard contact assembly is 2 $\frac{3}{8}$ " long, 1 $\frac{3}{4}$ " high, 1" wide. The midget assembly is 1 $\frac{5}{8}$ " long, 1 $\frac{1}{2}$ " high, 1" wide. The four contact assemblies can be used with any one of 13 coils to make a required relay. Contact points are rated at 8 amps., 115 volts, 60 cycles AC, non-inductive load.



Dotted line shows Comparative size of midget assembly

MIDGET CONTACT ASSEMBLY

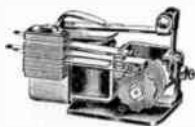
**DC COILS**

6 Volt.....	\$2.25
12 Volt.....	2.25
24 Volt.....	2.25
32 Volt.....	2.25
110 Volt.....	2.80
5000-D—For Current Type Operation.....	2.90

**CONTACT PARTS KIT 200-3.** Assortment of contact parts to make other switch combinations. May be used with SPDT or DPDT contact assemblies to make 3PST, 4PST, 4PDT combinations, etc. Either contact assembly takes any combination up to four pole double throw. Includes complete assembly and wiring information for all possible combinations. Complete with all necessary hardware. Shipping weight 4 oz.

List Price ..... \$1.85 ea.

## RC-100 REMOTE LOCKING CONTROL RELAY



A Guardian development of the momentary impulse locking control relay. The circuit to the coil needs to be energized only long enough to close armature; contacts lock automatically. Each impulse reverses position of contacts. Standard coils operate on 115 volts, 50-60 cycles AC. Coils

for other voltage and currents on specification.

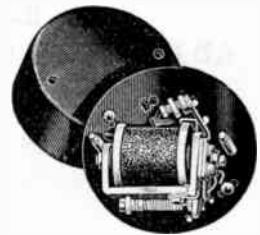
Contacts,  $\frac{1}{4}$ " fine silver metal rated at 1500 watts at 115 volts, 60 cycle, non-inductive. Can also be used in AC primary circuits of any power supply delivering up to 1 KW. 3" long, 2 $\frac{1}{8}$ " wide, 1 $\frac{3}{4}$ " high.

**Applications**—break-in control and phone to CW switching. Any circuit control where locking circuits are used.

	Shp. Wt.	List Price
RC-100-AR—(4PST) .....	8 oz.	\$7.15 ea.
RC-100-BR—(3PDT) (SPDT) (DPST).....	8 oz.	7.85 ea.

## U-100 AND U-200 ADJUSTABLE UNDERLOAD RELAYS

Sensitive, precise, designed and constructed for long, trouble-free service. Relays are encased in attractive black finished metal containers, protecting them from dirt, dust and maladjustment. Normal current through the coil on the U-100 is 300 milliamperes with an adjustable range of 100 to 200 milliamperes DC. Normal current through the coil on the U-200 is 600 milliamperes with an adjustable range of 200 to 400 milliamperes. Oversize contacts of fine silver, rated for the AC primary of any power supply delivering up to 500 watts.



**Radio Application**—protection of class "B" audio equipment in case of class "C" load failure, also class "C" amplifier in case of excitation failure.

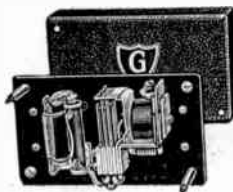
**Industrial Application**—Any DC circuit where it is desirable to maintain currents above a set value.

U-100 and U-200 are 3 $\frac{1}{8}$ " in diameter, 2 $\frac{1}{4}$ " high. Shipping weight 14 oz. List Price \$10.75 ea.

## T-100 AND T-110 TIME DELAY RELAYS

Standard coils operate on 115 volts, 50-60 cycles non-inductive AC. Coils available on other voltages on specification. Oversize contacts rated at 1500 watts on 115 volts, 50-60 cycles non-inductive. Can also be used in the AC primary of any power supply delivering up to 1 KW. Adjustable time delay for any period between 10 and 60 seconds.

**Applications**—Radio. In transmitter circuits to prevent damage of rectifiers and tube filaments by application of plate current before filaments are sufficiently heated. Industrial. Any control problem requiring the changing of circuits after a predetermined interval.



GUARDIAN SERIES T-110 TIME DELAY RELAY

T-100—5 $\frac{1}{4}$ " long, 3" wide, 2 $\frac{1}{4}$ " high. Shipping weight 1 $\frac{1}{4}$  lbs. Laminated construction. List Price.....\$17.15 ea.

The T-110 is a compact, sturdy, economical time delay relay for use in applications not requiring the capacities of the T-100. Contact capacity — 1250 watts on 115 volt, 60 cycle non-inductive AC. Can also be used in the AC primary circuit of any power supply delivering up to, and including, 1 KW. Adjustable time delay between 10 and 60 seconds.

T-110—5 $\frac{3}{8}$ " long, 3 $\frac{1}{8}$ " wide, 2 $\frac{1}{8}$ " high. Shipping Weight 8 oz. List Price.....\$12.90 ea.

# RELAYS BY GUARDIAN

A COMPLETE LINE OF AMATEUR AND INDUSTRIAL RELAYS



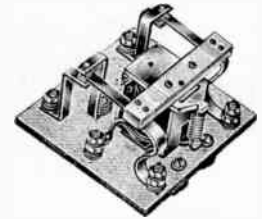
SERIES R-100  
H.F. RELAY

## HIGH FREQUENCY RELAYS

The Series R-100, R-100B, and A-300 Guardian Relays are primarily designed for high frequency applications. They are low-loss insulated, compact, economical and sturdily constructed. The R-100 and R-100B are AlSiMag insulated, while the A-300 is mounted on a mycalex base with polystyrene contact mounting bar.

**Radio Applications**—Antenna changeover, break-in, high voltage keying, grid controlled rectifier keying, remote control of receiver and transmitter, and other high frequency applications.

**Industrial Applications**—Oven control, remote motor control, short wave therapy and diathermy, heating equipment.

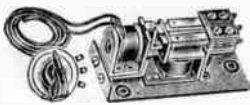


SERIES A-300  
H.F. RELAY

	Length	Width	Height	Shpg. Wght. (oz.)	List Price ea.
R-100 —SPST (normally open).....	2¾"	1"	2"	6	\$3.95
R-100-B—SPST (normally closed).....	2¾"	1"	2¾"	6	3.95
R-100-C—SPDT .....	2¾"	1½"	2¾"	6	4.75
R-100-G —DPDT .....	2¾"	1¾"	2¾"	6	8.55
A-300 —DPDT .....	3"	3"	2-1/16"	7	9.10

## X-300-ER ADJUSTABLE OVERLOAD RELAY

with Electrical Reset



This relay offers positive, precise protection against current surges and continuous overloads — remote panel installation of the control potentiometer simplifying adjustment of relay to operate on

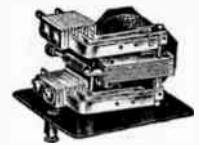
any current value from 250 to 750 milliamperes — auxiliary contacts for pilot light indication of "overload" or "clear" position — reset relay can be operated from any convenient point. Voltage drop across overload coil is less than 10 volts at any current value. Insulation between coil and ground rated at 3000 volts.

X-300-ER—4¾" long, 1-15/16" wide, 2" high. Shipping weight, 12 oz.

List Price.....\$9.25 ea.

## B-100 BREAK-IN RELAY

Specially designed for break-in operation on amateur transmitters. Low current drain and compact construction, plus the use of a laminated field piece and armature insuring efficient



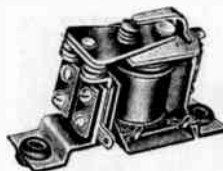
operation, make the B-100 an ideal relay for this application. Standard coil operates on 115 V., 50-60 cycle AC. Silver contacts rated at 1500 watts, 60 cycles AC non-inductive, and in AC primary circuits of any power supply delivering up to 1 KW.

B-100—2¾" long, 2½" high, 2¼" wide. Shipping weight 11 oz.

List Price.....\$10.75 ea.

## K-320 KEYING RELAY

A standard coil operates on 6 volts AC. Coils for other voltages on specification at a minimum of 10% additional to list price. Contacts—special over-size silver. Can handle 5,000 watts on 60 cycle non-inductive 115 volts AC and in AC primary circuit of any power supply delivering up to and including 1 KW. Control capacity—up to 2,000 volts with clean make and break.



**Applications**—Control of filament center tap keying of any stage having up to 2,000 volts on plate; primary keying or control of power supplies up to and including 1,000 watts; and grid-controlled rectifier keying of 3,000 volt power supplies.

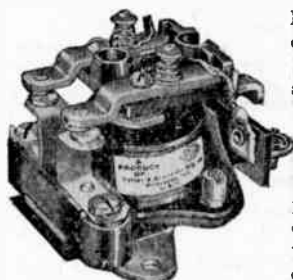
K-320—3" long, 1½" wide, 1-15/16" high. Shipping weight 4 oz.

List Price.....\$4.50 ea.



# Potter & Brumfield

## PR Series HEAVY DUTY POWER RELAYS

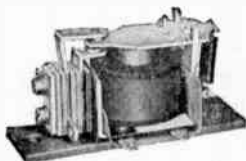


Designed for such power circuits as motor starting up to 1 HP., heater loads up to 20 amperes, remote break-in control of transmitters, electro plating devices, elevator controls, or any control circuit requiring fast positive switching. AC types operate on approximately 10 volt amperes. DC types require approximately 2 watts.

Relay contacts on PR3A, PR3D, PR4A and PR4D rated at 20 A, non-inductive load 115V AC or 1 HP, AC. All other relay contacts rated at 15 A, non-inductive at 115V AC. Size approximately 2 3/8" x 2 9/16" x 2 1/4" high. Specify coil voltage and frequency.

Description	A.C. RELAYS 6-12-24-115-230 Volts				D.C. RELAYS 6-12-24-115 Volts			
	Normally Open	Net	Normally Closed	Net	Normally Open	Net	Normally Closed	Net
SPST	PR1A	\$2.85	PR2A	\$2.85	PR1D	\$2.85	PR2D	\$2.85
Heavy Duty SPST	PR3A	3.10	PR4A	3.15	PR3D	3.10	PR4D	3.15
DPST	PR7A	3.65	PR8A	3.65	PR7D	3.65	PR8D	3.65
SPDT	PR5A		3.20	PR5D		3.20		
DPDT	PR11A		4.90	PR11D		4.90		
	Add 60c to prices above for coils over 150 volts.				Add 80c to prices above for coils over 50 volts.			

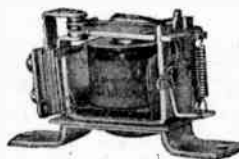
## LS Series PLATE CIRCUIT RELAYS



Designed for application where size and cost are important. Often used in photoelectric circuits, temperature control circuits and electronic timing devices. Similar to the LM Series but less sensitive. Available in all resistances up to and including 10000 ohms. Requires .09 watt minimum actuating power.

Single pole double throw, 2500 ohm coil, net \$1.90.  
Single pole double throw, 5000 ohm coil, net \$2.20.  
Single pole double throw, 10000 ohm coil, net \$2.45.  
Size 2 3/8" x 1 3/8" x 1 3/8" high.  
When ordering, specify coil voltage or resistance.

## FR Series PHOTO FLASH RELAYS



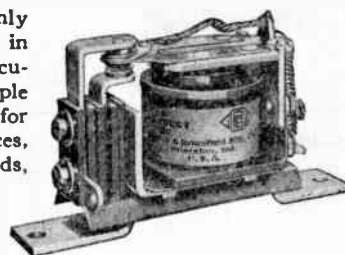
FR1A } \$3.00	FR5A } \$3.25
FR1D } \$3.00	FR5D } \$3.25
FR2A } 2.95	FR7A } 3.95
FR2D } 2.95	FR7D } 3.95
FR3A } 3.65	FR8A } 3.85
FR3D } 3.65	FR8D } 3.85
FR11A } \$4.25	
FR11D } \$4.25	

The newly developed electronic photo flash units using a high voltage discharge through a xenon gas filled bulb require a relay of extraordinary characteristics. When the bulb is flashed the contacts must carry an extremely high surge of current without sticking, burning or pitting. The repetitive accuracy must be as uniform as a precision built shutter on a fine camera. Unfailing positive contact is vital to synchronization of the shutter with the 2500 volt capacitor discharge.

The Potter and Brumfield FR relay has been tried and proven under the most severe conditions of temperature, humidity and shock. Special contact material and the finest quality of baked varnish impregnation of coil and other insulating parts combine to give a reliable relay at economy prices. The FR is available in all the contact combinations listed under the MR Series shown on this page up to and including Double Pole Double Throw. Coils are available in all AC voltages up to 230 volts and DC voltages up to 115. Power requirements for coil operation is 1.5 to 2 watts DC and 3 to 4 volt amperes AC. Overall dimensions for single pole types are 2 15/16" x 1 1/2" x 1 3/8" high. Double pole types 2 3/4" x 2 3/8" x 1 3/8" high.

## MR Series MEDIUM DUTY POWER RELAYS

Sturdy, compact, highly efficient, for mounting in confined spaces. Particularly adapted to multiple panel mounting. Ideal for safety and signal devices, call systems, heater loads, radio protective circuits, transmitter keying circuits, burglar alarms, photographic applications, electric sign controls, etc. Available in all contact arrangements up to and including double pole double throw. AC types operate on approximately 4 volt amperes and DC types operate on approximately 2 watts. Contacts rated at 8 A, 115V, 60 cycles non-inductive load. Approximate size single pole units 2 15/16" x 1 1/2" x 1 3/8" high. Double pole units 2 3/4" x 2 3/8" x 1 3/8" high.



Sturdy, compact, highly efficient, for mounting in confined spaces. Particularly adapted to multiple panel mounting. Ideal for safety and signal devices, call systems, heater loads, radio protective circuits, transmitter keying circuits, burglar alarms, photographic applications, electric sign controls, etc. Available in all contact arrangements up to and including double pole double throw. AC types operate on approximately 4 volt amperes and DC types operate on approximately 2 watts. Contacts rated at 8 A, 115V, 60 cycles non-inductive load. Approximate size single pole units 2 15/16" x 1 1/2" x 1 3/8" high. Double pole units 2 3/4" x 2 3/8" x 1 3/8" high.

Description	A.C. RELAYS 6-12-24-115-230 Volts				D.C. RELAYS 6-12-24-115 Volts			
	Normally Open	Net	Normally Closed	Net	Normally Open	Net	Normally Closed	Net
SPST	MR1A	\$2.00	MR2A	\$1.95	MR1D	\$2.00	MR2D	\$1.95
DPST	MR7A	2.60	MR8A	2.50	MR7D	2.60	MR8D	2.60
SPDT	MR5A		2.15	MR5D		2.15		
DPDT	MR11A		2.80	MR11D		2.80		
	Add 40c to prices above for coils over 150 volts.				Add 40c to prices above for coils over 55 volts.			

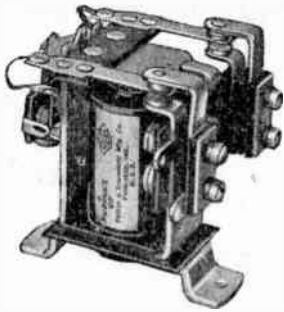
**POTTER & BRUMFIELD**

PRINCETON, INDIANA

EXPORT SALES AT 2020 ENGINEERING BLDG., CHICAGO 6, U.S.A.

# POTTER & BRUMFIELD

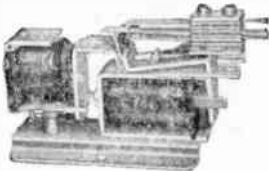
## LM Series PLATE CIRCUIT RELAYS



Designed to meet demand for high grade medium cost plate circuit relays in both single and double pole contact arrangements. Large coils are particularly sensitive. The single pole LM operates on as low as .015 watts, the double pole types on .070 watts. Applicable to smoke control, packaging, counting and other electronic control circuits. Contacts supplied are 3/16" fine silver. Approximate size of single pole units 2 1/4" x 1 3/8" x 2 3/8" high. Double pole units 2 1/4" x 2 1/8" x 2 3/8" high. When ordering, specify coil resistance.

DESCRIPTION	Coil Resistance Ohms	SINGLE THROW			
		Normally Open	Net	Normally Closed	Net
SPST	2500	LM-1	\$2.10	LM-2	\$2.15
	5000		2.40		2.45
	10000		2.75		2.85
DPST	2500	LM-7	3.00	LM-8	3.05
	5000		3.25		3.30
	10000		3.65		3.70
DOUBLE THROW					
SPDT	2500	LM-5			2.30
	5000				2.55
	10000				2.95
DPDT	2500	LM-11			3.40
	5000				3.65
	10000				4.05

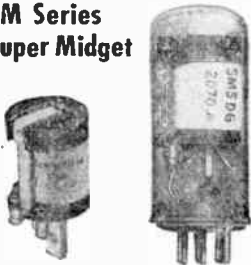
## EL Series MULTIPLE CONTACT LATCHING RELAYS



Available in all contact combinations up to and including four pole double throw as shown under SU series. Actuating and latching coils are available for DC voltages up to 115 or AC voltages up to 230. Actuating coils require 1.5 to 2.5 watts.

EL1A	NET	EL7A	NET	EL12A	NET	EL15A	NET
EL1D	\$3.60	EL7D	\$3.95	EL12D	\$4.40	EL15D	\$4.75
EL2A		EL8A		EL13A		EL16A	
EL2D		EL8D		EL13D		EL16D	
EL5A	\$3.75	EL11A	\$4.30	EL14A	\$4.95	EL17A	\$5.40
EL5D		EL11D		EL14D		EL17D	

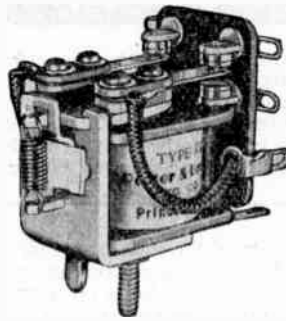
## SM Series Super Midget



This subminiature relay weighs less than 1/2 oz. and is less than 1/4 cubic inch in volume. Contacts are SPDT pure coined silver rated at .25 amp. 115 V 60 cy. load. The "D" or voltage operating types can be wound for any specified DC voltage up to 115 and draw approximately .5 watt. The "L" or current operating types can be wound to maximum of 8000 ohms which gives minimum pull-in of 3 ma at 75 milliwatts. "G" version hermetically sealed in miniature tube glass envelope with standard 7 pin base.

List Price	Nominal Coil		List Price	List Price	Coil Resistance Ohms	List Price
	Voltage	Amps				
\$1.25	0.3 - 34	2.1 - .016	\$2.15	\$1.50	0.155 to 1800	\$2.40
1.35	35 - 48	.017 - .0116	2.25	1.60	1801 to 3400	2.50
1.65	49 - 60	.0117 - .0093	2.55	1.90	3401 to 5200	2.80
1.90	61 - 75	.0092 - .0075	2.80	2.15	5201 to 8000	3.05

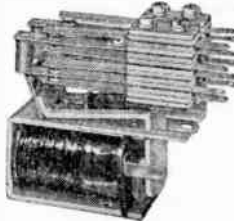
## KR Series Small Light Duty



A relay designed for application where size and weight are important. Sturdy and efficient. In applications where operating current is not too limited, the DC types can be adjusted to withstand the vibration encountered in most aircraft applications. Ideal for sub-chassis mounting and switching of RF or AF circuits. Contacts are rated at 3 amperes 110 volts, 60 cycle non-inductive. Approximate size of KR11D 1 3/16" x 1 11/16" x 1 1/4" high. When ordering, specify coil voltage and frequency.

Description	A.C. RELAYS 6-12-24-115 Volts				D.C. RELAYS 6-12-24-60 Volts			
	Normally Open	Net	Normally Closed	Net	Normally Open	Net	Normally Closed	Net
SPST	KR1A	\$2.00	KR2A	\$1.95	KR1D	\$1.90	KR2D	\$1.85
Heavy Duty SPST	KR3A	2.40	KR4A	2.35	KR3D	2.30	KR4D	2.25
	KR7A	2.40	KR8A	2.35	KR7D	2.30	KR8D	2.25
SPDT	KR5A			2.00	KR5D			1.90
DPDT	KR11A			2.50	KR11D			2.40
A.C. coils up to 117 volts at above prices.					Add 25c to above prices for coils of 3500 to 6000 ohms. From 5001 to 6000 ohms add 35c.			

## SU Series MULTIPLE LEAF RELAYS



Unique construction provides many valuable features at low cost. Larger coil space permits most efficient winding for higher voltages and lower consumption. May be mounted either vertically or horizontally, terminals easily accessible in either mounting. Suitable for applications such as signal or alarm controls, remote indicators, temperature controls, overload or underload protective devices, etc. Contacts rated at 4 amperes 115 volts AC non-inductive load. Contact combinations up to and including 4-pole double throw. DC types require 1.5 watts actuating power. Dimensions of SU17A (illustrated) are 2 1/2" x 1 7/16" x 2 1/2" high. When ordering, specify coil voltage and frequency.

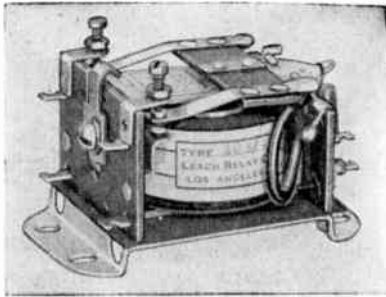
Description	A.C. RELAYS 6-12-24-115-230 Volts				D.C. RELAYS 6-12-24-115 Volts			
	Normally Open	Net	Normally Closed	Net	Normally Open	Net	Normally Closed	Net
SPST	SU1A	\$1.95	SU2A	\$1.95	SU1D	\$1.95	SU2D	\$1.95
DPST	SU7A	2.45	SU8A	2.45	SU7D	2.35	SU8D	2.35
3PST	SU12A	2.90	SU13A	2.90	SU12D	2.80	SU13D	2.80
4PST	SU15A	3.30	SU16A	3.30	SU15D	3.20	SU16D	3.20
SPDT	SU5A			2.15	SU5D			2.15
DPDT	SU11A			2.70	SU11D			2.70
3PDT	SU14A			3.15	SU14D			3.15
4PDT	SU17A			3.65	SU17D			3.65
Add 63c to above prices for coils above 117 volts.					Add 63c to above prices for coils over 60 volts.			

# POTTER & BRUMFIELD

PRINCETON, INDIANA

EXPORT SALES AT 2020 ENGINEERING BLDG., CHICAGO 6, U.S.A.

# LEACH RELAY CO.



**BASE DIMENSIONS:** 1½" x 2-9/16", overall height 1-11/32"

**WEIGHT:** 4½ ounces.

**RESISTANCES:** 5,000 Ohms or 10,000 Ohms.  
**Type**  
**No.**

1037 Double Pole, Double Throw, 5,000 Ohms.

1037 Double Pole, Double Throw, 10,000 Ohms.

Be sure to specify coil resistance when ordering.

These Leach Relays are considered standard items within the trade. These relays are maintained in shelf-stock supply in order to expedite shipment to jobbers throughout the United States.

For more than thirty years Leach has manufactured quality relays. This vast experience in engineering design and manufacturing ability is incorporated in these standard relay designs.

## SENSITIVE METAL BASE RELAY

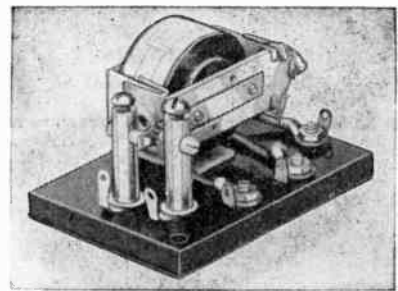
### TYPE 1037 SERIES

This Relay is constructed for sensitive operation, and has ⅛" pure silver contacts mounted on screws to provide adjustments on top contacts which are capable of carrying 1 Ampere at 115 Volts, AC, Non-inductive. With these adjustment screws, the air gap can readily be adjusted so that the Relay can be set to pull in at some predetermined coil current. It is supplied at DPDT only. Nothing is grounded to the metal base. The minimum reliable coil consumption is .040 watts. It will operate on a good deal less, but the adjustment becomes fairly critical on these low values.

## SENSITIVE DIRECT CURRENT RELAYS

### TYPE 1032 SERIES

This Relay is used extensively in closed circuit burglar alarm systems, in the plate circuit of electron tubes, as secondary Relays for micro-ampere Relays, etc. It is a very fine all-around low current, high resistance Relay, capable of withstanding considerable vibration without affecting its operation. It is equipped with an adjustable spring and adjustable stationary contacts, fitted with set screws. All contacts are pure silver and capable of carrying 1 Ampere, 115 Volts, AC, Non-inductive. This Relay is pigtailed to prevent current passing through the hinge part. The contact system is SPDT, and minimum practical coil wattage is .015 watts.



**BASE DIMENSIONS:** 2" x 2¾", overall height, 1-11/16."

**WEIGHT:** 6 ounces.

**RESISTANCES:** 5,000 Ohms or 10,000 Ohms.

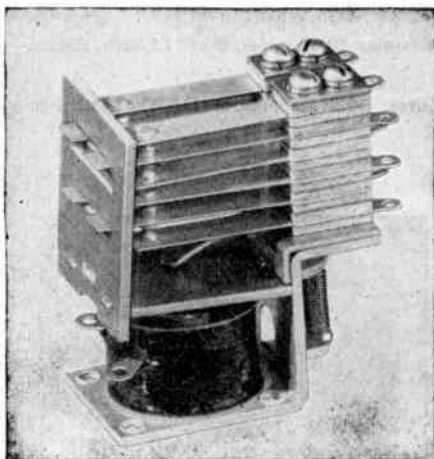
**Type**

**No.**

1032 Single Pole, Double Throw, 5,000 Ohms.

1032 Single Pole, Double Throw, 10,000 Ohms.

Be sure to specify coil resistance when ordering.



#### Type Number

6-C 7-C Single Pole, Double Throw.  
 6-2C 7-2C Double Pole, Double Throw.  
 6-4C 7-4C 4-Pole Double Throw.

## MULTIPOLE RELAYS

### TYPE 6 & 7 SERIES

This Relay is the most versatile Relay for its size in the Leach line, and is ideal for industrial and radio applications where currents to be handled by the contact systems do not exceed 8 Amperes at 115 VAC, Non-inductive. By using the desired stationary contacts, many combinations are available. For example, on the 7-4C Relay one could have various combinations of double-pole, single-pole open, single-pole closed, etc., as required. All contacts are pure silver and are mounted on heavy-plated phosphor-bronze pole pieces, which are designed to give a wiping action and positive contact, pressure. Relay provides solder lugs for connecting coil and contact systems.

**COILS:** 6 Volt Direct Current Coils consume approximately 3 watts, 6 or 115 VAC Alternating Current Coils consume 6V/A approximately.

**CONTACTS:** Heavy fine silver contacts ⅛" diameter. Will carry loads up to 8 Amperes at 115 VAC, Non-inductive.



# LEACH RELAY CO.



## MIDGET RELAYS

### TYPE 223-227 & 323-327 SERIES

ENGINEERED in miniature to weigh less than 2 ounces and measures from one to  $1\frac{3}{4}$  inches in length, Leach Midget Relays dependably handle contact loads of up to 2 Amperes at 115 Volts AC, Non-inductive. Because of their space and weight saving factors, Midgets expand the range of control by Relays in many products where previous methods are considered unprofitable.

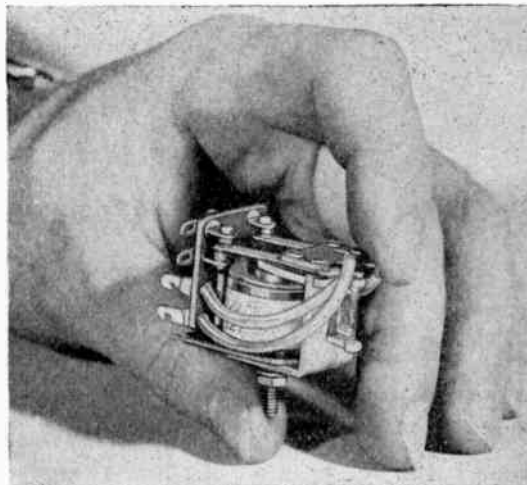
Supplied in a variety of contact arrangements, with moving contact poles insulated from the armature and frame, and with coils for operation on either AC or DC. The high quality, well-known in our standard and larger size Relays, is used throughout.

**STANDARD COILS:** 6 Volt Direct Current Coils consume approximately .750 watts of Alternating Current 6 or 115 Volts, approximately 4 V/A.

**CONTACTS:**  $\frac{1}{8}$ " diameter Fine Silver, rated 2 Amperes at 115 VAC, Non-inductive.

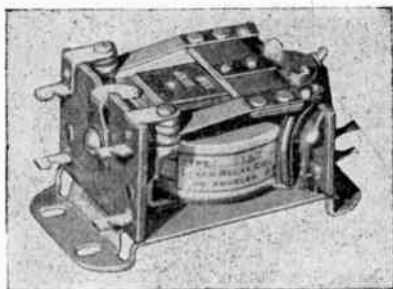
**DIMENSIONS:** SP —  $1\frac{5}{16}$ " x  $1\text{-}13/16$ "  
DP —  $1\text{-}3/16$ " x  $1\text{-}13/16$ "

Overall height— $1\frac{1}{4}$ " not including mounting stud.



**MOUNTING:** Single No. 6-32 stud,  $7/16$ " long.  
**WEIGHT:** 1.5 ounces approximately.

Type Number		
DC	AC	
223	323	SPDT
227	327	DPDT



## METAL BASE STYLE

### TYPE 1057 & 1157 SERIES

THESE RELAYS are ruggedly built for industrial uses and are fitted with  $\frac{1}{4}$ " fine silver contacts for handling heavier currents. Phosphor-bronze, nickel-plated, is used for the pole pieces. Nothing is grounded to the frame. All parts and pieces are so constructed that nothing can twist or turn out of alignment.

**DIRECT CURRENT:** Coil consumption 1.5 watts, 6 Volts.

**ALTERNATING CURRENT:** Coil consumption 50-60 cycles, 6 or 115 Volts, approximately 4 V/A.

**CONTACTS:**  $\frac{1}{4}$ " diameter Pure Silver. 12.5 Amperes at 115 Volts AC, Non-inductive.

**BASE DIMENSIONS:**  $1\frac{5}{8}$ " x  $2\frac{3}{4}$ "; overall height  $1\frac{3}{8}$ ".

**WEIGHT:** 5 ounces.

Type Number		
DC	AC	
1057	1157	DPDT

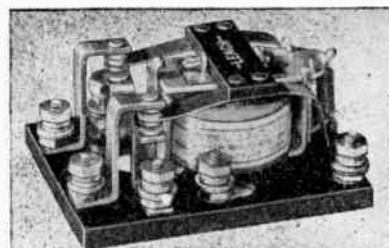
## STANDARD SIZE CIRCUIT CONTROL RELAYS

### TYPE 1257 & 1357 SERIES

This excellent Relay has many applications where it is not desirable to use solder terminal connections. They are highly insulated and made of the best materials obtainable. The magnetic circuit is exceptionally high grade of magnetic iron, heavily cadmium-plated. The contacts are  $\frac{1}{4}$ -inch pure silver, slightly crowned, and are rated at 12.5 Amperes, 115 Volts AC, Non-Inductive.

Ac coils consume 6 V/A, 6 or 115 Volts AC.

DC coils consume 1.5 watts, 6 Volts DC.



**BASE DIMENSIONS:**  $\frac{1}{4}$ " black Bakelite, 2- $3/16$ " x 3"; overall height, 1- $7/16$ "

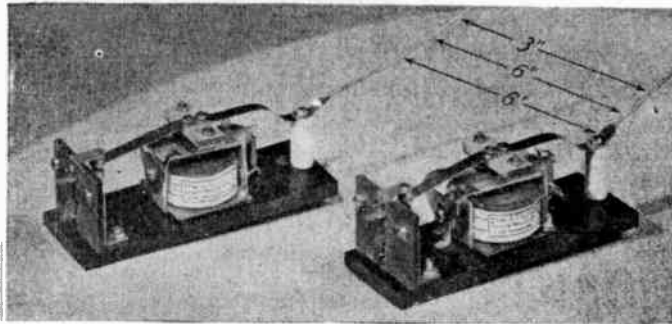
**WEIGHT:** 7 ounces.

Type Number		
DC	AC	
1257	1357	DPDT

# LEACH RELAY CO.



## RADIO AND HIGH FREQUENCY RELAYS—ANTENNA TRANSFER



### TYPE 1623-S9 & 1723-S9

These Relays are exactly the same as above, except that a  $\frac{1}{8}$ -inch fine silver SPST Normally Open auxiliary contact has been added. Usually one these relays is paired with one of the above types\*, in order to provide the auxiliary contact for the power supply. This may also be used to close a power Relay, for grounding, or for controlling light power circuits.

AC coils consume approximately 6 V/A, 6 or 115 Volts, 50-60 cycles.

DC coils consume approximately 3.5 watts, 6 Volts DC.

**DIMENSIONS:**  $1\frac{1}{2}$ " x  $4\frac{5}{8}$ "; overall height,  $1\frac{3}{4}$ ".

**WEIGHT:**  $6\frac{1}{4}$  ounces, approximately (each relay).

Type Number		
DC	AC	
1623	1723	SPDT
1623-S9	1723-S9	SPDT, with $\frac{1}{8}$ " Aux. Cont.

\*Usually one No. 1723 and one No. 1723-S9 are paired for AC use or one No. 1623 and one No. 1623-S9 are paired for DC use.

## MYCALEX AND ISOLANTITE

### TYPE 1623 & 1723

This new Idea for antenna change-over eliminates the major drawback of most Relays now used for this purpose. The spacing between leads, heretofore has been limited to the spacing between the Relay contact strips. A pair of the above matched Relays permits any desired spacing between antenna lead-out wires whether 6 inches, or 6 feet.

Maximum high frequency insulation is provided through the use of heavy Mycalex panels, and Isolantite insulators. The Relays are designed with a wide air gap,  $\frac{1}{4}$  inch pure silver contacts with a SPST arrangement.

They will withstand over 4000 volts RMS, 60-cycle hi-pot test between contacts and between contacts and frame on ground.

## RADIO AND HIGH VOLTAGE RELAYS

### CERAMICS

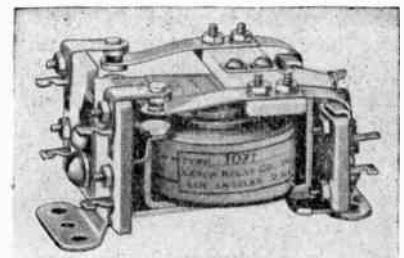
#### TYPE 1077 & 1177 SERIES

This is an ALSiMag Insulated RF Relay designed for more or less universal service, such as police mobile radio, aircraft and amateur installations. Nothing has been left undone to make this Relay the best of its kind. The pole pieces are nickel-plated, phosphor-bronze. The main contacts are  $\frac{1}{4}$ " pure silver. All iron parts cadmium plated. The tension spring is stainless steel.

No. 1077C and 1177C have Auxiliary  $\frac{1}{8}$ " contacts which provide a third center pole on Relay. They are grounded to the frame, but not to the base of the Relay.

**WEIGHT:** 5 to  $5\frac{1}{2}$  ounces.

Type Number		
DC	AC	
1077	1177	DPDT
1077-C	1177-C	DPDT, with Aux. SPDT.



**CONTACTS:**  $\frac{1}{4}$ " Pure Silver—Double Pole, Double Throw.

**COIL DATA:** 6 Volts DC,  $2\frac{1}{2}$  watts, 6 or 115 Volts AC, 50-60 cycles, 6 V/A.

**DIMENSIONS:**  $1\frac{1}{2}$ " wide by  $2\frac{3}{4}$ " long by  $1\frac{1}{2}$ " high.

Mounting hole centers,  $2\frac{5}{8}$ ".

Center holes topped 6-32.

Outer holes clear 6-32.



## RADIO AND HIGH VOLTAGE RELAYS

### MYCALEX

#### TYPE 1601-MX & 1701-MX

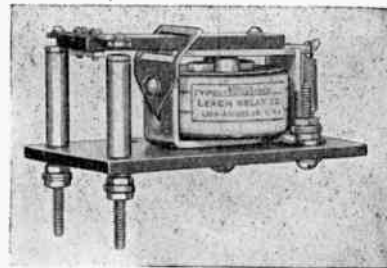
This Relay was designed to control a high voltage radio frequency circuit. Contacts are  $\frac{1}{4}$ " pure silver, SPST normally open, double break. Metal spacers are supplied for mounting.

AC coils consume 6 V/A, or 115 Volts, 50-60 cycles AC.

DC coils consume approximately 3.5 watts, 6 Volts DC.

DIMENSIONS:  $1\frac{3}{4}$ " x 3" overall height, not including studs or mounting spacers,  $1\frac{1}{2}$ ".

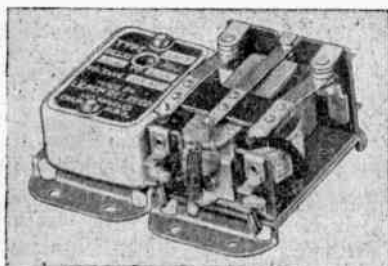
WEIGHT: 8 ounces.



Type Number

DC AC

1601-MX 1701-MX SPST-DB Normally open.



BASE DIMENSIONS:  $3\frac{1}{4}$ " x  $2\frac{3}{4}$ ", overall height,  $1-7/16$ ".

Type Number

DC AC

1057-T 1157-T DPDT.

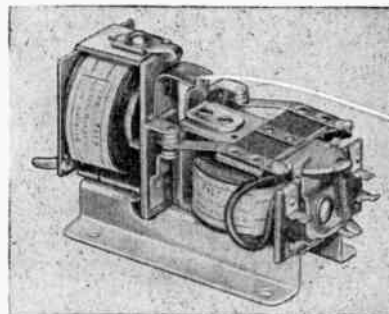
### TIME DELAY RELAY

#### TYPE 1057 & 1157 T SERIES

This Thermo Element Time Delay Relay is primarily for use on vacuum tube transmitters, but may also be used for a wide variety of other applications. They are all made DP, which may be used as normally open, normally closed or DT. The contacts are  $\frac{1}{4}$ " pure silver, rated  $12\frac{1}{2}$  Amperes, 115 Volts AC, non-inductive. The center pole, as shown, always is used for controlling the thermo element, which provides a variable delay of from 20 seconds to 1 minute. After the coil is energized, the Thermo element drops out of the circuit, cooling for the next cycle.

STANDARD COILS: AC—6 and 115 Volts (6 V/A)

DC—6 Volts—(1.5 Watts)



DIMENSIONS:  $1\frac{1}{2}$ " x  $3\frac{3}{8}$ "; height 2-1/16".

WEIGHT: 8 ounces.

Type Number

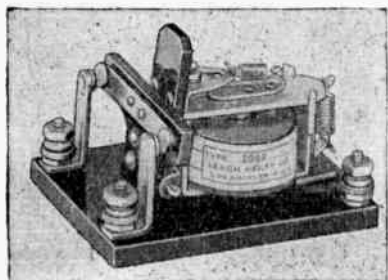
2417 DPDT.

Specify voltage and whether for AC or DC.

### LATCH TYPE ELECTRICALLY RESET

#### TYPE 2417

This type Relay fits many applications where it is not desirable to have current continuously on the coil. The mechanical arrangement is such that after the pull-in coil is energized the armature closes and locks, closed by a mechanical latch on the armature of the Relay coil. The pole pieces are phosphor-bronze, and canvas-base natural Bakelite is used for the end panels and the pole mounting strip. The entire Relay is mounted on a metal base. The contacts are  $\frac{3}{8}$ " diameter pure silver rated 8 Amperes at 115 Volts AC. Non-inductive. This Relay is supplied with 2—6 or 115 Volt AC coils or with 2—6 Volt DC coils.



Type Number

1042 SPST Normally closed—double break. Contact rating 10 Amp., 115 Volts AC.

### LIGHT DUTY OVERLOAD TRIP RELAYS

#### TYPE 1042 SERIES

The Relays shown are used as safety devices on electronic apparatus for the protection of the equipment against excessive currents. When current reaches a predetermined value the Relay is pulled in allowing the contacts to snap open and at the same time locking the armature closed. To reset the contacts, the coil circuit must be opened before pressing the Bakelite first finger. These Relays are supplied with the coil circuit highly insulated from the contacts; however, to use them as circuit breakers the coils and contacts may be connected in series.

Commonly used for the protection of power tubes. In this service the coil is put in series with the negative side of the plate supply and the contacts are in series with the transformer primary or the coil of the power contactor.

These Relays are all adjustable for the trip-out setting to approximately 20% plus or minus of their designated rating. In ordering it is necessary that you specify the approximate current on which they are to operate. Supplied in 2 standard coils: 250 MA or 500 MA.

# ALLIED RELAYS

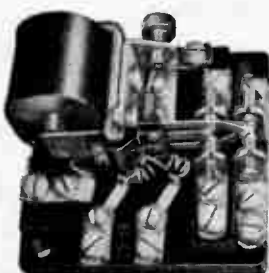


## "RA" RELAY

A co-axial relay single-pole, double-throw, for mobile or stationary, two-way radio use. Will handle a maximum of 75 watts of radio frequency up to 150 megacycles when inserted in 52 ohm—terminated transmission line (RG-8U Cable).

	Coil No.	Volts	Amperes	Resistance	Net Price
DC—	31	6	.46	13 ohms	\$9.00
AC—	41	115	.026	1100 ohms	\$9.50

Dimensions: 2" x 2<sup>7</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>4</sub>"



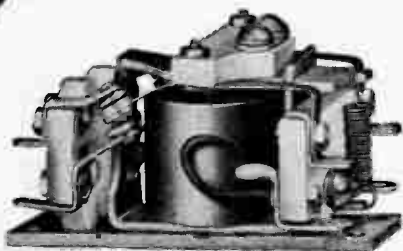
## "BK" RELAY

Highly sensitive, plate circuit, double-pole, double-throw relay, having universal adjustments with wide range; nickel-iron magnetic core, stainless steel-pin hinge and screw driver binding posts.

	Volts	Current	Power Rating	Resistance	Net Price
DC—	18	1.5 Ma.	24 milliwatts	12000 ohms	\$8.20

Dimensions: 2<sup>5</sup>/<sub>8</sub>" x 2<sup>5</sup>/<sub>8</sub>" x 1 11/16"

Contact Power Ratings: 5 Amp. at 115 VAC non-inductive  
1 Amp. at 24 VDC non-inductive



## "HR" RELAY

A double-pole, double-throw, dual purpose relay for both radio frequency antenna transfer and power applications—can be generally applied for stationary or mobile operational use. Contains ceramic insulation.

	Coil No.	Volts	Amperes	Resistance	Net Price
DC—	28	6	.500	12 ohms	\$5.10
	31	12	.240	50 ohms	\$5.10
	41	115	.026	4420 ohms	\$5.50
AC—	36	115	.050	460 ohms	\$5.60

Dimensions: 1<sup>1</sup>/<sub>2</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 2 11/16"

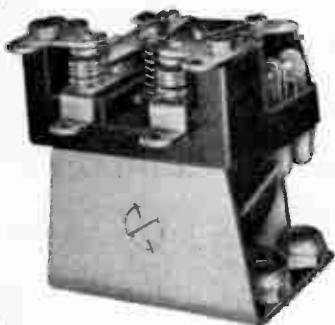
Contact Power Ratings: 15 Amp. at 115 VAC non-inductive  
15 Amp. at 24 VDC non-inductive



## ALLIED CONTROL COMPANY, INC.

2 EAST END AVENUE, NEW YORK 21, NEW YORK

# ALLIED RELAYS



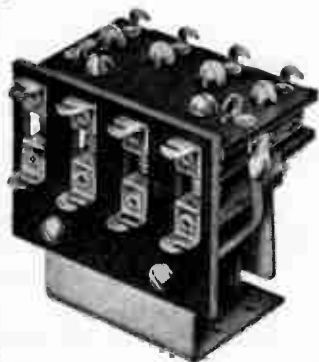
## "BO" RELAY

Allied's original time tested and proven, compact, high powered, general purpose relay. Contains molded insulation throughout. A double-pole, double-throw relay with 15 ampere contacts.

	Coil No.	Volts	Amperes	Resistance	Net Price
DC—	29	6	.423	14.2 ohms	\$4.18
	35	24	.108	230 ohms	\$4.24
AC—	36	115	.043	445 ohms	\$4.62

Dimensions:  $1\frac{7}{8}'' \times 1\frac{1}{2}'' \times 1\frac{1}{8}''$

Contact Power Ratings: 15 Amp. at 115 VAC non-inductive  
15 Amp. at 24 VDC non-inductive



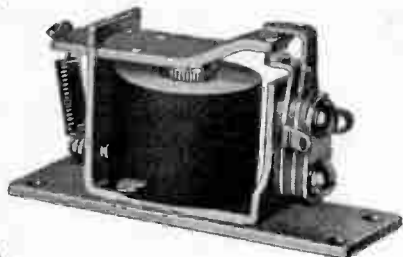
## "PO" RELAY

A three and four pole, double-throw, general purpose power relay having bakelite insulation—can be applied for both stationary and mobile operational use.

	Coil No.	Volts	Amperes	Resistance	Net Price	
DC—	34	24	.106	230 ohms	3 POLE \$4.20	4 POLE \$4.70
AC—	33	115	.100	145 ohms	\$4.50	\$5.00

Dimensions:  $2\frac{1}{4}'' \times 1\frac{5}{8}'' \times 1\frac{1}{8}''$

Contact Power Ratings: 15 Amp. at 115 VAC non-inductive  
15 Amp. at 24 VDC non-inductive



## "PA" RELAY

This is an inexpensive, single-pole, double-throw general purpose power relay—can be used as a plate circuit relay. (armature grounded)

	Coil No.	Volts	Amperes	Resistance	Net Price
DC—	32	6	.075	78 ohms	\$2.98
	35	12	.035	325 ohms	\$2.98
	41	110	.026	4420 ohms	\$3.20
	42	Plate Circuit	.007	8000 ohms	\$3.40
AC—	24	6	.800	1.5 ohms	\$2.74
	37	115	.050	530 ohms	\$2.88

Dimensions:  $2\frac{1}{4}'' \times 1\frac{9}{16}'' \times 1\frac{7}{16}''$

Contact Power Ratings: 8 Amp. at 115 VAC non-inductive  
8 Amp. at 24 VDC non-inductive



## ALLIED CONTROL COMPANY, INC.

2 EAST END AVENUE, NEW YORK 21, NEW YORK

**THERMOSTATIC**

**AMPERITE**

**DELAY RELAYS**

GLASS ENCLOSED • HERMETICALLY SEALED • A.C., D.C., OR PULSATING CURRENT



**EXCLUSIVE  
FEATURES  
of  
AMPERITE  
THERMOSTATIC  
DELAY  
RELAYS**

- Actuated by a heater.
- Operates on A.C., D.C., or Pulsating Current.
- Hermetically sealed, Amperite Relays are not affected by altitude, moisture or other atmospheric conditions.
- Compact, lightweight and inexpensive.

**TECHNICAL CHARACTERISTICS**

**CIRCUITS:** SPST only — Normally open or normally closed.

**HEATER WATTAGE:** 2 W prox. — Heaters can be operated continuously.

**CONTACT RATING:** 115 V - 3A A.C. (or 440 V - 1.5A A.C.); Maximum voltage between contacts and heater — 1500 V. D.C.

**AMBIENT TEMPERATURES:** Relays are compensated for temperatures of  $-55^{\circ}$  to  $+70^{\circ}$  C.

**LIFE:** With 115 V - 3A A.C., non-inductive, at least 200,000 operations.

**BASE WIRING:** Heater — Prongs 2-3; Contacts — 5-7.

**LIST PRICE:** Standard types of relays — \$4.00 each.

**DEALER COST:** . . . . . — \$2.40 each.

**DELIVERY:** The types shown in bold type are most popular, and usually available from stock. Other types delivered in approximately 3 weeks.

Delay-Seconds	Tolerance-Seconds	NORMALLY OPEN CONTACTS						NORMALLY CLOSED CONTACTS					
		HEATER VOLTAGES						HEATER VOLTAGES					
		2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.	2.5 V.	5.0 V.	6.3 V.	12 V.	26 V. (22-30)	115 V.
2	± 1	2N02	5N02	<b>6N02</b>	12N02	26N02	115N02	2C2	5C2	<b>6C2</b>	12C2	26C2	115C2
5	± 2	2N05	5N05	<b>6N05</b>	12N05	26N05	115N05	2C5	5C5	<b>6C5</b>	12C5	26C5	115C5
10	± 3	<b>2N010</b>	5N010	<b>6N010</b>	12N010	<b>26N010</b>	<b>115N010</b>	2C10	5C10	<b>6C10</b>	12C10	<b>26C10</b>	<b>115C10</b>
15	± 3	2N015	5N015	<b>6N015</b>	12N015	26N015	115N015	2C15	5C15	<b>6C15</b>	12C15	<b>26C15</b>	<b>115C15</b>
20	± 4	2N020	5N020	<b>6N020</b>	12N020	26N020	115N020	2C20	5C20	<b>6C20</b>	12C20	<b>26C20</b>	<b>115C20</b>
30	± 7	<b>2N030</b>	<b>5N030</b>	<b>6N030</b>	<b>12N030</b>	<b>26N030</b>	<b>115N030</b>	<b>2C30</b>	<b>5C30</b>	<b>6C30</b>	<b>12C30</b>	<b>26C30</b>	<b>115C30</b>
45	± 9	2N045	5N045	<b>6N045</b>	12N045	26N045	115N045	2C45	5C45	<b>6C45</b>	12C45	<b>26C45</b>	<b>115C45</b>
60	± 10	<b>2N060</b>	<b>5N060</b>	<b>6N060</b>	12N060	26N060	115N060	<b>2C60</b>	<b>5C60</b>	<b>6C60</b>	12C60	<b>26C60</b>	<b>115C60</b>
75	± 12	2N075	5N075	<b>6N075</b>	12N075	26N075	115N075	2C75	5C75	<b>6C75</b>	12C75	<b>26C75</b>	<b>115C75</b>
90	± 12	<b>2N090</b>	5N090	<b>6N090</b>	12N090	26N090	115N090	2C90	5C90	<b>6C90</b>	12C90	<b>26C90</b>	<b>115C90</b>
120	± 20	<b>2N0120</b>	<b>5N0120</b>	<b>6N0120</b>	12N0120	<b>26N0120</b>	<b>115N0120</b>	2C120	5C120	<b>6C120</b>	12C120	<b>26C120</b>	<b>115C120</b>

Flashers available only in low voltage heaters . . . . . 2.5, 5.0, 6.3 — 26 V.  
Flash Rate available — pre-set at factory — 15 to 100 fpm. . . . . List — \$4.00 each  
Dealer Cost — \$2.40 each

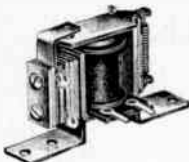


# RELAYS

## FOR AMATEUR AND INDUSTRIAL USES



### MINIATURE RELAYS



These units are very compact and are especially designed for plate circuit and general purpose control application. Overall dimensions: MR 1 7/8" x 1 3/8" x 3/8"—MRD 1 7/8" x 1 3/8" x 1 1/4". Contacts are fine silver rated 5 amps at 115 V. All AC relays are free from hum and AC chatter. The MR-2 and MRD-2 have 2500 ohm

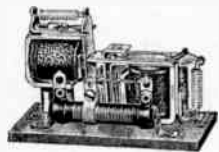


MRD

coil, will pick up at 6 ma. and 12 ma. respectively. The MR-5 and MRD-5 have 5000 ohm coils, will pick up at 3 ma. and 7.5 ma. respectively. The drop out value of these relays is approximately 50% of the pick up value.

Type	A.C.	D.C.	Contacts	Net Prices
MR-2		Plate Circuit	SPDT	\$1.50
MR-5		Plate Circuit	SPDT	2.10
MR-6		6 V.	SPDT	1.50
MR-7	6 V.		SPDT	1.59
MR-11	110 V.		SPDT	1.59
MRD-2		Plate Circuit	DPDT	2.70
MRD-5		Plate Circuit	DPDT	3.60
MRD-6		6 V.	DPDT	2.70
MRD-7	6 V.		DPDT	3.00
MRD-11	110 V.		DPDT	3.00

### OVERLOAD RELAYS

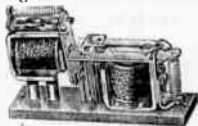


Adjustable overload relays provide accurate and positive protection against current surges and continuous overloads. Contact arrangements SPDT using 3/16" fine silver contacts. This allows the use of either audible or visual signal to advise of overload. All models are of the electrical reset type which allows remote control resetting of the relay. Size—3 3/4" x 2" x 1 1/2".

Type	Current Range	Reset Coil	Net Prices
OA-2	250-500 ma.	110 V. A.C.	\$4.50
OA-5	500-1000 ma.	110 V. A.C.	4.50
OC-2	250-500 ma.	6 V. A.C.	4.50
OC-5	500-1000 ma.	6 V. A.C.	4.50
OD-2	250-500 ma.	6 V. D.C.	4.50
OD-5	500-1000 ma.	6 V. D.C.	4.50

### LATCHING RELAYS

These relays are employed where it is not desirable to have current continuously on the coil. The latching arrangement is such that when the relay coil is energized the armature closes and locks in a closed position by mechanical latching. An electrical impulse on the reset coil releases the armature from the latch and allows the relay to assume its initial position. 3/16" fine silver contacts. Bakelite Base. Size—3 3/4" x 2" x 3/8".



Type	Reset Coil	Pull-in Coil	Net Prices
LEA	110 Volts A.C.	110 Volts A.C.	\$3.75
LEA-6	6 Volts A.C.	6 Volts A.C.	3.75
LED	6 Volts D.C.	6 Volts D.C.	3.75

### COMMUNICATION RELAYS

Ideally suited for use in telephone, remote control, signaling, communications circuits etc. High speed operation plus high sensitivity with high contact pressure. Contacts will handle 4 amps at 115 V. non-inductive load. Each relay has one make and one break contact sets. Size—3 3/4" x 1 3/4" x 1 1/2".



Type	Res. of Coil Ohms	Volts Pick-up	M.A. Pick-up	Net Prices
T10G	10,000	31	3.2	\$3.30
T83F	6,300	24	4.0	3.39
T40F	4,000	19	5.0	3.15
T10F	1,000	10	10.0	2.85
T25E	250	5	20.0	2.55

### ANTENNA CHANGE-OVER

Mycalex Insulation is satisfactory for operation up to 60 MC. Triple-X insulation for operation up to 15 MC. All models use 3/16" fine silver wiping action contacts rated at 4 amps. These relays are designed with ball-bearing armature pivot and have large contact spacing to assure minimum capacity between contact arms. The armature is designed so as to eliminate AC chatter. Size—3 1/2" x 3 1/2" x 2 3/16".

Type	Insulation	Coil Voltage	Net Prices
ABA	TRIPLE-X	110 V. A.C.	\$3.00
ABD	TRIPLE-X	6 V. D.C.	3.00
AMA	MYCALEX	110 V. A.C.	4.00
AMD	MYCALEX	6 V. D.C.	4.00



### BREAK-IN RELAYS

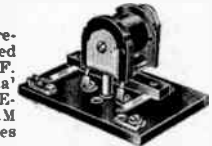
Same type of relay as above only two additional poles are added, one normally open, one normally closed. This arrangement is perfect for PUSH-TO-TALK control. Contacts etc. identical with Antenna-Change-Over Relay. Size—4 1/2" x 3 1/2" x 2 3/16".



Type	Insulation	Coil Voltage	Net Prices
BBA	TRIPLE-X	110 V. A.C.	\$4.20
BBD	TRIPLE-X	6 V. D.C.	4.20
BMA	MYCALEX	110 V. A.C.	6.00
BMD	MYCALEX	6 V. D.C.	6.00

### R.F. AND GENERAL PURPOSE RELAY

An excellent relay for R.F. or high voltage remote control. Contacts are 3/16" fine silver rated 4 amps. Designed with extremely short R.F. path, Ball-bearing armature pivot. All metal parts cadmium plated. RB Series are TRIPLE-X insulated for frequencies up to 15 MC., RM Series are MYCALEX insulated for frequencies up to 60 MC. Size—2 1/4" x 3 1/2" x 2 3/16".



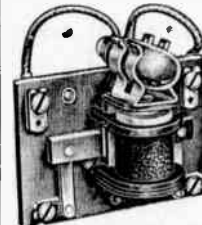
Type	Insulation	Contact Combination	Coil Voltage	Net Prices
RBA-1	TRIPLE-X	SPST (dble-break)	110 V. A.C.	\$2.10
RBD-1	TRIPLE-X	SPST (dble-break)	6 V. D.C.	2.10
RMA-1	MYCALEX	SPST (dble-break)	110 V. A.C.	2.55
RMD-1	MYCALEX	SPST (dble-break)	6 V. D.C.	2.55
RBA-2	TRIPLE-X	DPST (agle-break)	110 V. A.C.	2.25
RBD-2	TRIPLE-X	DPST (agle-break)	6 V. D.C.	2.25
RMA-2	MYCALEX	DPST (agle-break)	110 V. A.C.	3.00
RMD-2	MYCALEX	DPST (agle-break)	6 V. D.C.	3.00

### KEYING RELAY

Same specifications as RB Series except that the coil and return spring are faster acting. Follows a "Bug" with ease.

Type	Coil Voltage	Contacts	Net Prices
KBA	110 V. A.C.	SPST (double-break)	\$2.10
KBD	6 V. D.C.	SPST (double-break)	2.10
KBA-6	6 V. A.C.	SPST (double-break)	2.10

### MERCURY-SWITCH RELAY

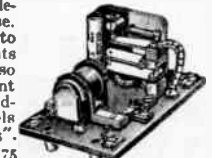


This type relay is used for controlling inductive loads and may be safely used in the presence of explosive dust, gas and vapor. This unit will safely handle a 1/4 H.P. motor or its equivalent. This single pole single throw mercury relay can easily be changed from normally open to normally closed by reversing the mercury tube in the clip. In addition this relay is equipped with SPST double break 3/16" fine silver contact sets which can be used to electrically lock this relay, or other applications. Mounts vertically with adjusting screws. Size—3 1/2" x 2 1/2" x 3 1/2".

Type	Coil Voltage	Net Prices
M8A	110 V. A.C.	\$3.75
M8A-6	6 V. A.C.	3.75
M8D-6	6 V. D.C.	3.75

### TIME-DELAY RELAY

Low cost Thermostatic Time delay relays designed for transmitting and industrial use. Prevents damage to tube filaments due to application of plate current before filaments are thoroughly heated. TD-11 is equipped so that it automatically compensates for ambient temperature changes. Time delay can be adjusted by means of screwdriver. Stock models are 110 V. A.C. Size—8 1/2" x 3 1/2" x 2 3/16". TD-11 (10-60 Sec.)—With compensator. . . . . Net \$4.75





# GENERAL CONTROL COMPANY

1203 SOLDIERS FIELD ROAD BOSTON 34, MASSACHUSETTS

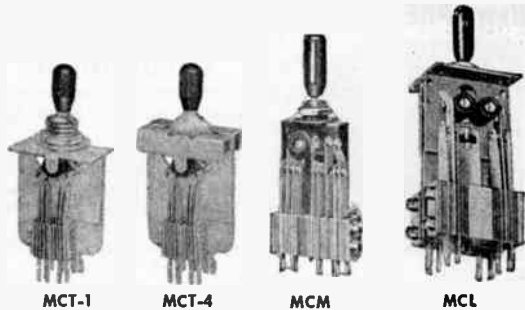


## CAM-LEVER SWITCHES

Compact lightweight switches designed for long life and trouble-free service fitting many requirements. Features include shielding between contact sections, single-hole and standard mounting centers, plus availability of popular and special build-up variations. Many types are in stock for immediate shipment. Quotations given promptly. Write for Data Sheet LS.

TYPE	AMPS.*	HIGH	WIDE	LONG**
MCT-1	1	1 1/4"	3/4"	2-5/16"
MCT-4	1	1 1/2"	3/4"	2-17/32"
MCM	5	1 1/4"	1 1/4"	2-25/32"
MCL	10	1 3/4"	1 3/8"	3-15/16"

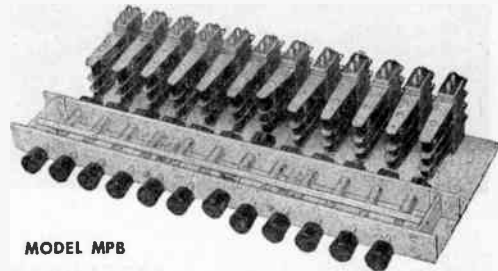
\* 125 volts, 60 cycles, non-inductive.  
\*\* From back panel to end of terminals.



FRAME TYPES	CONTACT FORMS	A	B	C	D	E	F	G	H	O	
		CIRCUIT									No Contacts
MCT	\$1.50	MCT	.36	.36	.54	.54	.72	.54	.54	.54	—
MCM	\$2.75	MCM	.55	.55	.65	.85	1.10	.65	.65	.65	—
MCL	\$3.60	MCL	.85	.85	.95	1.20	1.80	.95	.95	.95	—

## MASTER PUSH-BUTTON SWITCH

A complete heavy duty push-button switch with high current-handling ability. Furnished in from two to a maximum of twelve positions. Standard frame types are: (1) locking, (2) non-locking, (3) release-lock, and (4) accumulative locking with single-button release. Besides standard mounting illustrated, MPB switches can be furnished on right-angle frame for use where back of panel space is limited. Std. mtg. 4-7/16" deep; rt. angle mtg. 1-9/16" plus ht. of contact assembly. Pure silver contacts, phosphor bronze springs. Rating: 5 amps., 125 volts a-c (non-ind.). Write for data sheet PS.



CONTACT FORMS	A	B	G	D	E	F	G	H	O
Circuit									No Contacts
Price	\$0.55	\$0.55	\$0.65	\$0.85	\$1.10	\$0.65	\$0.65	\$0.65	

FRAME TYPES	MPB-2	MPB-3	MPB-4	MPB-5	MPB-6	MPB-7	MPB-8	MPB-9	MPB-10	MPB-11	MPB-12
CONTACT POSITIONS	2	3	4	5	6	7	8	9	10	11	12
Lock Release	\$5.00	\$5.20	\$6.40	\$7.60	\$8.80	\$10.00	\$11.20	\$12.40	\$13.60	\$14.80	\$16.60
No Two Interlock	5.50	5.95	7.40	8.85	10.30	11.75	13.20	14.65	16.10	17.55	19.60
* Accumulative Lock	See note	6.70	8.65	10.60	12.55	14.50	16.45	18.40	20.35	22.30	24.85

\*Reset button requires one position in addition to standard contact positions. Reset button is on right-hand side unless otherwise specified.  
\*Reset button normally actuates no contacts but can be used to actuate momentary contacts if required.

## FOOTSWITCHES

Models to meet every need. Sturdy cast-iron cases with durable finish. Standard rating 20 amp. 125 v. a-c. non-inductive. For heavy duty rating — 20 amp. 125/250/460 v. a-c.; 3/4 HP, 115 v. a-c. 1 1/2 HP 230 v. a-c. — add \$1.00 to price shown. Sizes: MX — 4 1/2 x 2 x 2; MC — 4" dia. x 2 1/4" h; MI — 6 3/4 x 3 x 4; MB — 8 x 5 x 5 1/4. Write for Data Sheet FS.



TYPES				CONTACT TYPES		CONTACT OPERATION	
MX-1 \$3.50	MC-11 \$5.50	MI-21 \$8.80	MB-31 \$12.50	A		Normally open	Spring return
MX-2 \$3.50	MC-12 \$5.50	MI-22 \$8.80	MB-32 \$12.50	B		Normally closed	Spring return
MX-3 \$3.50	MC-13 \$6.00	MI-23 \$9.35	MB-33 \$13.00	C		Double throw	Spring return
—	MC-14 \$8.25	MI-24 \$11.35	MB-34 \$15.00	ACO-A		First press closes switch contacts	Second press opens switch contacts
—	MC-15 \$8.75	MI-25 \$11.85	MB-35 \$15.50	ACO-C		First press transfers switch contacts	Second press restores switch contacts
—	—	MI-26 \$13.00	MB-36 \$16.50	TS-AA		1st half-throw closes 1st switch	2nd half-throw closes 2nd switch

## New! ACO SWITCH Alternate-contact-operating

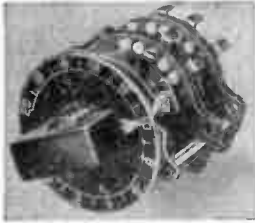
Gives the convenience of alternate-contact operation with a single push button. Features unusually long life and dependable operation. Handles up to 10 amperes, depending on model used. Single-hole mounting shown; others available; write for Data Sheet ACO.





# SWITCHES • ATTENUATORS • POTENTIOMETERS

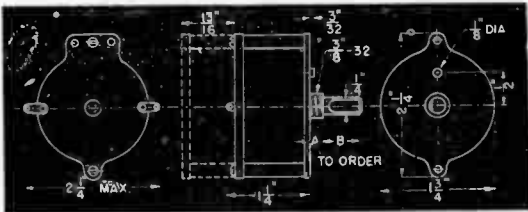
## New PRECISION INSTRUMENT SWITCH



### TYPE 2A SPECIFICATIONS:

Contact res.: 1-2 milliohms.  
Contact material: Silver Alloy.  
Contact design: Wiping, shorting and non-shorting.  
No. of contacts: 2-21 per deck single pole, 2-5 four pole.  
Spacing: 15° sh., 30° non-sh.

No. of poles per deck: One to four.  
No. of decks: As desired. Life: 20,000 cyc. min.  
Curr. carr. cap.: 3 Amp.  
Max. oper. voltage: 120V (Will stand 2,000V between contacts and to ground.)  
Insul. material: Low loss bakelite.  
Insul. res.: 10,000 megohms to ground.  
Mounting: Single hole  $\frac{3}{8}$ "-32 bushing, std. length for up to  $\frac{1}{4}$ " pnl. Special lengths to order. Size: 1  $\frac{3}{4}$ " dia.  
Detent: Ball and spring.  
List Price: First deck \$4.50; additional deck \$2.50 each; additional pole per deck \$0.25.



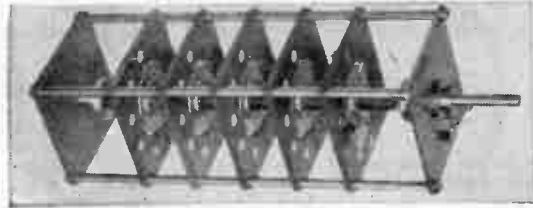
## TYPE 700 ATTENUATORS "T"-PADS



Type	Impedance	No. of Steps	Db Per Step
TA-731.5	600/600	30	1.5
TA-731	600/600	30	1
TA-722	600/600	20	2
TB-731.5	500/500	30	1.5
TB-722	500/500	20	2
TC-731.5	250/250	30	1.5
TC-722	250/250	20	2
TD-731.5	200/200	30	1.5
TD-722	200/200	20	2
TE-731.5	50/50	30	1.5
TE-722	50/50	20	2
TF-731.5	30/30	30	1.5
TF-722	30/30	20	2

## TYPE 1250 R.F. SWITCHES

This switch represents a new design necessitated by the increasing demands for switches capable of withstanding higher voltages and heavier currents.



### SPECIFICATIONS:

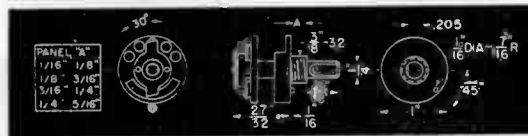
Size: Each panel 4  $\frac{1}{2}$ " x 4  $\frac{1}{2}$ ". For depth, see table.  
Insulation: Mykroy insulation good for at least 25,000V to ground, 12,500V between contacts.  
Contacts: Phosphor bronze with silver plated collector ring.  
Spacing: 36° std. unit has 6 position on 180°, special units to order.  
Shaft: Mykroy sections with flanges so decks can be added or taken off to suit. Stainless steel shaft  $\frac{3}{8}$ " dia. on both ends, can be furnished with 4" hand wheel.  
Current Carrying Capacity: 50 Amps. max. for steady load, no load switching.  
Bearing: Ball bearings at both ends.  
Detent: Ball and gear detent for positive location on contacts.  
Mounting Holes: For No. 10-32 screws on 3  $\frac{1}{4}$ " centers.  
Weight: Single pole unit—4 pounds; add approximately 1 lb. for each additional deck.

## New MINIATURE TAP SWITCH (2B)



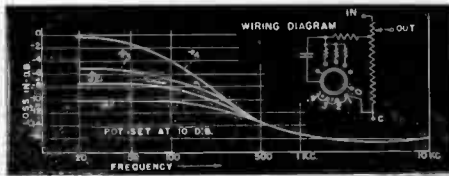
The Type 2B miniature rotary tap switch is a development widely used in military and other equipment where space is at a premium.

Price Upon Request



### SPECIFICATIONS:

Diameter 1" max., up to 12 pos. shorting, 6 pos. non-shorting. Silver contacts, wiping rotors, 30° spacing single hole mounting, low loss insulation, 3A, 120V. AC.



TYPE PB-822TC  
**TOE  
COMPENSATED  
POTENTIOMETER**  
PRICE \$12.50

**WRITE FOR**  
Complete catalogue on  
**Gain Sets  
Decade Units  
Bridges  
Precision  
Attenuators  
etc.**

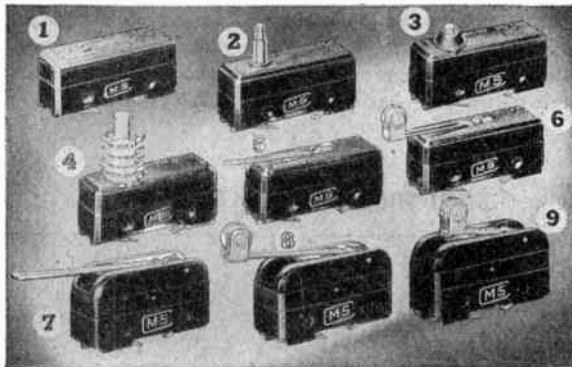
**TECH LABORATORIES, INC.** PALISADES PARK  
NEW JERSEY

# MICRO Precision Switches

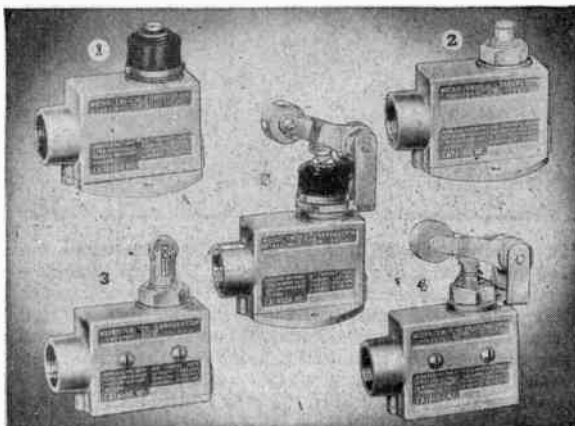
MICRO precision switches are patented snap-action switches especially designed for alternating current circuits in industrial and commercial applications, for use as limits, safeties, and interlocks. Those cataloged herein are single-pole double-throw, but may also be used normally-closed or normally-open. MICRO precision switches are Und. Lab. listed for electrical rating of 15 amperes, 125, 250 or 460 volts, a-c.

MICRO precision switches are engineers' choice for rugged, accurate, dependable, snap-action control of electrical circuits in industrial equipment.

## MICRO Basic Switches



Shown are nine popular designs of Type Z2 basic switches differing in actuators and operating characteristics. Plastic cases measure  $1\frac{1}{8}'' \times \frac{3}{4}'' \times 1\frac{1}{8}''$ . Catalog Numbers — ① BZ-2R, ② BZ-2RS, ③ BZ-2RD, ④ BZ-2RQ1, ⑤ BZ-2RL, ⑥ BZ-2RL2, ⑦ BZ-2RW, ⑧ BZ-2RW2, ⑨ BZ-2RW22.



## MICRO-LIMIT Precision Limit Switch



Heavy duty precision switch combines ruggedness with precision performance and unusual versatility. Operating head adjustable to four horizontal positions. Roller arm adjustable vertically through 360 degrees to 870 positive-lock positions. Adjustable to operate clock-wise, counter-clock-wise or in both directions. Sealed against dirt, dust, or splash of liquids. Rated at 20 amperes, 110, 220, or 460 volts, a-c. High pilot duty rating. Switch housing  $2\frac{1}{8}'' \times 1\text{-}59/64'' \times 6''$ . Catalog Number 1ML1.

## ← MICRO Die Cast Enclosed Switches

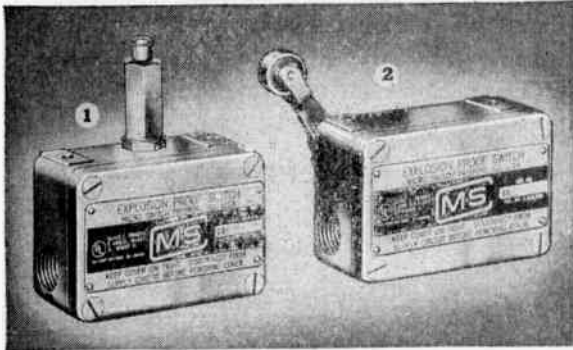
Die cast metal housings enclosing MICRO Type Z2 basic switches. Housings provide protection, conduit connection, actuating means and mounting facility. Rugged—light weight—compact—high electrical capacity—and long life. Five actuator types in either side or bottom mounting design. Housings are  $1'' \times 2\text{-}19/32'' \times 3\text{-}1/64''$ . Catalog Numbers — ① BZV-2RN, ② BZV-2RQ, ③ BZE-2RQ9, ④ BZE-2RQ2, ⑤ BZV-2RN2.

*...first name in Precision switches*



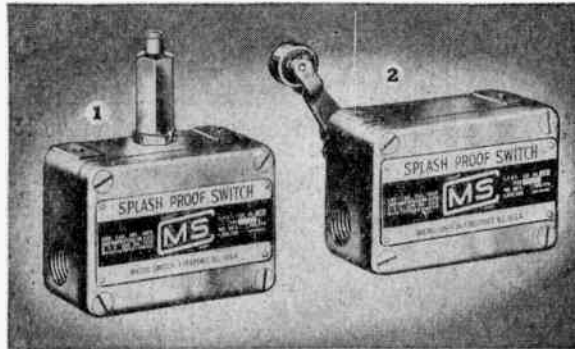
# MICRO Precision Switches

## MICRO Explosion-Proof Switches



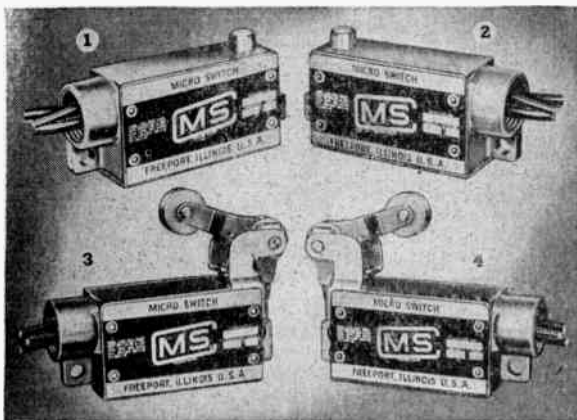
For use in hazardous atmospheres. These switches are the smallest listed by Und. Lab. for use in explosive atmospheres. They are particularly useful in chemical plants, explosives and powder plants, coal plants, petroleum refineries, and grain elevators. Sturdy housing measures 2" x 2-35/64" x 3-21/32". Catalog Numbers — ① EX-Q, ② EX-AR.

## MICRO Splash-Proof Switches



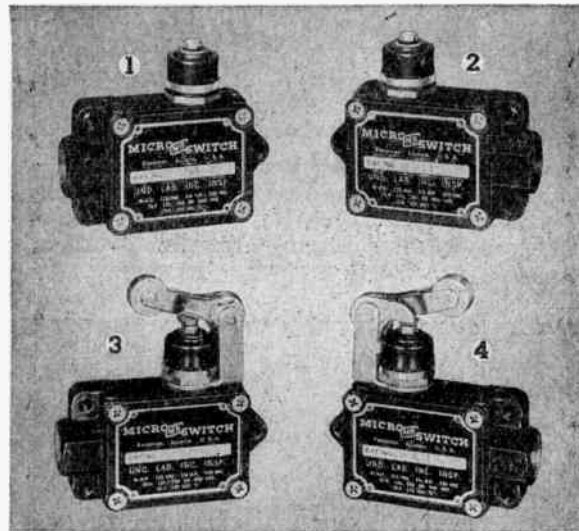
MICRO splash-proof switches are rugged cast metal housings enclosing basic switch units. For use where there is splash of oil or water. Long electrical and mechanical life, accurate repeat operation, ability to withstand severe use. Same size and design as MICRO Explosion-Proof switches. Catalog Numbers — ① OP-Q, ② OP-AR.

## MICRO Type "LN" Limit Switches



Type "LN" limit switches are for general industrial use in applications requiring accurate repeatability and long life in locations exposed to dirt, dust, and splash of liquids. Leads are sealed in conduit hub. Cover plate is gasketed. Plunger operates through sealed diaphragm. Roller arm adjustable vertically through 260 degrees. Housing measures 1" x 1-21/32" x 4-1/6". Catalog Numbers — ① BZLN-RH, ② BZLN-LH, ③ BZLN2-RH, ④ BZLN2-LH.

## BAF1 High Capacity Switches



BAF1 switches are MICRO Type "A" basic switches enclosed in die cast aluminum housings. Electrical rating — 20 amperes steady state current, and 75 amperes inrush capacity up to 460 volts, a-c. Sealed against dirt, oil, and moisture. Overtravel mechanism built into housing. Improved wiring and mounting facility. Available in right or left hand designs. Housings measure 1-5/32" x 2-5/32" x 4". Catalog Numbers — ① BAF1-2RN-RH, ② BAF1-2RN-LH, ③ BAF1-2RN2-RH, ④ BAF1-2RN2-LH.

...first name in Precision switches

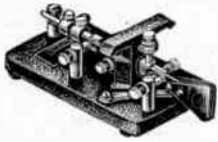






## SPEED X KEYS, PRACTICE SETS, BUZZERS

### STANDARD SEMI-AUTOMATIC KEYS



114-500, -501

Improved standard model mounted on heavy steel base 6 1/4" x 3 1/2" x 1/2". Four rubber feet insure stationary position while operating. Five adjustments with lock nuts assure dependable operation at all speeds. Smooth, easy action, adjustable from lowest to highest speeds. Vibrator arm, posts, circuit closing switch, and all machine parts heavily chrome plated for permanent finish. Heavy

brass connector strips under base insure low resistance circuit. Two black fiber paddles can be adjusted separately to best height. Vibrator bearings are perfectly aligned and free-acting. Complete with circuit-closing switch and adjustable weight. 114-500 has 1/8" coin silver contacts and black wrinkle enamel base. 114-501 has large 1/4" coin silver contacts and base is heavily chrome plated and polished to a high luster.

- 114-500 — 1/8" contacts, black wrinkle base. List Price \$17.50
- 114-501 — 1/4" contacts, polished chrome base. List Price 25.00
- 114-501L—Same as 114-501 except left handed. List Price 27.50

### AMATEUR SPECIAL MODEL SEMI-AUTOMATIC KEY



114-515

Model 114-515 is the favorite with amateurs because of its compactness and lighter weight. It has a sturdy steel base 6 1/4" x 3" x 3/8", attractively finished with black wrinkle enamel. Four rubber feet prevent slipping or tilting. Vibrator and all hardware heavily chrome plated. Two adjustable weights. Contacts are 1/8" coin silver. All adjustments have lock nuts to assure stable operation. Has no circuit closing switch.

- 114-515 —Amateur model, semi-automatic. List Price \$12.50
- 114-515L—Same as 114-515 except left handed. List Price 15.00

### JUNIOR MODEL SEMI-AUTOMATIC KEY

A light weight but rugged key for those who prefer a compact, light model. Appearance the same as the Amateur model except has a circuit closing switch. Base is die cast, 6" x 2 3/4" x 3/4". Base and frame attractively finished in black wrinkle enamel. Vibrator arm is the same as on the Standard model, with the same smooth, easy action. Fully adjustable from eight words per minute to as high a rate as desired. 1/8" coin silver contacts. Truly an outstanding value.

- 114-510—Junior model, semi-automatic. List Price \$13.50

### CORD AND PLUG FOR SEMI-AUTOMATIC KEYS



114-380

Cord and plug for quick, easy attachment of semi-automatic key across the circuit-closing switch of a standard hand key. Used almost universally by railroad telegraphers, it is also ideal for amateur service where both hand key and semi-automatic are used.

- 114-380—Cord and plug. List Price \$1.50

### STANDARD REPLACEMENT PARTS

Cat. No	Description	List Price
114-330	Adjustable weight with thumb screw	\$0.25
114-333	Self-locking adjustable weight	.50
114-350	Standard black phenolic knob	.20
114-360	Navy type black phenolic knob	.30
114-370	Single black fiber paddle	.25
114-390	1/8" U-spring coin silver contact	.60

### HEAVY DUTY KEYS



114-320, -321, -326

Heavy die cast base, chrome plated key arm, heavy brass connector strips under base. Well insulated for heavy duty service. Large 1/4" coin silver contacts. Improved Navy type knob. Adjustable steel bearings and well designed spring give a light keying touch. The finest hand key money can buy.

Cat. No.	Description	List Price
114-320	Black wrinkle enamel base	\$4.25
114-321	Polished chrome plated base	5.00
114-326	Brass wrinkle finish base	4.25



114-310, -311, -312, -316

### STANDARD KEYS

Heavy die cast base. Smooth adjustable bearings. Has provision for plugging in semi-automatic keys. Contacts are 1/8" coin silver. An attractive high quality key at low cost.

Cat. No.	Description	List Price
114-310	Black wrinkle, no switch	\$3.25
114-310S	Black wrinkle, circuit-closing switch	3.75
114-311	Chrome plated, no switch	4.00
114-311S	Chrome plated, circuit-closing switch	4.50
114-312	Gray wrinkle, no switch	3.25
114-312S	Gray wrinkle, circuit-closing switch	3.75
114-316	Brass wrinkle, no switch	3.25
114-316S	Brass wrinkle, circuit-closing switch	3.75

### AMATEUR KEYS



114-301

A high quality black phenolic base key. Adjustable, smooth-acting bearings, improved spring, pigtail connection, 1/8" coin silver contacts. All metal parts heavily nickel plated.

Cat. No.	Description	List Price
114-301	Black phenolic base, no circuit-closing switch	\$3.00
114-301S	Same as 301 except with circuit-closing switch	3.50

### PRACTICE KEYS



114-300, -305, -306

Inexpensive practice keys for beginners. All metal parts except base nickel plated. Adjustable key arm spring, smooth action bearings, 1/8" coin silver contacts.

Cat. No.	Description	List Price
114-300	Molded brown phenolic base	\$1.75
114-305	Black wrinkle finish metal base	1.90
114-306	Brass wrinkle finish metal base	1.90

### PRACTICE SET



114-450

Constant frequency buzzer and key mounted on a 4" x 6" molded brown Bakelite base, with full directions for connecting. May be used singly or in pairs for code practice.

Cat. No.	Description	List Price
114-450	Practice set	\$4.80

### CONSTANT FREQUENCY BUZZER



114-400

Molded black Bakelite base and cap. Fully adjustable, holds constant frequency. Coin silver contacts. Uses 2 dry cells or "C" battery.

Cat. No.	Description	List Price
114-400	Constant frequency buzzer	\$2.00

# The Vibroplex

**A SEMI-AUTOMATIC TELEGRAPH AND WIRELESS TRANSMITTING MACHINE**

*Embodying the latest exclusive features*



Prominent features which have been contributed to the success of the Vibroplex are:

- Simplicity • Durability
- Perfect control • Easy adjustment
- Strong carrier • Ease of manipulation
- Adaptability to changing wire conditions
- Ability to transmit perfect Morse and Continental signals at high speed

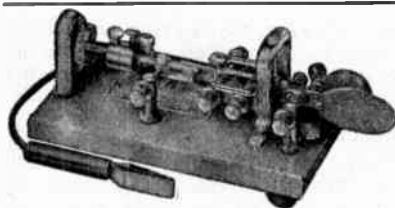
These features, which are found only in the genuine Vibroplex models illustrated on these pages, make for clear, rapid, easy transmission; relieve the arm of strain caused by sending on the ordinary key; rest

and strengthen the overworked muscles, and prevent telegrapher's paralysis.

### CLEAR, RAPID SENDING MADE EASY

The Vibroplex transmits the same grade of Morse and Continental code as the strongest clearest hand sender, faster than is possible on the ordinary key, and with less than half the labor.

There is no tensing of the muscles, no nerve strain, no pounding on the key in order to make clear, rapid signals. You simply press the lever—the machine does the rest.



Your name engraved on base, \$1.50  
Additional engraving, 15c per letter

*Left-handed models available at the additional charge of \$1.00.*

### New SUPER DE LUXE "PRESENTATION" VIBROPLEX

The Finest Bug Ever Built! 24K Gold-Plated Base Top, Patented Jewel Movement and Super-Speed Control! New patented adjustable main spring affords wider range of speed than ever obtained before in semi-automatic transmitting key. Beautifully-designed with polished chromium precision-machined parts mounted on a 24K gold-plated base top with colorful red switch knob, finger and thumb piece. This new Super-DeLuxe "Presentation" Vibroplex key at \$27.50 affords a life-time of sending enjoyment. Harder than metal, the jewels in this key reduce friction, maintain smoother, easier operation and prolong life.

Amateur Net Price

**\$29.95**

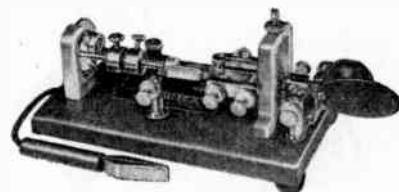
### THE Improved "ORIGINAL" VIBROPLEX

Suitable for All Classes of Transmitting work Where Speed and Perfect Morse Are Prime Essentials

This great new Vibroplex is a smooth and easy working BUG. It has won fame on land and sea for its clarity, precision and ease of manipulation. Can be slowed down to 10 words per minute or less or geared to as high rate of speed as desired. Maintains the same high quality signal at whatever speed, insuring easy reception under all conditions.

#### SPECIFICATIONS

The improved model, single lever. Two pairs of contact points: one for dots, the other for dashes. Weight, 3 lbs. 8 oz. A handsome and efficient transmitting machine, with unlimited sending possibilities. Complete with cord and wedge.

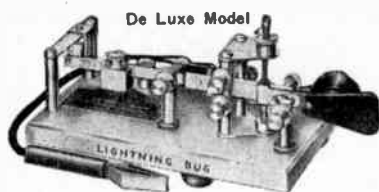


Standard—Polished Chromium top parts, black base. Amateur Net Price.....  
DeLuxe—Polished Chromium base and top parts, with jeweled movement. Amateur Net Price .....

**\$17.95**

**22.50**

*Left-handed models available at the additional charge of \$1.00.*



De Luxe Model

### THE "LIGHTNING BUG" VIBROPLEX

*High Quality Signals at All Speeds*

#### SPECIFICATIONS

Single lever, with improved flat pendulum, instantly adjustable dot contact spring, circuit breaker parallel with pendulum. Two pairs of contact points, one for dots, the other for dashes. Complete with cord and wedge. Weight 3 lbs. 8 oz.

Standard—Polished Chromium top parts, black base.

Amateur Net Price .....

**\$15.95**

DeLuxe—Polished Chromium base and top parts, with jeweled movement.

Amateur Net Price .....

**21.50**

*Left-handed models available at the additional charge of \$1.00.*

The

# Vibroplex



## Telegraph & Wireless Transmitting Machines

### THE "ZEPHYR" VIBROPLEX

A Genuine Vibroplex. Slightly Lighter in Weight.  
Having Plenty of "Pep" and "Power"

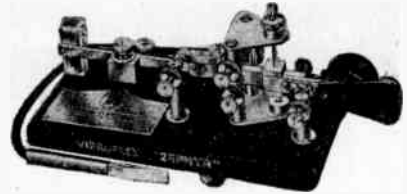
Smaller and more compact but designed in most details the same as the "Lightning Bug" model. Planned to meet the demand for a low priced, efficient and high speed transmitter for telegraph use.

#### SPECIFICATIONS

Single lever with standard size contact points. Mounted on slightly smaller base. Weight 3 lbs. 2 oz. Equipped with circuit closer, cord and wedge. Standard finish only. Chromium finished top parts, with black crystal base.

Amateur Net Price..... **\$13.95**

*Left-handed models available at the additional charge of \$1.00.*



### THE "CHAMPION" VIBROPLEX

*For Radio Use Only*

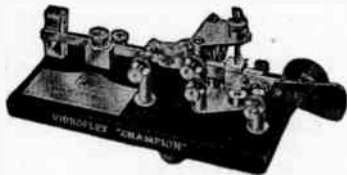
The new "Champion" is an inexpensive transmitter having exceptional sending qualities . . . clarity . . . speed . . . sending ease, which will appeal alike to amateur and professional radio operators. Designed to meet the demand for a low priced Vibroplex in the radio field.

#### SPECIFICATIONS

Single lever with two pairs of contact points. Mounted on large standard size base. Weight 3 lbs. 8 oz. Without circuit closer, cord and wedge. Standard finish only. Chromium finished top parts, with black crystal base.

Amateur Net Price..... **\$12.95**

*Left-handed models available at the additional charge of \$1.00.*



Designed to Fulfill the Demand for  
a Low Priced Radio Transmitter

### THE "BLUE RACER" VIBROPLEX

Small and compact, the "Blue Racer" Vibroplex can be carried around and never be in the way. Embodies the same sending possibilities, the same carrying qualities, the same strength and durability as the larger models. Built especially to meet the demand of telegraphers requiring a small, lightweight and efficient sending machine.

#### SPECIFICATIONS

Single Lever. Two pairs of contact points—one for dots, the other for dashes. Weight, 2 lbs. 8 ozs. Complete with cord and wedge.

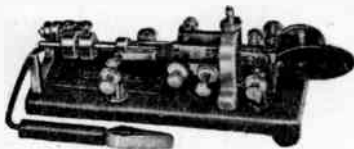
Standard—Polished Chromium top parts, black base . . .

Amateur Net Price ..... **\$17.95**

DeLuxe—Polished Chromium base and top parts, with

jeweled movement. Amateur Net Price..... **22.50**

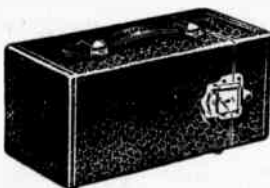
*Left-handed models available at the additional charge of \$1.00.*



Very similar to the Original Vibroplex except that it is only half the size. Suitable for all classes of telegraph work and in high favor with wireless men.

### VIBROPLEX CARRYING CASE

Keeps the Machine Free from Dust, Dirt and Moisture  
Insures Safe-keeping When Not in Use



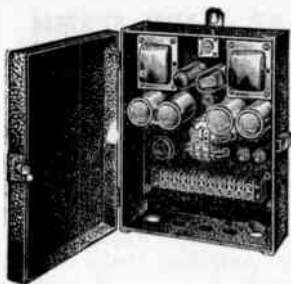
A cloth-lined case, finished in handsome simulated black morocco. Corners are reinforced, adding to its durability and attractiveness. A flexible leather handle makes it more convenient to carry. Has lock and key.

PRICE ..... **\$5.75**

The JEWELS used in the DeLuxe Model Vibroplexes are the same as placed in the world's finest precision made watches and instruments.

A JEWEL bearing main lever insures a "LIFETIME" of service and an ease of operation that can only be referred to as "FEATHER-TOUCH" sending.

**MODEL 63 MASTER AMPLIFIER**



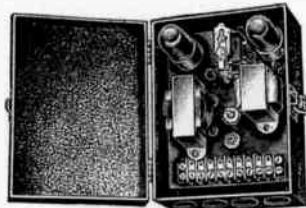
Model 63 Amplifier is especially designed for use with a correct combination of the standardized Worner Photo-Cell and Light Source units shown at right. However, this Amplifier will operate also from Light Source units, such as daylight, artificial lights, radiant energy from metallic processing, etc.

Model 63 Amplifier is a specially engineered, highest quality unit. It enjoys wide preference as it efficiently meets 95 per cent of industrial requirements and replaces the need of costly individually engineered equipment. Technical details on request.

Model 63 Master Amplifier.....each \$85.00

**MODEL 64 ECONOMY AMPLIFIER**

This Amplifier is an economical unit for practically any industrial application where cost is a factor. Designed for use with a combination of standardized Worner Photo-Cell and Light Source units shown at right.



Model 64 Economy Amplifier.....each \$56.00

**LIGHT SOURCE & PHOTO-CELL RECEIVER UNITS**

For Use With Model 63 and Model 64 Amplifiers



Model 33



Model 23



Model 31



Model 21

The Light Source unit is designed to project the light beam and the Photo-Cell Receiver is designed to pick up the beam and convert its light into electrical energy through the Amplifier unit.

Model 33 Light Source is "standard" for general applications and is most generally recommended. Its light beam covers a distance from a few inches to 25 feet from Light Source to Receiver. Heavy duty, cast iron unit with 1/2-inch conduit fittings. Gray finish.

Model 23 Photo-Cell Receiver is engineered for use with Model 33 Light Source and has the same case specifications.

For use in damp surroundings, Models 33 and 23 can be made water-proof at slight additional cost.

Model 31 Light Source is "standard" where a lighter weight case is practical. Its light beam covers a distance from a few inches to 25 feet from Light Source to Photo-Cell Receiver. Case is 18 gauge steel, gray crackle finish. Has 1/2-inch knockout.

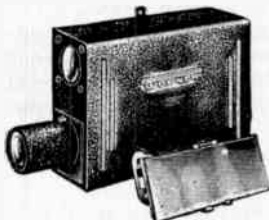
Model 21 Photo-Cell Receiver is engineered for use with Model 31 Light Source and has the same case specifications.

Model No.	Description	Size, Inches	Price, Each
33	Light Source Housing	4 1/4 x 2 3/4 x 2 3/4	\$11.00
23	Photo-Cell Receiver	4 1/4 x 2 3/4 x 2 3/4	16.00
31	Light Source Housing	6 5/8 x 2 x 1 1/4	9.00
21	Photo-Cell Receiver	6 5/8 x 2 x 1 1/4	14.00

**FOTOLECTRIC ANNOUNCER SETS**

Automatically Announces the Entrance or Passing of Any Object

COMPLETE WITH MIRROR AND CHIME



Model 61-A

The Fotoelectric Announcer unit is designed to project a "beam of light" across any entrance to any room, building or premises. The breaking of this light beam by any person entering will activate the chime to automatically announce the entrant. Can serve countless purposes and solve

most entrance problems efficiently.

Model 61 Fotoelectric Announcer includes Light Source and sensitive Photo-Cell units in one compact metal case, finished in black crackle lacquer. Size, 10 3/4 x 7 1/2 x 2 3/4 inches. Set, each \$31.25

Model 61-A Fotoelectric Announcer, the same unit as described above except that it is equipped with an optical system to arrest unwanted light.

Set, each \$34.25

**MODEL 62 R & L AMPLIFIER AND LIGHT SOURCE SET**



Model 62-R Amplifier



Model 62-L Light Source

This "two-unit" set has specially designed Light Source unit and an Amplifier unit that includes the Photo-Cell Receiver, Relay and other electrical controls. This combination has proved efficient for countless simple applications for distances from a few inches to 75 feet or where Relay is not required to operate in excess of 300 times a minute.

The "two-unit" set will supervise efficiently on a simple application, such as: Counting or sorting large objects; limit switches; start and stop operations; light density; fire protection; flame control; opening doors, etc.

Model 62 R & L "Two-Unit Set".....per set \$70.00  
Model 62-R Amplifier only.....each 58.00  
Model 62-L Light Source only.....each 18.00



**MODEL 9000 SERIES**  
**FOTOLECTRIC BURGLAR ALARM SYSTEM**



Amplifier Model 9100-R



Amplifier Model 9150-R

This series consists of One Master Control Panel operating with one or more (up to 4) Fotoelectric Light Source and Amplifier sets. The combination may be used with traps, foil systems and other equipment as used by professional burglar alarm companies, to operate audible or visible alarms.

Any interruption of the light beam operates whatever alarms the user wishes to install. The complete alarm circuit is supervised by the Master Control Panel which is remotely located for operator's convenience.

All Model 9000 series Amplifiers contain the following: Heavy duty transformers 110-120-volt, 50 to 60 cycle, A.C. with dual secondary. Potentiometer type sensitivity control. Meter Jack to determine correct cut-off and plate current in Relay circuit. Electrolytic condensers. Double pole, double throw 5-amp. relay.

Constructed of 18-gauge steel, welded, gray wrinkle finish. Size: 7 x 6 1/4 x 4 1/4 inches. (Not weatherproof.)

Model No.	Description	Range per Set	Price, Each
9100	Master Trespass Trap.....	100 ft.	\$70.00
9150	Master Trespass Trap.....	150 ft.	90.00
9250	Master Trespass Trap.....	250 ft.	130.00
9500	Master Trespass Trap.....	500 ft.	225.00



**Model 9000 Control Panel, \$45.00** list, supplied with plate relays equal to the 9000 series Amplifiers ordered. If 9000 series Amplifiers are ordered without Control Panel, plate relay is supplied with Amplifiers to be mounted in Control Panel.

**MODEL 7000 SERIES**  
**FOTOLECTRIC BURGLAR ALARM SYSTEM**

The Model 7000 series operates in conjunction with professional independent burglar alarm company's central office or local equipment.

The 7000 series Amplifiers are complete with the following scientifically engineered equipment: Tubes. Lenses. Heavy duty shielded Amplifier transformer 110-120 volt, 50-60 cycle, A.C. with dual secondary. Potentiometer sensitivity control. Meter Jack to determine correct cut-off and plate current in relay circuit. Electrolytic condensers. Single-pole, double-throw relay, self-wiping contacts rated at 5 amp. non-inductive at 110-120 volts, 50 to 60 cycle.

Model No.	Description	Range per Set	Price, Each
7100	Remote Cont. Trespass Trap	100 ft.	\$70.00
7150	Remote Cont. Trespass Trap	150 ft.	90.00
7250	Remote Cont. Trespass Trap	250 ft.	130.00
7500	Remote Cont. Trespass Trap	500 ft.	225.00

**MODEL 5000 SERIES**  
**FOTOLECTRIC BURGLAR ALARM SYSTEM**

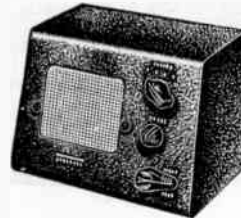


Model 5000 series consists of a Light Source unit and an Amplifier unit. This combination is designed for interior use where a single beam is considered ample protection; it is not intended for use with protective devices such as foil systems, etc. Furnished for 110 volts. Amplifier Model 5150-R (illustrated) is equipped with a

scientifically engineered "unwanted light rejector," which materially increases the day-light range of the unit and makes it equal to the night-time range, if equipment is installed so that 90 per cent of the light reaching the Photo-Cell is that generated by the Light Source.

Model No.	Description	Range	Price, Each
5100	Single Beam Trespass Trap	100 ft.	\$75.00
5150	Single Beam Trespass Trap	150 ft.	95.00

**WORNER**  
**COMMUNICATING SYSTEMS**



Models P-359, P-353



Model P-360

All WORNER units operate efficiently as far as 2000 feet apart. Persons at or near Sub-stations when called may answer without leaving their work, from as far away as 25 feet. "Silent feature" shuts out noise in vicinity at Station. 110 volt to 120 volt, A.C. or D.C. Units are shipped complete with wiring diagrams and instructions for easy installation.

**Model P-359 Selective Master Station.** Handles 1 to 5 Sub-stations. Has 3-tube amplifier. 1 watt output. Contains 5-inch speaker for maximum input without talking directly into unit. In substantial all-metal cabinet; size: 9 x 6 1/4 x 6 inches. Finished in hammered walnut lacquer finish. Complete with tubes and instructions.....each \$34.75

**Model P-353 Combination Master Station.** 2 to 5 units may be used, in any combination of Masters to Masters, or Masters to Sub-stations. Contains 3-tube amplifier. Complete with tubes and instructions.....each \$47.50

**Model P-360 Sub-station.** Has 5-inch speaker. Talk-listen switch used by Sub to originate call; not used after Master answers. In substantial all-metal cabinet as illustrated; size: 7 1/4 x 4 x 6 inches; finished in attractive hammered walnut lacquer finish.  
each \$11.50

# BURGESS BATTERIES



4F



2R



F4PI



T5



G3

## BURGESS PORTABLE "A" BATTERIES

No. 2F.	1 1/2 volts.	Size, 2 1/2" x 1 1/4" x 4 1/8".	Standard package 1.....	List price, \$ .56
No. 2F4.	6 volts.	Size, 3 1/8" x 2 3/4" x 5 3/8".	Standard package 1.....	List price, 1.75
No. 2F4L.	6 volts.	Size, 3 3/8" x 1 7/8" x 10 1/8".	Standard package 2.....	List price, 1.85
No. 2R.	1 1/2 volts.	Size, 2 1/8" x 1 1/8" diameter.	Standard package 48.....	List price, .10
No. 4F.	1 1/2 volts.	Size, 2 1/8" x 2 1/8" x 4 1/2".	Standard package 6.....	List price, .95
No. 4FL.	1 1/2 volts.	Size, 3 3/8" x 1 1/8" x 5 1/2".	Standard package 1.....	List price, .90
No. 6F.	1 1/2 volts.	Size, 4 1/2" x 2 1/8" x 4".	Standard package 3.....	List price, 1.30
No. 8F.	1 1/2 volts.	Size, 3 3/8" x 2 3/8" x 5 1/8".	Standard package 2.....	List price, 1.65
No. 8FL.	1 1/2 volts.	Size, 3 3/8" x 1 1/8" x 10 1/8".	Standard package 3.....	List price, 1.75
No. F4PI.	6 volts.	Size, 2 1/8" x 2 1/8" x 4 1/8".	Standard package 6.....	List price, .94
No. G3.	4 1/2 volts.	Size, 4" x 1 1/8" x 4 5/8".	Standard package 6.....	List price, .75
No. T5.	7 1/2 volts.	Size, 2 1/2" x 2 1/8" x 3 3/8".	Standard package 3.....	List price, 1.25
No. C5.	7 1/2 volts.	Size, 2 1/8" x 1 3/8" x 3".	Standard package 6.....	List price, .95
No. B5.	7 1/2 volts.	Size, 3 3/8" x 3 1/2" x 2 1/8".	Standard package 6.....	List price, .95
No. F5.	4 1/2 volts.	Size, 3 1/8" x 1 3/8" x 4 1/2".	Standard package 6.....	List price, .75
No. Z4.	6 volts.	Size, 1 1/2" x 1 1/2" x 2 1/8".	Standard package 12.....	List price, .50



A30



B30



M30



XX45



XX30

## BURGESS PORTABLE "B" BATTERIES

No. A30.	45 volts.	Size, 3 1/2" x 2 1/8" x 4 1/8".	Standard package 2.....	List price, \$2.15
No. A60.	90 volts.	Size, 4 3/8" x 3 1/8" x 4 7/8".	Standard package 6.....	List price, 4.35
No. B30.	45 volts.	Size, 4 1/8" x 2 1/2" x 5 1/8".	Standard package 2.....	List price, 2.35
No. M30.	45 volts.	Size, 3 1/2" x 1 1/8" x 5 1/8".	Standard package 6.....	List price, 2.00
No. W20PI.	30 volts.	Size, 1 3/8" x 1 3/8" x 3 1/8".	Standard package 6.....	List price, 2.00
No. W30PI.	45 volts.	Size, 2 1/8" x 1 1/8" x 3 3/8".	Standard package 6.....	List price, 2.05
No. XX30.	45 volts.	Size, 2 1/8" x 1 1/8" x 3 3/8".	Standard package 6.....	List price, 1.65
No. XX45.	67 1/2 volts.	Size, 2 3/8" x 1 1/8" x 3 1/4".	Standard package 6.....	List price, 2.25
No. Z30.	45 volts.	Size, 2 1/8" x 2 1/4" x 4 1/2".	Standard package 2.....	List price, 2.50
No. N60.	90 volts.	Size, 3 3/8" x 1 1/4" x 3 1/8".	Standard package 6.....	List price, 2.95
No. K45.	67 1/2 volts.	Size, 2 3/8" x 1 3/8" x 2 3/2".	Standard package 6.....	List price, 2.25

A QUALITY DRY BATTERY FOR EVERY PURPOSE

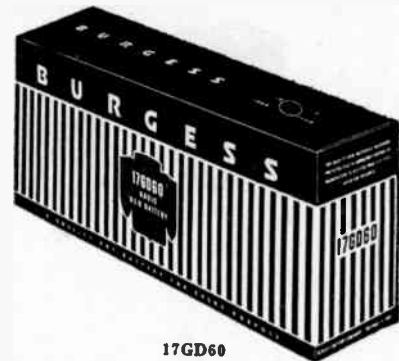
# BURGESS BATTERIES



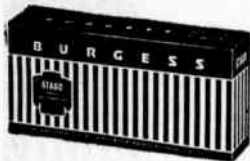
S6D60



4SD60



17GD60



6TA60



5DA60



F6A60



T6Z60

## BURGESS FARM "A & B" BATTERIES

No. 17GD60. 1½ volt "A", 90 volt "B". Size, 15½" x 4⅞" x 7". Standard package 1. List price, \$5.95

No. 18GD60. 1½ volt "A", 90 volt "B". Size, 5⅞" x 6⅞" x 12⅞". Standard package 1. List price, \$7.95

No. 4SD60. 1½ volt "A", 90 volt "B". Size 10⅞" x 4¼" x 6⅞". Standard package 1. List price, \$5.95

No. S6D60. 7½ volt "A", 90 volt "B". Size 9⅞" x 4⅞" x 7⅞". Standard package 1. List price, \$7.95

## BURGESS PORTABLE "A" & "B" BATTERIES

No.	Voltage	Size	List Price
2TXX40.	1½ A, 60B	2⅞" x 1⅞" x 7⅞"	\$3.00
4GA41.	1½ A, 61½ B	9⅞" x 2⅞" x 3⅞"	4.15
4GA42.	1½ A, 63B	9" x 2⅞" x 4⅞"	4.15
4TA60.	1½ A, 90B	8⅞" x 2⅞" x 4⅞"	5.25
5DA60.	1½ A, 90B	5⅞" x 2⅞" x 6⅞"	4.95
6FA60.	1½ A, 90B	11⅞" x 1⅞" x 6⅞"	4.95
6TA60.	1½ A, 90B	9⅞" x 2⅞" x 4⅞"	5.50
F4A50.	6A, 75B	9⅞" x 2⅞" x 3⅞"	4.50
F4B60.	6A, 90B	10⅞" x 2⅞" x 4⅞"	4.95
F6A60.	9A, 90B	9⅞" x 2⅞" x 4⅞"	4.95
G5A42.	7½ A, 63B	9⅞" x 2⅞" x 4⅞"	4.20
T5Z60.	7½ A, 90B	9⅞" x 2⅞" x 3⅞"	5.50
G6B60.	9A, 90B	13⅞" x 2⅞" x 4⅞"	5.50
G6M60.	9A, 90B	10⅞" x 3⅞" x 4⅞"	5.50
T5Z50.	7½ A, 75B	8⅞" x 3⅞" x 2⅞"	4.50
T6Z60.	7½ A, 90B	9⅞" x 2⅞" x 3⅞"	5.50
F6A60P.	9A, 90B	9⅞" x 2⅞" x 4⅞"	5.25

A QUALITY DRY BATTERY FOR EVERY PURPOSE

# BURGESS BATTERIES



5308



5540



2370



10308



2308

## BURGESS RADIO "B" BATTERIES

No. 10308.	45 volts.	Size $8\frac{1}{2}$ "x $4\frac{1}{2}$ "x $7\frac{1}{8}$ ".	Standard package 6.....	List price, \$3.96
No. 21308.	45 volts.	Size $8\frac{1}{8}$ "x $4\frac{1}{2}$ "x $7\frac{1}{8}$ ".	Standard package 6.....	List price, 4.15
No. 2308.	45 volts.	Size, $8\frac{1}{2}$ "x $2\frac{3}{4}$ "x $7\frac{1}{8}$ ".	Standard package 6.....	List price, 2.88
No. 5156.	22½ volts.	Size, $4\frac{1}{2}$ "x $2\frac{1}{8}$ "x $2\frac{3}{4}$ "x $3\frac{1}{4}$ ".	Standard package 10.....	List price, 1.80
No. 5308.	45 volts.	Size, $4$ "x $2\frac{3}{4}$ "x $5\frac{1}{8}$ "x $5\frac{1}{8}$ ".	Standard package 5.....	List price, 2.15

## BURGESS RADIO "B" & "C" BATTERIES

No. 2156.	22½ volts.	Size, $6\frac{1}{2}$ "x $4\frac{1}{8}$ "x $2\frac{1}{4}$ "x $3\frac{1}{4}$ ".	Standard package 6.....	List price, 2.62
No. 2370.	4½ volts.	Size, $4\frac{1}{2}$ "x $1\frac{1}{4}$ "x $2\frac{1}{8}$ "x $3\frac{1}{8}$ ".	Standard package 5.....	List price, .81
No. 4156.	22½ volts.	Size, $3\frac{1}{2}$ "x $2\frac{1}{8}$ "x $2\frac{1}{4}$ "x $2\frac{7}{8}$ ".	Standard package 5.....	List price, 1.80
No. 5360.	4½ volts.	Size, $2\frac{7}{8}$ "x $\frac{1}{2}$ "x $2\frac{7}{8}$ "x $2\frac{1}{8}$ ".	Standard package 5.....	List price, .50
No. 5540.	7½ volts.	Size, $3\frac{7}{8}$ "x $\frac{1}{2}$ "x $2\frac{1}{4}$ "x $3\frac{1}{4}$ ".	Standard package 5.....	List price, .95

## BURGESS FARM RADIO "A" BATTERIES

No. 20F.	1½ volts.	Size, $7\frac{7}{8}$ "x $2\frac{1}{4}$ "x $6\frac{1}{8}$ ".	Standard package 3.....	List price, 3.95
No. 20F2.	3 volts.	Size, $11\frac{3}{8}$ "x $2\frac{1}{4}$ "x $6\frac{1}{8}$ ".	Standard package 1.....	List price, 5.52

## BURGESS HEARING AID BATTERIES

### "A" BATTERIES FOR VACUUM TUBE HEARING AIDS

No. 1ES.	1½ volts.	Size, $1$ "x $1\frac{1}{8}$ ".	Standard package 12.....	List price, .10
No. 2ES.	1½ volts.	Size, $1\frac{1}{8}$ "x $2\frac{1}{8}$ ".	Standard package 12.....	List price, .10
No. 2ZE.	1½ volts.	Size, $1\frac{1}{2}$ "x $\frac{1}{8}$ "x $1\frac{1}{8}$ "x $1\frac{1}{4}$ ".	Standard package 12.....	List price, .25
No. 5ES.	1½ volts.	Size, $4\frac{5}{16}$ "x $2\frac{3}{16}$ ".	Standard package 5.....	List price, .10
No. TE.	1½ volts.	Size, $1\frac{1}{8}$ "x $3\frac{7}{8}$ ".	Standard package 12.....	List price, .27
No. 9ES.	1½ volts.	Size, $1\frac{7}{8}$ "x $\frac{1}{8}$ ".	Standard package 12.....	List price, .125

### "B" BATTERIES FOR VACUUM TUBE HEARING AIDS

No. K10E.	15 volts.	Size, $1\frac{1}{2}$ "x $1\frac{1}{2}$ "x $1\frac{1}{2}$ ".	Standard package 24.....	List price, .90
No. K15E.	22½ volts.	Size, $1\frac{1}{2}$ "x $1\frac{1}{2}$ "x $2\frac{1}{8}$ ".	Standard package 24.....	List price, 1.40
No. K20E.	30 volts.	Size, $1\frac{1}{2}$ "x $1\frac{1}{2}$ "x $2\frac{1}{4}$ ".	Standard package 24.....	List price, 1.65
No. U10E.	15 volts.	Size, $1\frac{1}{8}$ "x $\frac{1}{8}$ "x $1\frac{1}{4}$ ".	Standard package 24.....	List price, .85
No. U15E.	22½ volts.	Size, $1\frac{1}{4}$ "x $\frac{1}{8}$ "x $1\frac{1}{4}$ ".	Standard package 24.....	List price, 1.05
No. U20E.	30 volts.	Size, $2\frac{1}{4}$ "x $\frac{1}{8}$ "x $1\frac{1}{4}$ ".	Standard package 24.....	List price, 1.25
No. XX15E.	22½ volts.	Size, $1\frac{1}{4}$ "x $1\frac{1}{8}$ "x $3\frac{7}{8}$ ".	Standard package 24.....	List price, 1.45
No. XX22E.	33 volts.	Size, $2\frac{1}{4}$ "x $1\frac{1}{4}$ "x $3\frac{1}{8}$ ".	Standard package 24.....	List price, 1.65
No. XX30E.	45 volts.	Size, $2\frac{1}{2}$ "x $1\frac{1}{8}$ "x $3\frac{7}{8}$ ".	Standard package 24.....	List price, 1.90

## For Carbon Hearing Aids—Universal Batteries

No. T3R.	4½ volts.	Size, $3\frac{1}{8}$ "x $1\frac{1}{2}$ "x $3\frac{1}{8}$ "x $4\frac{1}{4}$ ".	Standard package 12.....	List price, 1.00
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## For Western Electric Ortho-Technic Models

No. T3WE.	4½ volts.	Size, $3\frac{1}{8}$ "x $1\frac{1}{2}$ "x $3\frac{1}{8}$ ".	Standard package 12.....	List price, 1.00
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XX30E



K15E



TE



U20E



2ZE



T3WE



T3R

A QUALITY DRY BATTERY FOR EVERY PURPOSE

# BURGESS BATTERIES



4FH



4F2H



No. 2



No. 1



Z



4F4H



2F2H



F3BP



F4BP



Z30BP

## BURGESS FLASHLIGHT BATTERIES

No. 1.	1 1/2 volts. Size, 1"x1 1/8". Standard package 36.....	List price, \$ .10
No. 2.	1 1/2 volts. Size, 1 1/8"x2 1/8". Standard package 48.....	List price, .10
No. Z.	1 1/2 volts. Size, 1/8"x1 3/8". Standard package 48.....	List price, .075

## BURGESS IGNITION BATTERIES

4FH.	1 1/2 volts. Size, 2 1/8"x2 1/8"x3 1/8"x4 1/4". Standard package 12.....	List price, \$ .70
4F2H.	3 volts. Size, 3 1/8"x2 1/8"x5 1/8". Standard package 8.....	List price, 1.35
4F4H.	6 volts. Size, 8 1/4"x2 3/4"x5 1/8"x6 3/8". Standard package 6.....	List price, 3.20
4F5H.	7 1/2 volts. Size, 7 1/8"x3 1/8"x5 1/8"x6 3/8". Standard package 4.....	List price, 3.98
4F6H.	9 volts. Size, 8 1/2"x3 1/8"x5 1/8"x6 3/8". Standard package 4.....	List price, 4.55

## FOR INDUSTRIAL APPLICATIONS

### BURGESS "A" BATTERIES

No. 2F2H.	3 volts. Size, 2 1/8"x2 1/8"x4"x4 3/4". Standard package 5.....	List price, \$ .90
No. 2FBP.	1 1/2 volts. Size, 2 5/8"x1 1/8"x3 1/8"x4 1/8". Standard package 5.....	List price, .71
No. 4FH.	1 1/2 volts. Size, 2 1/8"x2 1/8"x3 1/8"x4 1/4". Standard package 12.....	List price, .70
No. F2BP.	3 volts. Size, 2 5/8"x1 1/8"x4"x4 1/8". Standard package 5.....	List price, .71
No. F4BP.	6 volts. Size, 2 1/8"x2 1/8"x3 1/8"x4 1/8". Standard package 5.....	List price, .73

### BURGESS "B" BATTERIES

No. A75BP.	112 1/2 volts. Size, 10 5/8"x3 7/8"x2 1/2"x. Standard package 1.....	List price, \$10.25
No. W30.	45 volts. Size, 2 3/8"x1 5/8"x3 3/4"x4 1/8". Standard package 6.....	List price, 3.00
No. W30BPX.	45 volts. Size, 2 1/8"x1 5/8"x3 1/8"x4 1/8". Standard package 6.....	List price, 2.73
No. Z30NX.	45 volts. Size, 2 3/8"x1 1/8"x4 1/8"x5". Standard package 5.....	List price, 2.58
No. Z30PX.	45 volts. Size, 2 3/8"x1 3/4"x4 3/8"x4 1/8". Standard package 3.....	List price, 6.33

### BURGESS "C" BATTERIES

No. A8BP.	12 volts. Size, 2 3/4"x1 23/64"x2 1/8"x2 3/4". Standard pkge. 3.....	List price, \$2.25
No. B2BP.	3 volts. Size, 1 1/8"x1 1/8"x2 1/8"x2 1/8". Standard package 6.....	List price, .65
No. W5BP.	7 1/2 volts. Size, 3 1/8"x2 1/8"x1 3/8"x1 1/8". Standard package 6.....	List price, 1.37

**A QUALITY DRY BATTERY FOR EVERY PURPOSE**

Rely on **RAY-O-VAC**  
for your **RADIO BATTERY**  
requirements!

**ONLY RAY-O-VAC PROVIDES**

*The Big Three*

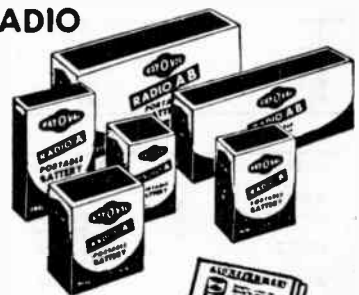
**1 A NEW PACKAGE WITH PURCHASE APPEAL**

Ray-O-Vac Radio Batteries produced by the manufacturer of the world famous Ray-O-Vac LEAK PROOF Flashlight Battery. The rear panel of each radio battery carries the stock numbers of leading competitive batteries that the battery will replace.



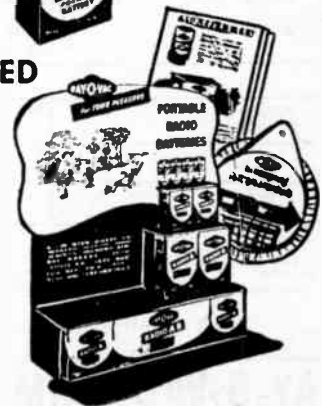
**2 A FULL LINE FOR NEARLY EVERY RADIO REQUIREMENT**

48 batteries lead by the Big Six — 2R, P93A, 4367, 4390, P7830, AB994. These six numbers represent 80% of the portable batteries sold.



**3 A PROMOTIONAL PROGRAM DESIGNED TO SELL RADIO BATTERIES**

Counter and window displays, window streamers, envelope stuffers and a quick selection battery chart. The most useful yet devised.



# For More Hours of Listening Pleasure



2R



P93A



4367



4390



AB994



7830

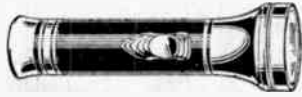
## RAY-O-VAC PORTABLE AND FARM RADIO BATTERIES\*

Catalog No.	Voltage And Type	Dimensions In Inches			Terminals	Standard Package		List Price
		L	W	H		Qty.	Wt.	
<b>PORTABLE A BATTERIES</b>								
2R	1½	Regular D Size Round				192	43	\$ .10
11P	1½	Regular C Size Round				120	15	.10
P93A	4½	4 x 1- 3/8 x 4- 1/8			RMA 103	6	6½	.75
P85A	7½	3- 7/8 x 2- 5/8 x 4- 9/16			RMA 105	4	8	1.10
P94A	1½	2- 5/8 x 2- 5/8 x 4- 1/16			RMA 101	6	8	.95
P751	7½	2- 5/16 x 2 x 3- 1/16			RMA 105	12	7	.95
P694L	6	3- 7/8 x 1- 7/16 x 5- 5/8			RMA 104	6	9¼	.90
P694A	6	2- 5/8 x 2- 5/8 x 4- 1/4			RMA 104	6	8¼	.95
P94L	1½	3-13/16 x 1- 3/8 x 5- 5/8			RMA 101	6	8	.90
<b>PORTABLE B BATTERIES</b>								
4367	67½	2-23/32 x 1-11/32 x 3- 3/4			RMA 119	12	9½	2.25
4390	67½	3-11/16 x 1- 3/8 x 3- 3/4			RMA 119	12	13½	2.95
P7830	45	3- 9/16 x 1-13/16 x 5- 1/2			RMA 110	6	12¼	2.00
P430	45	3- 7/16 x 2- 1/4 x 4- 9/16			RMA 111	6	10¼	2.00
P5303	45	4- 1/8 x 2- 5/8 x 5- 5/16			RMA 111	6	16	2.00
<b>PORTABLE AB BATTERIES</b>								
AB994	7½ or 9A 90B	9- 1/2 x 2-23/32 x 4- 3/8			RMA 116	6	33½	4.95
AB995	9A 90B	13- 5/8 x 2- 7/8 x 4- 5/8			RMA 115	6	48½	5.50
AB909	7½ or 9A 90B	9- 1/2 x 2-23/32 x 4- 3/8			RMA 115	6	33½	5.50
AB775	6 or 7½A 75B	8- 9/16 x 2- 7/16 x 3-11/16			RMA 116	6	22½	4.50
AB601	7½ or 9A 90B	9- 3/8 x 2- 3/16 x 3- 3/4			RMA 116	6	24¾	5.50
<b>FARM A BATTERIES</b>								
P9203	1½	7-11/16 x 2-13/16 x 7			RMA 101	6	42½	3.50
P9403	3	11-11/16 x 4 x 5- 5/16			RMA 102	1	14	5.50
<b>FARM B BATTERIES</b>								
P9303	45	8- 1/16 x 4- 5/16 x 7- 3/16			RMA 107	6	66	3.50
P2303	45	8- 1/16 x 3- 3/16 x 7- 3/16			RMA 107	6	45½	2.75
<b>FARM AB BATTERIES</b>								
AB82	1½A 90B	15- 3/4 x 4- 1/4 x 6-13/16			RMA 115	1	20½	5.95

\* FOR ADDITIONAL SLOWER-MOVING TYPES CONTACT RAY-O-VAC COMPANY, MADISON 10, WISCONSIN

# RAY-O-VAC COMPANY • MADISON 10, WISCONSIN

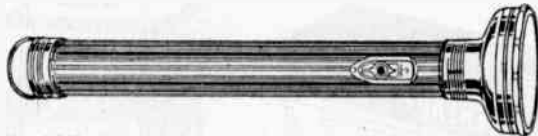
# THE COMPLETE LINE OF **EVEREADY** FLASHLIGHTS



No. 2231 TWO-CELL "EVEREADY" AUTOMATIC SPOTLIGHT — Seamless brass tube. Chromium finish with rolled-on black decoration. Uses 2 "Eveready" No. 935 batteries and "Eveready" Lamp No. PR6. Unit package quantity 1. List Price Each (Complete With Batteries) \$1.65



No. 2351 THREE-CELL "EVEREADY" AUTOMATIC SPOTLIGHT—Seamless brass tube. Chromium finish with rolled-on black decoration. Uses 3 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR3. Unit package quantity 1. List Price Each (Complete With Batteries).....\$1.95



No. 2645 FIVE-CELL "EVEREADY" FOCUSING SEARCHLIGHT—Chromium fittings, seamless brass tube with durable black, baked on finish equipped with ring hanger. Uses 5 "Eveready" No. 950 batteries and "Eveready" Lamp No. 605. Unit package quantity 1. List Price Each (Complete With Batteries)..... \$4.50



No. 915  
1 1/2 volta.  
Length 1 3/4"  
Diameter 3 5/8"  
Weight 1/2 oz.



No. 935  
1 1/2 volta.  
Length 2"  
Diameter 1 1/2"  
Weight 1 1/3 oz.



No. 950  
1 1/2 volta.  
Length 2 3/4"  
Diameter 1 1/4"  
Weight 3 1/2 oz.



No. 509  
Lantern Battery.  
6 volta.  
2 5/8" x 2 5/8" x 3 7/8"  
Weight 1 lb., 7 oz.



DISPLAY PACKAGE  
No. 25

Contains 6 No. 2251 two-cell "Eveready" Automatic Spotlights, displays 6. Seamless brass tube, chromium finish with rolled-on black decoration. Uses 2 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR2.

List Price Each (Complete With Batteries) ...\$1.65



DISPLAY PACKAGE  
No. 71

Contains 12 No. 2671 two-cell "Eveready" Focusing Spotlights, displays 6. Chromium fittings . . . seamless brass tube with durable black baked on finish . . . equipped with ring hanger. Uses 2 "Eveready" No. 950 batteries and "Eveready" Lamp No. 14.

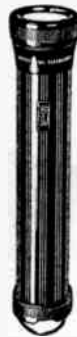
List Price Each (Complete With Batteries) ...\$1.65



DISPLAY PACKAGE  
No. 22

Contains 12 No. 220 Penlights . . . all chromium finish on seamless brass . . . Uses 2 "Eveready" No. 915 batteries and "Eveready" Lamp No. 222.

List Price Each (Complete With Batteries) ...\$1.00



No. 1351

Three-Cell Prefocused Industrial Flashlight —General purpose type. Uses 3 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR7. Unit package quantity 1. List Price Each (Complete With Batteries)

\$3.15



No. 1251

Two-Cell Prefocused Industrial Flashlight —General purpose type. Uses 2 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR6. Unit package quantity 1. List Price Each (Complete With Batteries)

\$2.95



No. 1259

Two-Cell Prefocused Permissible Safety Flashlight — Uses 2 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR6. Extra lamp in bottom cap included. Unit package quantity 1. List Price Each (Complete With Batteries)

\$5.20



No. 1359

Three-Cell Prefocused Permissible Safety Flashlight — Uses 3 "Eveready" No. 950 batteries and "Eveready" Lamp No. PR7. Extra lamp in bottom cap included. Unit package quantity 1. List Price Each (Complete With Batteries)

\$5.40

## SCHEDULE OF PRICES

Cat. No.	No. of Cells	Cell Size	List Price Each	Unit Pkg. Qty.	Weight of Unit Packages	
					Lbs.	Ozs.
915	1	AA	\$ .075	12	—	7 1/2
935	1	C	.10	12	1	4
950	1	D	.10	48	9	4

### Lantern Battery

509	4	F	.70	12	16	8
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### "Eveready" Miniature Lamps for Radio Panel Service

"Eveready" No.	Bulb	Volts	Amp.	List Price
40	T-3/4	6-8	0.15	\$ .10
41	T-3/4	2.5	0.50	.10
44	T-3/4	6-8	0.25	.10
46	T-3/4	6-8	0.25	.10
47	T-3/4	6-8	0.15	.10
48	T-3/4	2	0.06	.15
49	T-3/4	2	0.06	.15
50	G-3/2	6-8	C.P. 1	.10
1490	T-3/4	3.2	0.16	.11

## FLASHLIGHT LENS ASSORTMENT

Cat. No.	Type	Unit Package Quantity
102	40 No. 53419 Spotlight Lenses for Nos. 2251, 2671, 2351 Spotlights	1 Assortment
	2 No. 53123 Spotlight Lenses for No. 2231 Baby Spotlight	
	2 No. 53390 Searchlight Lenses for No. 2645 Searchlight	

## "EVEREADY" LAMPS TWO CELL

"Eveready" No.	Bead Color	Bulb	Volts	Amp.	List Price	Use with Following "Eveready Batteries"
14	Blue	C-3 1/2	2.5	0.30	\$ .10	2 Nos. 935 or 950
PR-2	Blue	B-3 1/2	2.4	0.50	.14	2 No. 950
PR-4	Lt. Gr.	B-3 1/2	2.3	0.27	.14	2 No. 935
PR-6	Brown	B-3 1/2	2.5	0.30	.14	2 Nos. 935 or 950
222	White	TL-3	2.2	0.25	.10	2 No. 915

## THREE CELL

13	Green	C-3 1/2	3.8	0.30	\$ .10	3 No. 950
PR-3	Green	B-3 1/2	3.6	0.50	.14	3 No. 950
PR-7	Pink	B-3 1/2	3.8	0.30	.14	3 No. 950

## FIVE CELL

605	Brown	G-4 1/2	6.0	0.50	\$ .11	5 No. 950
PR-12	—	B-3 1/2	6.0	0.50	.15	5 No. 950

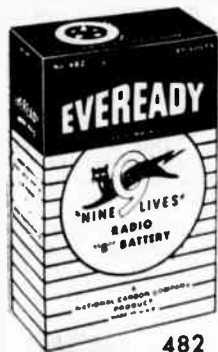


# EVEREADY

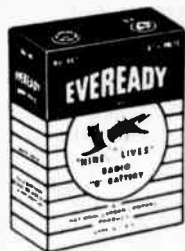
TRADE-MARK

## Radio Batteries

Sell the one brand your customers will always buy—"Eveready" Radio Batteries—for fast turnover, repeat sales! Famous for fine craftsmanship and quick profits, "Eveready" Radio Batteries—portable and farm packs—equip virtually every battery-type radio in use today! Complete data describing these best-selling batteries are given on page M-9.



482



467



455



746



950



718



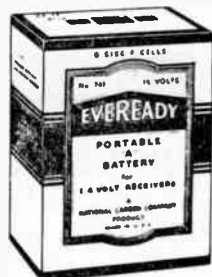
753



752



754



741



742



743



744



493



487



759



A-1300



490



736



740



A-2600



755



756



724



457

# "EVEREADY" BATTERY SPECIFICATIONS

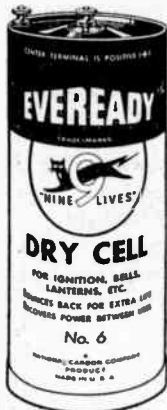
Catalog Number	VOLTAGE	Overall Dimensions			List Price Each	Unit Package Quantity	Weight of Unit Package in Pounds	Battery Weight	Terminals
		Length	Width	Height					
<b>"B" BATTERIES FOR PORTABLE RECEIVERS</b>									
455	45 Volt...	2 <sup>21</sup> / <sub>32</sub> "	1"	3 <sup>11</sup> / <sub>16</sub> "	\$1.65	6	3 <sup>1</sup> / <sub>4</sub>	8 oz.	Snap Type —, +45
457	67 <sup>1</sup> / <sub>2</sub> Volt...	2 <sup>13</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>2</sub> "	2.25	6	3	7 <sup>3</sup> / <sub>8</sub> oz.	Snap Type —, +67 <sup>1</sup> / <sub>2</sub>
467	67 <sup>1</sup> / <sub>2</sub> Volt...	2 <sup>13</sup> / <sub>16</sub> "	1 <sup>3</sup> / <sub>8</sub> "	3 <sup>45</sup> / <sub>64</sub> "	2.25	6	4 <sup>3</sup> / <sub>4</sub>	12 oz.	Snap Type —, +67 <sup>1</sup> / <sub>2</sub>
482	45 Volt...	3 <sup>19</sup> / <sub>32</sub> "	1 <sup>7</sup> / <sub>32</sub> "	5 <sup>1</sup> / <sub>2</sub> "	2.00	6	11 <sup>1</sup> / <sub>2</sub>	1 lb. 15 oz.	Socket —, +45
490	90 Volt...	3 <sup>23</sup> / <sub>32</sub> "	1 <sup>3</sup> / <sub>8</sub> "	3 <sup>45</sup> / <sub>64</sub> "	2.95	6	6 <sup>1</sup> / <sub>2</sub>	15 oz.	Snap Type —, +90
493	300 Volt...	2 <sup>11</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>32</sub> "	3 <sup>29</sup> / <sub>32</sub> "	10.00	1	1	14 <sup>1</sup> / <sub>2</sub> oz.	Pin Jacks —, +300
738	45 Volt...	3"	2 <sup>5</sup> / <sub>16</sub> "	4 <sup>1</sup> / <sub>8</sub> "	2.50	2	2 <sup>1</sup> / <sub>2</sub>	1 lb. 4 oz.	Socket —, +22 <sup>1</sup> / <sub>2</sub> , +45
<b>"A" BATTERIES FOR PORTABLE RECEIVERS</b>									
717	7 <sup>1</sup> / <sub>2</sub> Volt...	2 <sup>7</sup> / <sub>32</sub> "	1 <sup>15</sup> / <sub>16</sub> "	3 <sup>1</sup> / <sub>32</sub> "	\$0.95	6	3	7 <sup>1</sup> / <sub>8</sub> oz.	Socket —, +7 <sup>1</sup> / <sub>2</sub>
718	6 Volt...	3 <sup>15</sup> / <sub>16</sub> "	2 <sup>3</sup> / <sub>4</sub> "	5 <sup>1</sup> / <sub>2</sub> "	1.75	1	2 <sup>3</sup> / <sub>4</sub>	2 lb. 4 oz.	Socket —, +6
724	6 Volt...	1 <sup>7</sup> / <sub>32</sub> "	1 <sup>7</sup> / <sub>32</sub> "	2 <sup>11</sup> / <sub>32</sub> "	0.50	12	2	2 <sup>1</sup> / <sub>2</sub> oz.	Flashlight
736	4 <sup>1</sup> / <sub>2</sub> Volt...	3 <sup>15</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	4 <sup>3</sup> / <sub>32</sub> "	0.75	6	6 <sup>1</sup> / <sub>4</sub>	1 lb.	Socket —, +4 <sup>1</sup> / <sub>2</sub>
741	1 <sup>1</sup> / <sub>2</sub> Volt...	3 <sup>7</sup> / <sub>8</sub> "	2 <sup>11</sup> / <sub>16</sub> "	5 <sup>3</sup> / <sub>8</sub> "	1.65	1	2 <sup>3</sup> / <sub>4</sub>	2 lb. 10 oz.	Socket —, +1.5
742	1 <sup>1</sup> / <sub>2</sub> Volt...	2 <sup>19</sup> / <sub>32</sub> "	2 <sup>19</sup> / <sub>32</sub> "	4"	0.95	6	8	1 lb. 5 oz.	Socket —, +1.5
743	1 <sup>1</sup> / <sub>2</sub> Volt...	3 <sup>13</sup> / <sub>16</sub> "	2 <sup>21</sup> / <sub>32</sub> "	4 <sup>1</sup> / <sub>32</sub> "	1.25	3	6	1 lb. 15 <sup>1</sup> / <sub>4</sub> oz.	Socket —, +1.5
744	6 Volt...	2 <sup>21</sup> / <sub>32</sub> "	2 <sup>21</sup> / <sub>32</sub> "	3 <sup>31</sup> / <sub>32</sub> "	0.95	6	8 <sup>1</sup> / <sub>4</sub>	1 lb. 5 oz.	Socket —, +6
745	1 <sup>1</sup> / <sub>2</sub> Volt...	3 <sup>7</sup> / <sub>8</sub> "	1 <sup>7</sup> / <sub>16</sub> "	10 <sup>25</sup> / <sub>32</sub> "	1.75	2	5 <sup>1</sup> / <sub>2</sub>	2 lb. 10 <sup>1</sup> / <sub>2</sub> oz.	Socket —, +1.5
746	4 <sup>1</sup> / <sub>2</sub> Volt...	3 <sup>15</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	4 <sup>21</sup> / <sub>32</sub> "	.75	6	7 <sup>1</sup> / <sub>4</sub>	1 lb. 4 oz.	Socket —, +4.5
747	6 Volt...	3 <sup>7</sup> / <sub>8</sub> "	1 <sup>7</sup> / <sub>16</sub> "	10 <sup>25</sup> / <sub>32</sub> "	1.75	2	5 <sup>1</sup> / <sub>2</sub>	2 lb. 13 oz.	Socket —, +6
950	1 <sup>1</sup> / <sub>2</sub> Volt...	1 <sup>21</sup> / <sub>64</sub> "	Diam.	2 <sup>27</sup> / <sub>64</sub> "	0.10	48	9 <sup>1</sup> / <sub>4</sub>	3 oz.	Flashlight
<b>"A-B" PACK FOR 1.4 VOLT PORTABLE RECEIVERS</b>									
752	9 "A" 90 "B"	14 <sup>1</sup> / <sub>16</sub> "	2 <sup>11</sup> / <sub>16</sub> "	4 <sup>1</sup> / <sub>16</sub> "	\$5.50	1	6 <sup>1</sup> / <sub>4</sub>	6 lb. 5 oz.	Recessed Plug — "A", +9 "A", — "B", +90 "B"
753	7 <sup>1</sup> / <sub>2</sub> & 9 "A" 90 "B"	9 <sup>7</sup> / <sub>32</sub> "	2 <sup>23</sup> / <sub>32</sub> "	4 <sup>5</sup> / <sub>16</sub> "	4.95	1	5	4 lb. 12 oz.	Socket — "A" +7 <sup>1</sup> / <sub>2</sub> "A", +9 "A" — "B", +90 "B"
754	7 <sup>1</sup> / <sub>2</sub> & 9 "A" 90 "B"	10 <sup>15</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>4</sub> "	4"	5.50	1	6 <sup>1</sup> / <sub>4</sub>	6 lb. 1 oz.	Socket — "A", +7 <sup>1</sup> / <sub>2</sub> "A", +9 "A", — "B", +90 "B"
755	6 & 7 <sup>1</sup> / <sub>2</sub> "A" 75 "B"	8 <sup>9</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>16</sub> "	3 <sup>3</sup> / <sub>4</sub> "	4.50	1	3 <sup>3</sup> / <sub>4</sub>	3 lb. 9 oz.	Socket — "A", +6 "A", +7 <sup>1</sup> / <sub>2</sub> "A" — "B", +75 "B"
756	7 <sup>1</sup> / <sub>2</sub> & 9 "A" 90 "B"	8 <sup>7</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>8</sub> "	3 <sup>25</sup> / <sub>32</sub> "	5.50	1	3	2 lb. 14 oz.	Socket — "A", +7 <sup>1</sup> / <sub>2</sub> "A", +9 "A" — "B", +90 "B"
<b>"B" BATTERY FOR FARM TYPE RECEIVERS</b>									
487	45 Volt...	5 <sup>1</sup> / <sub>8</sub> "	2 <sup>1</sup> / <sub>16</sub> "	7 <sup>1</sup> / <sub>4</sub> "	\$2.75	10	44	4 lb. 2 oz.	Socket —, +22 <sup>1</sup> / <sub>2</sub> , +45
<b>"A-B" PACK FOR 1.4 VOLT FARM TYPE RECEIVERS</b>									
758	1 <sup>1</sup> / <sub>2</sub> "A" 90 "B"	10 <sup>11</sup> / <sub>16</sub> "	4 <sup>1</sup> / <sub>8</sub> "	6 <sup>13</sup> / <sub>16</sub> "	\$5.95	1	14 <sup>3</sup> / <sub>4</sub>	14 lbs. 4 oz.	Socket —, +1.5 Socket —, +90
759	1 <sup>1</sup> / <sub>2</sub> "A" 90 "B"	15 <sup>11</sup> / <sub>16</sub> "	4 <sup>5</sup> / <sub>32</sub> "	6 <sup>15</sup> / <sub>16</sub> "	5.95	1	18 <sup>1</sup> / <sub>2</sub>	17 lb. 9 oz.	Socket —, +1.5 Socket —, +90
<b>"AIR CELL" "A" BATTERIES FOR 2 VOLT RECEIVERS</b>									
A-2600	2 <sup>1</sup> / <sub>2</sub> Volt...	9 <sup>29</sup> / <sub>32</sub> "	6 <sup>19</sup> / <sub>32</sub> "	11 <sup>3</sup> / <sub>16</sub> "	\$10.95	1	24	21 lb. 5 oz.	Screw —, +2.5
SA-2600	2 <sup>1</sup> / <sub>2</sub> Volt...	9 <sup>29</sup> / <sub>32</sub> "	6 <sup>19</sup> / <sub>32</sub> "	11 <sup>3</sup> / <sub>16</sub> "	12.10	1	24	21 lb. 5 oz.	Screw —, +2.5
A-2300	2 <sup>1</sup> / <sub>2</sub> Volt...	8 <sup>1</sup> / <sub>4</sub> "	5 <sup>5</sup> / <sub>16</sub> "	8 <sup>5</sup> / <sub>8</sub> "	8.50	1	12 <sup>1</sup> / <sub>2</sub>	11 lb.	Screw —, +2.5
<b>"A" BATTERIES FOR 1.4 VOLT RECEIVERS</b>									
*A-1300	1 <sup>1</sup> / <sub>4</sub> Volt...	5 <sup>5</sup> / <sub>16</sub> "	4 <sup>11</sup> / <sub>32</sub> "	8 <sup>5</sup> / <sub>8</sub> "	\$4.85	1	7	5 lb. 13 <sup>1</sup> / <sub>2</sub> oz.	Socket —, +1.25
740	1 <sup>1</sup> / <sub>2</sub> Volt...	4 <sup>19</sup> / <sub>32</sub> "	3 <sup>7</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>4</sub> "	3.95	1	6 <sup>1</sup> / <sub>4</sub>	6 lb.	Socket —, +1.5

# EVEREADY

TRADE-MARK

## Dry Batteries

Illustrated below are "Eveready" Dry Batteries, known for dependable and long service. Information describing famous "Eveready" Dry Batteries is given with each illustration.



### "EVEREADY" "IGNITOR" DRY CELL NO. 6 —

For extra long life and heavy service in all Dry Cell applications. Its exceptionally high quality and recuperative powers have made the "Eveready" "Ignitor" dry cell famous for ignition, radio, bells, buzzers, electric games, toys, lanterns and other battery operated devices.

### "EVEREADY" R.R. AND INDUSTRIAL NO. 6 —

Especially designed for Railroad and Industrial use where a wide range of service conditions, from extremely heavy to extremely light are encountered.

"EVEREADY" "COLUMBIA" "GRAY LABEL" TELEPHONE CELL NO. 6 — Especially designed for telephone service. Noted for its long life and light drain service.

Brand and Type	Jacket	Voltage	Overall Dimensions In Inches		Quantity in Standard Package	Approx. Wt. of Std. Pkg. in Pounds	List Price Each	†P. C. List Price Each
			Diameter	Height				
**Eveready** "Ignitor" No. 6	Round	1½	2⅝	6⅝	12	27	\$0.70	\$0.75
**Eveready** R.R. and Industrial No. 6	Round	1½	2⅝	6⅝	12	28	0.75	0.80
**Eveready** "Columbia" "Gray Label" Telephone Cell No. 6	Round	1½	2⅝	6⅝	12	26	0.65	0.70

\*Equipped with screw terminals unless Fahnestock spring terminals are specified.

\*\*Equipped with Fahnestock spring terminals unless screw terminals are specified.

### "EVEREADY" "HOT SHOT" BATTERIES —

For all purposes requiring four or more dry cells in series. Particularly adapted for electric fences, gas engines (tractors, motor boats, etc.), blasting, fire and burglar alarms, gongs, bells, annunciators, signals, lights for closets, out-houses, camps,

boats, searchlights, etc.

"Eveready" "Hot Shot" Batteries are composed of specially selected cells. Internal connections are securely soldered and the cells are completely insulated against accidental short circuits. Terminals are insulated.

Brand and Type	Voltage	Overall Dimensions In Inches			Quantity in Standard Package	Approx. Wt. of Std. Pkg. in Pounds	List Price Each	†P. C. List Price Each
		Length	Width	Height				
"Eveready" No. 1461	6	10⅝	2¾	7¼	6	59	\$3.35	\$3.65
"Eveready" No. 1462	6	5⅝	5⅝	7¼	4	41	3.35	3.65
"Eveready" No. 1562	7½	7⅝	5	7¼	4	52	4.35	4.75
"Eveready" No. 1662	9	7⅝	5¼	7¼	4	62	4.95	5.40

Standard Packages Contain One Type of 6-Inch Dry Cell or "Hot Shot" Battery Only.

be sure with



# GENERAL DRY BATTERIES

GENERAL dry batteries contain many outstanding advancements such as extra heavy seamless extruded zinc cups, the famous paper thin separator permitting more mix and more active zinc area by utilization of the cell bottom, the curled rim lock seal which seals each cell individually. These features, found only in Generals, assure long shelf life as well as the maximum in dry battery performance.

## GENERAL A & B RADIO FARM PACKS

General A-B packs are made with L size cells in the A section. These cells are 40% longer than the largest conventional 1 1/4" diameter cell. This construction assures the perfect balance between these "A" and "B" sections for current drains established by the Radio Industry.



Type	Voltage	Standard Package	Pkg. Lbs. Weight	Interchangeable With		Ray-O-Vac	Price	
				Eveready	Burgess		East	Pacific Coast
60DL1L	1 1/2-90	1	24.5	759	17GD60	A882	\$5.95	\$6.25
60DI2L6	9-90	1	24	—	3GD60	A8982	8.50	8.50
60B6L	1 1/2-90	4	39	758	—	A885	5.50	5.50
90FL6D	135-9C	1	45	—	F90-D6	P8960	10.50	11.11

## GENERAL ABC HOME RADIO BATTERIES

All cells used in General batteries are filled with active mix by loading equipment developed by General which automatically puts the right amount of mix into each cell and packs it uniformly. General home radio batteries are accepted for their uniformity, dependability and long service.



Type	Voltage	Standard Package	Pkg. Lbs. Weight	Interchangeable With		Ray-O-Vac	Price	
				Eveready	Burgess		East	Pacific Coast
I2L1L	1 1/2	4	34	740	20F	P9203	\$3.95	\$3.95
I2L1S	1 1/2	4	34	A1300	19G	P168A	3.95	3.95
P24L2	3	1	17	X125	20F2	P9403	6.13	6.13
5H5	7 1/2	4	8.4	687	G5	P85A	1.25	1.25
V30D	45	6	45	—	2308	P5233	2.75	2.75
V30F	45	6	68	—	10308	P5933	3.40	3.75
V30FL	45	3	39	—	21308	P9303	3.75	4.00
H3D	4 1/2	10	7.5	X771	2370PI	P231W	.80	.80
H3B5	4 1/2	10	3	781	5360	531R	.50	.50
V5B	7 1/2	10	6.3	773	5540	551	.95	.95
H15B5	22 1/2	10	15.4	768	5156PI	P5151	1.80	1.80
H15B	22 1/2	10	15.4	778	5156SC	—	1.80	1.80
H15A	22 1/2	10	10	763	4156	4151	1.80	1.80

## GENERAL PORTABLE A & B PACKS

The small size cells used in portable batteries greatly reflect the benefits derived from General's patented construction. General Batteries deliver more service hours per dollar, therefore you will find them used as original equipment in more battery radios than any other brand.



Type	Voltage	Standard Package	Pkg. Lbs. Weight	Interchangeable With		Ray-O-Vac	Price
				Eveready	Burgess		
40CW2CF	1 1/2-60	6	8.7	—	—	—	\$3.00
41A4FL	1 1/2-61 1/2	6	25.5	—	4GMA41	A8419	4.25
60A2L	1 1/2-90	1	5	—	5DMA60	—	6.50
60A4L	1 1/2-90	6	38.5	—	6FMA60	A884	5.50
42A5G5	7 1/2-63	6	30	—	5GMA42	A8794	4.70
29I	7 1/2-9-90	1	6.5	754	G6M60	A8078	5.50
60A4F4	6-90	6	33.5	—	2F4A60	A8694	5.50
60A6F6-5	7 1/2-9-90	1	6	753	F6A60	A8994	5.50
362	7 1/2-9-90	6	24	754	TSZ60	—	5.50
Z50B4H4	6-75	1	7	—	G4850	A8670	5.00
Z60B6H6	9-90	1	89	752	G6860	A8677	5.50

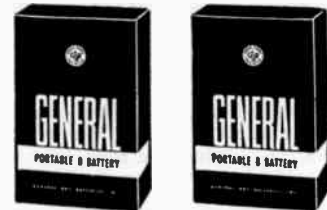
## GENERAL PORTABLE A BATTERIES

Type	Voltage	Pkg.		Interchangeable With			Price
		Std. Pkg.	Weight Lbs.	Eveready	Burgess	Ray-O-Vac	
D	1 1/2	50	12	—	—	—	\$0.125
4F1	1 1/2	6	9	742	4F	P94A	.95
6F1	1 1/2	6	13	743	6F	P96A	1.25
8F1	1 1/2	6	17.4	741	8F	P98A	1.65
3L1	1 1/2	6	11.4	745	4FL	P94L	.80
3H3	4 1/2	6	8	746	G3	P83A	.75
4F4	6	6	9	744	F4P1	P694A	.95
8F4	6	6	17.4	718	2F4	P698A	1.75



## GENERAL PORTABLE B BATTERIES

Type	Voltage	Std. Pkg.		Interchangeable With			Price
		Pkg.	Weight Lbs.	Eveready	Burgess	Ray-O-Vac	
V30A	45	6	11.4	—	A30	P430	\$2.00
F30A	45	6	11.4	—	A30X	BB30P	2.00
V30B	45	6	17	—	B30	P5303	2.00
V30AA	45	6	9	738	Z30	P7R30	2.50
V30AA2	45	6	9	—	Z30N	—	2.50
W30B	45	6	12	482	M30	P7830	2.00



## GENERAL "DuroMite" BATTERIES

New General DuroMite batteries are the finest in battery design and assembly. Thin, well-balanced flat cells are stacked like a roll of wafers. Each stack of cells sealed in its own plastic case, keeping the cells fresh until put in use. Maximum service life can be obtained from minimum of space used.

Type	Voltage	Std. Pkg.		Interchangeable With			Price
		Pkg.	Weight Lbs.	Eveready	Burgess	Ray-O-Vac	
W45A	67 1/2	12	10	467	XX45	4367	\$2.25
W30A	45	12	7	455	XX30	P3A30	1.65
W60A	90	12	13.5	490	—	—	2.95



## GENERAL "Leakproof" & LANTERN BATTERIES

The New General "Leakproof" flashlight cell comes to the market to fulfill the demand of practically every user. This demand is for extra long service, years of shelf life and protection against corrosion damage. The Industrial cell is recommended when light is needed frequently and for long periods.

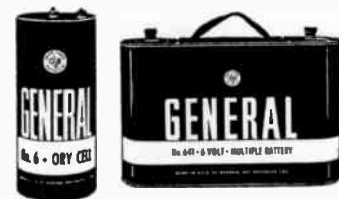
Type	Voltage	Std. Pkg.		Interchangeable With			Price
		Pkg.	Weight Lbs.	Eveready	Burgess	Ray-O-Vac	
C	1 1/2	72	8	935	1	1LP	\$0.10
DLP	1 1/2	240	59	—	—	2LP	.10
D	1 1/2	240	57	950	2	—	.10
D Industrial	1 1/2	250	59.5	1050	#2 Ind	2111	.12
AA	1 1/2	180	8	915	Z	7-R	.07 1/2
V4F Lantern	6	10	15.8	409	F4H	941	.70
4FB Bicycle	6	10	15.5	—	—	—	.90



## GENERAL IGNITION & ELECTRIC FENCE BATTERIES

All General batteries are designed to use the most efficient cells available. The 641 is made with 12 L cells and this construction has proven to produce exceptional performance when used on Electric Fence controls and other ignition applications.

Type	Voltage	Std. Pkg.		Interchangeable With			Price	
		Pkg.	Weight Lbs.	Eveready	Burgess	Ray-O-Vac	East	Pacific Ct.
#6	1 1/2	24	60	#6 lg	—	#6 lg	.70	\$0.75
#6 Tele	1 1/2	24	60	#6 Co.	—	#6 Tele	.70	.70
641 Multiple	6	6	54	1461	—	641	3.35	3.65



We manufacture all types of Hearing Aid and Model Airplane batteries. Write for particulars.

# GENERAL DRY BATTERIES, INC.

MAIN OFFICES AND FACTORY • 13000 ATHENS AVE., CLEVELAND, OHIO  
 FACTORIES • DUBUQUE, IA. • MEMPHIS, TENN. • TORONTO, ONT.

BRANCH OFFICES & WAREHOUSES • NEW YORK, CHICAGO, DALLAS, SAN FRANCISCO,  
 LOS ANGELES, PORTLAND, MEMPHIS, MINNEAPOLIS

# RCA Radio Batteries



**RADIO-ENGINEERED FOR EXTRA LISTENING HOURS**

## PORTABLE "AB" BATTERY PACKS

RCA Type	Voltage	Interchangeable With		Std. Pkg. Qty.	Dimensions			List Price	Net Price
		Eveready	Burgess		L.	W. or Dia.	Hgt.		
VS018	7 1/2-9-90	754	G6M60	6	10 3/4	3 1/2	4 1/2	\$5.50	\$3.85
VS019	7 1/2-9-90	753	F6A60	6	9 1/2	2 3/4	4 3/4	4.95	3.45
VS038	7 1/2-63	.....	G5A42	5	8 3/4	2 3/4	4 1/4	4.20	2.95
VS043	1 1/2-90	.....	5DA60	5	5 1/2	2 1/2	7 1/2	4.95	3.45
VS046	6-75	Zenith Z875	G4B50	6	12 3/4	2 3/4	4 1/2	4.95	3.45
VS047	9-90	Zenith Z985	G6B60	6	13 3/4	2 3/4	4 1/2	5.50	3.85
VS050	6-7 1/2-75	.....	T5Z50	6	8 3/4	2 1/4	3 1/4	4.50	3.15
VS052	1 1/2-61 1/2	Phil. 41A4G	4GA41	10	9 3/4	2 1/2	3 1/2	3.95	2.95
VS053	1 1/2-63	Phil. 41A4FL	4GA42	5	9 1/2	2	4 3/4	3.95	2.95
VS054	1 1/2-90	.....	6TA60	5	10	2 3/4	4 3/4	5.50	3.85
VS057	7 1/2-9-90	Philco P361	T5Z60	6	9 3/4	2 1/4	3 1/2	5.50	3.85
VS058	9-90	Zenith Z909	F6A60P	6	9 1/2	2 3/4	4 3/4	5.50	3.85
Kit No. 1	Includes	6-VS036, 1-VS016		12	.....	.....	.....	2.85	1.97

## PORTABLE "A" BATTERIES

VS002	4 1/2	746	G3	6	4	1 3/4	4 1/4	.75	.53
VS003	7 1/2	687	G5	5	3 1/4	2 3/4	4 1/4	1.10	.77
VS004	1 1/2	742	4F	6	2 3/4	2 3/4	4 1/4	.95	.68
VS005	1 1/2	.....	4FL	5	3 1/4	1 3/4	5 3/4	.90	.63
VS007	1 1/2	743	6F	4	3 1/4	2 3/4	4 1/4	1.25	.88
VS008	1 1/2	745	8FL	6	3 1/4	1 1/4	10 3/4	1.75	1.23
VS009	6	744	F4PI	6	2 3/4	2 3/4	4 1/4	.95	.67
VS010	6	718	2F4	10	3 1/4	2 1/4	5 3/4	1.75	1.23
VS011	6	747	2F4L	6	3 1/4	1 1/4	10 3/4	1.75	1.23
VS036	1 1/2	Sealed-in-Steel (Comb. Display & Carry Kit)		48	.....	1 1/4	2 3/4	.10	.063
VS065	7 1/2	717	C5	12	2 1/4	2	3 1/4	.95	.68
VS067	4 1/2	736	F3	6	4	1 3/4	4 1/4	.75	.53
VS129	7 1/2	.....	B5	12	4 1/4	1 1/4	3	.95	.67

## PORTABLE "B" BATTERIES

VS012	45	762	B80	6	4 1/4	2 3/4	5 3/4	2.35	1.63
VS013	45	482	M30	12	3 3/4	1 1/4	5 1/2	2.00	1.40
VS014	45	.....	A30	6	3 3/4	2 1/4	4 1/4	2.15	1.50
VS015	45	738	Z30	10	3	2 1/4	4	2.50	1.73
VS016	67 1/2	467	XX45	12	2 3/4	1 1/4	13 3/4	2.25	1.58
VS055	45	455	XX30	12	2 1/4	2 1/4	13 1/4	1.65	1.16
VS090	90	490	N60	12	3 1/4	1 3/4	13 3/4	2.95	2.07

## FARM "AB" BATTERY PACKS

VS021	1 1/2-90	758	.....	6	10 1/2	2 3/4	6 3/4	5.95	4.46
VS022	1 1/2-90	759	17GD60	1	15 3/4	4 1/4	6 1/2	5.95	4.46
VS045	1 1/2-90	Zenith Z28	18GD60	1	12 3/4	5 3/4	6 1/2	5.95	4.46

## FARM "A" BATTERIES

VS024	1 1/2	740	20F	6	7 1/4	2 1/4	7	3.30	2.31
VS025	3	X125	20F2	1	11 1/4	4	6	5.50	3.85
								5.75*	4.03*

## FARM "B" BATTERIES

VS026	22 1/2-45	485	2308PI	6	8 1/4	3 3/4	7 3/4	2.88	2.16
VS027	22 1/2-45	386	10308PI	4	8 1/4	4 1/4	7 3/4	3.95	2.93
								4.19*	3.09*

## RADIO-HEARING AID "A" BATTERIES

**VS070	1 1/2	Zenith Z1-S	TE	20	.....	1 1/4	4 1/4	.30	.19
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## FLASHLIGHT BATTERIES

VS034	1 1/2 (Pen.)	915	Z	120	.....	1 7/8	2	.075	.05
VS035	1 1/2 (Baby)	Sealed-in-Steel		100	.....	1	1 21/32	.10	.063
VS036	1 1/2	Sealed-in-Steel Size D		48	.....	1 1/8	2 3/8	.10	.063

## BATTERIES FOR INDUSTRIAL AND ELECTRONIC APPLICATIONS

VS006S	1 1/2 (Ign.)	6	.....	12	.....	2 3/4	1 6 3/8	.70	.465
								.75*	.50*
VS028	4 1/2	781	5360	10	2 3/4	1 3/8	12 1/4	.50	.35
VS029	1 1/2-3-4 1/2-6-7 1/2	773	5540	10	3 1/2	1 1/4	13 1/4	.95	.67
VS030	3-4 1/2	771	2370PI	15	4 1/4	1 1/4	3 1/4	.80	.56
VS031	3-4 1/2	768	5156PI	5	4	2 1/2	3	1.80	1.26
VS039	6 (Hot-shot)	1461-2	4F4H	4	10 3/4	2 3/4	17 3/4	3.35	2.27
								3.65*	2.48
VS040	6 (Lantern)	409	F4H	25	2 1/2	2 1/8	14 1/8	.70	.47
VS100	3	.....	F2BP	10	2 3/4	1 3/4	14 1/8	.71	.48
VS102	22 1/2	763	4156	10	3 3/4	2 1/4	12 3/4	1.80	1.26
VS106	1 1/2	.....	4PH	10	2 1/2	2 1/8	14 1/8	.70	.465
								.75*	.50*
VS112	22 1/2-45	762S	5308	5	4 1/4	2 3/4	15 1/4	2.15	1.50
VS114	22 1/2-45	.....	Z30NX	10	2 1/4	1 21/32	14 1/4	2.58	1.80
•VS127W	22 1/2-45	.....	10308SC	5	8	4	10 3/4	3.95	2.93
								4.17*	3.04*
VS130	1 1/2-3-4 1/2	761T	2370BP	10	4	1 1/4	13 3/4	.81	.56
VS131	3-4 1/2-6-9-10 1/2-16 1/2-22 1/2	778	5156SC	5	4 1/4	2 1/2	13 3/4	1.80	1.26
VS133	4 1/2	703	532	10	2 3/4	1 3/8	13 1/4	.45	.31
VS157	22 1/2-45	794	21308SC	5	8 1/4	4 3/4	17 1/4	4.15	3.10
								4.40*	3.22*

\*\*Exact equivalent of Zenith Z1-S and Ray-O-Vac PFI; slightly larger than Burgess TE and Eveready 1052P. \*Pacific Coast price. •Wax dipped. †Includes term. height which aver. 1/4"

**SERVICING 99% OF PORTABLE & FARM HOME RADIO REQUIREMENTS**



VS019



VS047



VS002



VS013

RCA's selective distribution primarily to the RADIO TRADE steers customers back to you!



VS022



VS025

The RCA Trademark and attractive package guarantee immediate customer acceptance!



VS006S

# PERMA-POWER

## BATTERY ELIMINATORS



Size:  $2\frac{7}{8}$ " x  $4\frac{1}{2}$ " x  $6\frac{3}{4}$ "  
Shipping weight: 4 lbs.

### MODEL "A"

for  $1\frac{1}{2}$  volt radios with 4, 5, or 6 tubes. Model A has a circuit designed for optimum voltage regulation and changes in line voltages. It maintains practically constant voltage control under varying tube loads, with universal sockets for all battery plugs. Model A will fit all farm battery radios as well as the battery compartment of practically all portables.

#### PROVIDES

"A" — 1.5v at 200 m.a.  
1.35v at 250 m.a.  
1.55v at 300 m.a.  
1.35v at 350 m.a.

"B" — 90v at 13 m.a.  
101v at 8.5 m.a.

LIST PRICE . . . . . **\$14<sup>95</sup>**

### MODEL "E" BATTERY ELIMINATOR

for 2-volt radios with 4, 5, 6, 7 or 8 tubes. Model "E" has both A and B circuits designed for optimum voltage regulation and changes in line voltage. No distortion or "motor boating."

Model "E" will fit all farm battery radio compartments.

PROVIDES: "A" — 2v at 750 m.a.  
"B" — 135v at 25 m.a. tapped at 112v, 90v, and 67v. Screw type terminals.  
Size:  $2\frac{1}{4}$ " x  $4\frac{7}{8}$ " x 6 1/8"  
Shipping weight: approx. 4 lbs.

LIST PRICE **\$18<sup>75</sup>**



### MODEL "B"

#### BATTERY ELIMINATOR

for 6-volt radios, twin-powered. Model B will convert most 6-volt battery radios. Operates on 105-125 volt 50-60 cycle lines supplying "A" and "B" power. Vibrator disturbance eliminated and high fidelity performance assured by sensational new design having two isolated sources; one for the vibrator and one for the filaments. It provides two sources of 6 volts at  $1\frac{1}{2}$  amps., or when connected in parallel — 3 amps. Screw type terminals.



LIST PRICE **\$19<sup>95</sup>**

Size:  $3\frac{5}{8}$ " x  $6\frac{1}{8}$ " x  $5\frac{1}{2}$ "  
Shipping weight: approx. 7 lbs.

## PERMA-POWER COMPANY

4721 NORTH DAMEN AVENUE  
CHICAGO 25, ILLINOIS

# Mueller Electric Co.

CLEVELAND, OHIO

## MUELLER BATTERY AND TEST CLIPS

U.S. PATENTS: 1,521,903; 1,686,842; 1,779,442; 1,794,976; 1,865,151; 1,994,251; 1,999,613; 2,074,324; 2,136,814; 2,418,113.

For use in making quick, temporary electrical connections. Packed 10 in a box, half marked + half plain to indicate polarity. Screw connections



**No. 45 PEE WEE**  
A very small test clip for radio, ignition, meter and similar work. 1 1/2" long. Jaw spread 3/8". Steel, cadmium plated.

EACH NET.....\$0.07      LOTS OF 10.....\$0.045



**No. 45-C**

**Solid Copper R.F. Test Clip**

Solid copper radio frequency test clip. Phosphor bronze spring, brass screw. Will not heat up in high frequency test work, entirely non-ferrous. 1 1/2" long.

EACH NET.....\$0.10      LOTS OF 10.....\$0.07

Use No. 47 Insulator for clips 45 and 45-C.



**No. 48-B**  
A small test and battery clip for radio use and general testing purposes. 2" long. Jaw spread 1/2". Steel, cadmium plated.

EACH NET.....\$0.07      LOTS OF 10.....\$0.05

No. 48C—Solid Copper. Same size as 48-B.  
EACH NET.....\$0.12      LOTS OF 10.....\$0.085



**No. 50-C Needle Clip**  
Solid bronze. Needle pierces insulation of wire for quick test contact. 2 1/4" long.  
EACH NET \$0.20      LOTS OF 10 \$0.14  
No. 51-C—Large crocodile clip. Same as 50-C but without needle.

EACH NET \$0.15      LOTS OF 10 \$0.105

Use No. 49 insulator for Clips 48-B, 48-C, 50-C and 51-C.



**No. 22 Twin-Clip**  
Jaws on both ends. Great time-saver in test work. Used to hold or rack articles for display or processing. 2" long. Steel cadmium plated.  
EACH NET.....\$0.10      LOTS OF 10.....\$0.07



**No. 27**  
A high grade test clip with meshing teeth on three sides of jaws. For laboratory and shop test work 2 1/8" long. Jaw spread 5/8". Steel, cadmium plated.

EACH NET.....\$0.10      LOTS OF 10.....\$0.07

No. 27-C—Solid copper. Same size as No. 27.  
EACH NET.....\$0.18      LOTS OF 10.....\$0.125

Use No. 29 Insulator for clips 27 and 27-C.



**No. 24-A**

A medium sized battery clip. Stands erect on battery post. Lead coated, copper shunt protects spring. 2 3/4" long. Jaw spread 1". Steel, lead plated.  
EACH NET.....\$0.14      LOTS OF 10......095

No. 24—Solid copper. Same size as No. 24-A.  
EACH NET.....\$0.25      LOTS OF 10.....\$0.18

Use No. 26 Insulator for Clips 24-A and 24.

**LARGER SIZES OF CLIPS**

	Each Net	Lots of 10
No. 21-A—Heavy Duty Steel, lead plated, 4" long.....	\$0.21	\$0.15
No. 21—100 Amp. Solid Copper, 4 1/4" long.....	.61	.43
No. 11A—100 Amp. Steel, lead plated, 6" long.....	.75	.53
No. 11—200 Amp. Solid copper, 6" long.....	1.17	.82
No. 33—300 Amp. Solid copper, 7 3/4" long.....	2.00	1.40

(Above furnished with lug connections.)

**FLEXIBLE INSULATORS FOR CLIPS**



A convenient protection against short circuit and electric shock. Packed 10 in a box, 5 red and 5 black to indicate polarity. Long tail prevents breakage of wire. Constructed so that clip is held in firmly.

Copyright by U. C. P., Inc.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

**CROCODILE CLIPS**

U.S. Patent No. 1,999,613



**No. 85 or 85-C Clip with No. 87 Insulator**



**No. 85-T Clip**

No. 85—A very small clip with slender, elongated jaws for getting into tight places in radio or electrical test work. Screw connection. 2 1/4" long.

EACH NET.....\$0.08      LOTS OF 10.....\$0.05

No. 85-C—Same as No. 85, except solid copper. A radio frequency, EIGHTY-FIVE CENTS. LOTS OF 10.....\$0.08

entirely non-ferrous test clip.  
No. 85-T—New Crocodile "Tip-Clip"—equipped with standard phone tip on one jaw, otherwise same as No. 85. Ideal for use as a prod, for ordinary clip connections and for connections to insulated binding posts having non-removable heads. 2 3/4" long.

EACH NET.....\$0.16      LOTS OF 10.....\$0.11

Use No. 87 Insulators for clips 85, 85-C and 85-T. Red and Black. Cover entire clip except nose. Protects against short and shock. Helps to distinguish leads.

**ALLIGATOR CLIPS**

**No. 60—CONVENTIONAL TYPE**

Accurately made, slim jaws, fine meshing teeth. Convenient, round thumb grip, barrel connection for banana plug. Equipped with small soldering lip. Strong spring with a hard bite. Cadmium plated. 2" long.

EACH NET.....\$0.07      LOTS OF 10.....\$0.045



**No. 60-S—SCREW CONNECTION**

Eliminates necessity for soldering. Otherwise same as No. 60.

EACH NET \$0.08      LOTS OF 10 \$0.05



**No. 60-CS—COPPER R.F. ALLIGATOR CLIP**

Same as No. 60-S except made of solid copper. Has brass screw connection. Ideal for R.F. work. Will not heat up in H.F. circuits. Bright, natural copper finish. 2" long.

EACH NET.....\$0.11      LOTS OF 10.....\$0.08



**No. 60-HS—STEEL ALLIGATOR CLIP WITH INSULATED HANDLE**

Same as No. 60-S except equipped with red and black insulating sleeves on end. Very convenient for distinguishing leads. Has screw connection also. Cadmium plated. 2 1/4" long.

EACH NET.....\$0.11      LOTS OF 10.....\$0.08



**No. 60-CHS—COPPER ALLIGATOR CLIP WITH INSULATED HANDLE**

Same as No. 60-CS except equipped with red and black insulating sleeves on end. Brass screw connection, for R.F. work. 2 1/4" long.

EACH NET.....\$0.15      LOTS OF 10.....\$0.10



**WEE-PEE-WEE No. 88**

Entirely Non-ferrous. Smaller Than Ever! An extremely small clip for fine testing in radio and electrical work. Light-Weight; thin-nosed; spring-temper phosphor bronze. Ideal for close-wound coils. 1 1/4" long; jaw spread 1/4".

EACH NET.....\$0.16      LOTS OF 10.....\$0.11

Use No. 93-P R.F. Insulator.



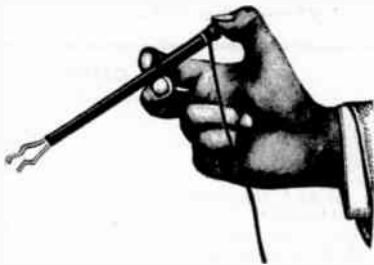
Insulator No.	For Use with Clip No.	Each Net	Lots of 10
13	11, 11-A	\$0.54	\$0.38
21	21, 21-A	.33	.23
26	24, 24-A	.23	.16
29	27, 27-C	.17	.12
35	88	1.42	1.00
47	46, 46-C	.11	.075
49	48-B, 48-C, 60-C, 61-O	.11	.075
87	85, 85-C, 86-T	.10	.066
93-P	88	.05	.035



# Mueller Electric Co.

## THE SNAPPER

A Long Insulated Test Clip and  
A "Triple Threat" Radio Tool



U. S. Patent No. 2,074,324

No. 99—7" Long Insulated

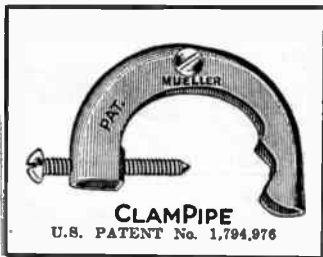
The long tube is of insulating material and is fitted with spring contact jaws on the far end.

The jaws are operated by a push of the thumb on the near end. Wire is quickly and easily connected in a hole in the insulator knob binding post on the near end.

May be used as (1) A "Deep Sea" Electric Test Clip—test contacts with ease, deep in the recesses of radio chassis with no danger of short circuits; (2) An Electric Contact Prod—clip jaws may be used to make quick prod contacts, or clip one Snapper on ground circuit and prod with another; (3) A Retriever—start small screws and nuts or pick up odds and ends that may accidentally be dropped into inaccessible places.

PRICE...\$0.90 EACH Dealers' Whol-sale Price, each...\$0.54 Net  
Snappers are generally used in pairs—1 red and 1 black.

## CLAMPIPE GROUND CLAMP



CLAMPIPE

U.S. PATENT No. 1,794,976

No. 58

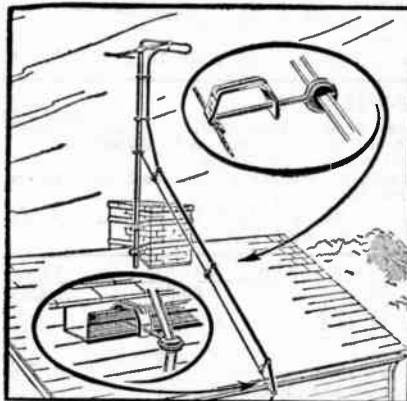
The exclusive patented feature of a U-shaped cross section in combination with a U-shaped clamp gives a rigidity and effectiveness to the ClamPipe that cannot be found in any other make.

The ClamPipe will not bend or lop over when applied to a pipe. The point of the large case hardened screw, cuts through rust, paint or corrosion into clean, fresh metal, insuring a good contact. The Clamp may be installed on a pipe lying flush against a wall. Will not spread open.

The best ground clamp value on the market. Applicable to pipe  $\frac{3}{8}$ " to 1 1/2" outside diameter.

Packed 10 in a box

EACH NET.....\$0.13 LOTS OF 10.....\$0.09



### HAS THESE USEFUL FEATURES —

- One standard size solves many lead-in problems — far more useful than straps or wire bands.
- Brings lead-in to edge of roof — right where you want it — no more "draping" of wire across the roof.
- On those high jobs, come right down a guy-wire — and get around the gutter in the clear.

### LOW PRICES!

All packed 100 in a carton

No. 135 For all types of Flat Twin-Lead.  
No. 136 For Coax Cables up to  $\frac{1}{2}$ " O.D.  
EACH NET. \$0.13 LOTS OF 10, \$0.09  
LOTS OF 100, \$0.078

Also in these Double Lead-in Types:  
No. 135-DB For Flat Twin-Lead.  
No. 136-DB For Coax Cables up to  $\frac{1}{2}$ " O.D.  
EACH NET, \$0.25 LOTS OF 10, \$0.18.  
LOTS OF 100, \$0.15

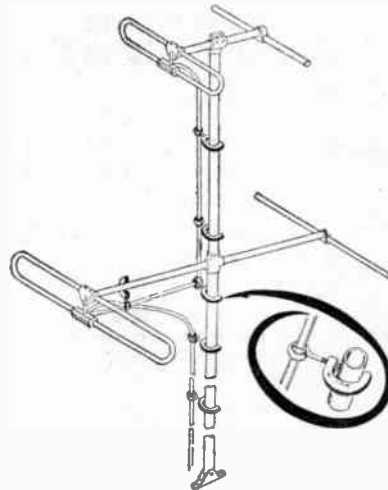
## THE "TENNA-CLAMPIPE"

(ClamPipe Trade-mark Reg. U. S. & Can. Pat. Off.)

A Standoff Insulator that clamps on Quickly—Easily—almost anywhere for Television and FM Antenna Lead-Ins.

Quickly and Permanently Supports Lead-Ins

- On antenna masts & cross-arms.
- On pipes, I-beams, etc., on basement ceilings.
- On any rigid object up to 1 1/2" in diameter or thickness.



SIMPLY TURN THE SCREW-EYE BY HAND FOR A SOLID, PERMANENT GRIP.

A great time-saver—the installation man's third hand.

(Consists of an assembly of the famous Mueller ClamPipe Ground Clamp and a steel screw-eye with an insulating grommet. Holds lead-in wire from 1 1/4" to 2 1/2" away from clamp. Can be applied to any antenna mast, pipe or other object up to 1 1/2" in diameter or thickness.

All metal parts are completely weatherproofed.

Insulating grommet is molded of high quality plastic having superior dielectric and non-absorptive properties. Will withstand exposure to weather.

No. 130 for all types of Flat Twin-lead.

No. 131 for all Coax Cables up to  $\frac{1}{2}$ " O.D.

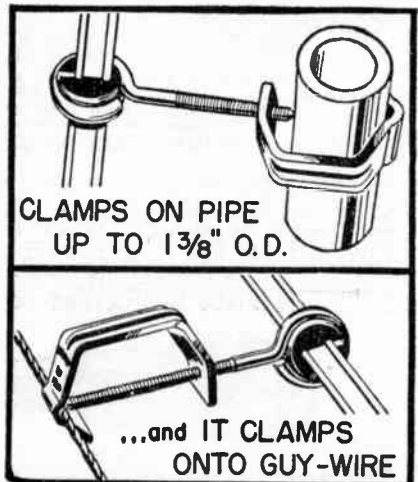
Packed 100 in a carton

EACH NET.....\$0.16 LOTS OF 10.....\$0.11  
LOTS OF 100.....\$0.098

## THE "TENNA-CLAMP"

A New 3-in-1 Stand-off Insulator Clamp!  
Supports TV and FM Lead-ins on  
MASTS, PIPES, GUTTERS AND GUY-WIRES

Has same general features and specifications as Tenna-ClamPipe described above except different type clamp channelled on end to take standard guy-wire in addition to pipes.

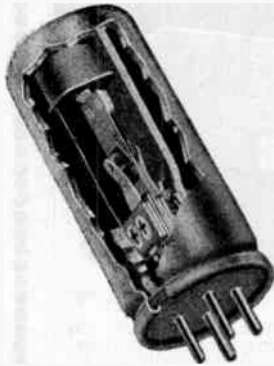


CLAMPS ON PIPE  
UP TO 1 3/8" O.D.

...and IT CLAMPS  
ONTO GUY-WIRE



## CORNELL-DUBILIER VIBRATORS



### FEATURES

- C-D designed electronic chorometric equipment removes guesswork in contact point setting and assures consistent high quality.
- Exclusive C-D pole piece design and armature weight results in a perfectly-balanced unit with greater efficiency.
- Exclusive C-D base mounting results in a full floating unit. That's why C-D vibrators last longer.
- Unit completely enclosed in new floating sock—an exclusive with C-D vibrators. Eliminates usual difficulties found in other vibrators.
- New stack design will take peak voltages of even 4,200 volts with no damage to vibrator.

C - NON-SYNCHRONOUS			CS - NON-SYNCHRONOUS SPECIAL			D - SYNCHRONOUS		
Type No.	List Price	Net Price	Type No.	List Price	Net Price	Type No.	List Price	Net Price
C00	\$4.45	\$2.67	CS03-12	\$7.00	\$4.20	D00	\$7.00	\$4.20
C00-32	6.50	3.90	CS03-32	7.00	4.20	D04	7.00	4.20
C01	4.45	2.67	CS04P	5.75	3.45	D06	7.00	4.20
C03	4.45	2.67	CS06	6.50	3.90	D07	7.00	4.20
C04	5.75	3.45	CS10	6.50	3.90	D08	7.00	4.20
C07	4.45	2.67	CS11-12	7.00	4.20	D09	7.00	4.20
C08	5.75	3.45	CS15	6.25	3.75	D09-4	7.00	4.20
C09	4.45	2.67				D10	7.00	4.20
C14	4.45	2.67				D11	7.00	4.20
C20P	4.45	2.67				D13	7.00	4.20
C21	4.45	2.67				D13-4	7.00	4.20
C23P	3.75	2.25				D16	8.30	4.98
C26P	3.75	2.25				D21	7.00	4.20
C28P-32	8.30	4.98				D22	7.75	4.65
C31	4.45	2.67				D25	8.30	4.98
C33	4.45	2.67				D26	7.00	4.20
C35	4.45	2.67				D29	8.30	4.98
C42M	3.75	2.25				D31	7.75	4.65
C43M	5.75	3.45				D34	7.00	4.20
C63	5.75	3.45				D35	7.00	4.20
C66	5.75	3.45				D35-4	7.00	4.20
C67-32	7.00	4.20				D36	7.00	4.20
						D37	7.00	4.20
						D38	7.00	4.20
						D40	7.75	4.65
						D43	7.00	4.20
						D43-32	7.75	4.65
						D54	7.00	4.20
						D63	8.30	4.98
						D64	8.30	4.98

DS - SYNCHRONOUS SPECIAL		
Type No.	List Price	Net Price
DS04	\$8.30	\$4.98
DS05	7.75	4.65
DS05-12	9.05	5.43
DS05-32	9.05	5.43
DS07	7.75	4.65
DS07-12	9.05	5.43
DS07-32	9.05	5.43
DS09-12	9.05	5.43
DS10	7.00	4.20
DS10-12	7.75	4.65
DS14-12	7.75	4.65
DS15-12	7.75	4.65
DS15-24	7.75	4.65
DS16	7.75	4.65
DS16-12	9.05	5.43
DS20	7.00	4.20

*Mr. Serviceman: Never be out of these popular numbers. They constitute 88% of all your demand in the ratio shown.*

C00	22%	C23P	4%	D00	3%
C01	5%	C26P	11%	D25	3%
C03	5%	C35	9%	D26	7%
C14	4%	C42	10%	D06	2%
C20P	3%				

Type No.	Voltage	Freq.	Max. Load, Amps.	Diameter	Height in inches	Identifying Characteristic	Type No.	Voltage	Freq.	Max. Load, Amps.	Diameter	Height in inches	Identifying Characteristic
C00	6	115	6	1 1/4	3 1/4	Std. 4 pr.	C66	6	115	6	1 1/4	2 1/4	Used in 3 similar 1935 sets.
C00-32	32	115	1.4	1 1/4	3 1/4	32 v. std. duty.	C67-32	32	115	1.4	1 1/4	3 1/4	For certain farm sets.
C01	6	115	6	1 1/4	2 1/4	Std. for low headroom.	D11	6	115	4	1 1/4	3 1/4	For general use.
C07	6	150	6	1 1/4	3 1/4	Spl. 150 cycles.	D21	6	115	4	1 1/4	3 1/4	Large for low vib.
C14	6	115	6	1 1/4	2 1/4	Spl. for some late model Zenith sets.	D35	6	115	4	1 1/4	3 1/4	Small diam., spl. use.
C20P	6	115	6	1 1/4	3 1/4	Philco dup repl.	D35-4	4	115	4	1 1/4	3 1/4	For 4 v. circuits.
C21	6	115	6	1 1/4	3 1/4	Delco dup repl.	D36	6	180	5	1 1/4	2 1/4	For high freq. circuits.
C23P	6	115	6	1 1/4	4 1/4	Philco dup repl.	DS10	6	115	6	1 1/4	3 1/4	For motorcycle police duty.
C26P	6	115	6	1 1/4	2 1/4	Spl. for Philco.	DS10-12	12	115	3	1 1/4	3 1/4	Aviation spl.
C42M	6	115	6	1 1/4	2 1/4	Spl. for Motorola.	DS15-12	12	180	3	1 1/4	2 1/4	Aviation spl.
CS15	6	115	10	1 1/4	3 1/4	For high input current.	DS15-24	24	180	1.5	1 1/4	2 1/4	Aviation spl.
CS16	6	115	10	1 1/4	3 1/4	With handle, for Pol. V-powers.	D34	6	115	4	1 1/4	3 1/4	For certain 6 v. home sets.
CS03-12	12	115	6	1 1/4	3 1/4	12 v. hvy.-duty.	CS04P	6	115	6	1 1/4	3 1/4	For certain Philco Police sets
CS03-32	32	115	2.5	1 1/4	3 1/4	32 v. hvy.-duty.	D43	6	115	6	1 1/4	3 1/4	Special base.
C43M	6	115	6	1 1/4	4 1/4	Ears to hold vibrator down. Motorola spl.	D43-32	32	115	1.4	1 1/4	3 1/4	Special base.
C09	6	115	6	1 1/4	2 1/4	For low headroom.	D00	6	115	6	1 1/4	3 1/4	Std. type rev. sync.
C31	6	115	6	1 1/4	3 1/4	For normal applications.	D07	6	180	5	1 1/4	3 1/4	180 cycles, normal size.
CS06	6	115	10	1 1/4	3 1/4	For certain Vipowers.	D08	6	140	6	1 1/4	2 1/4	140 cycles, short.
C08	6	115	6	1 1/4	3 1/4	Spl. 5 ohm resistors.	D37	6	180	5	1 1/4	2 1/4	180 cycles, small.
C03	6	115	6	1 1/4	3 1/4	Dup. repl. 1 1/4" diam.	D38	6	140	6	1 1/4	3 1/4	140 cycles, normal size.
C33	6	115	6	1 1/4	3 1/4	Dup. repl. with handle puller.	D40	6	115	6	1 1/4	4 1/4	Large size.
C35	6	115	6	1 1/4	2 1/4	Replaces 1 1/4" dia. vibrators.	D06	6	115	6	1 1/4	3 1/4	Std. type rev. sync.
C28P-32	32	115	1.4	1 1/4	3 1/4	Spl. plug on leads.	D54	6	115	6	1 1/4	2 1/4	For low headroom.
C04	6	115	6	1 1/4	3 1/4	For Setchell-Carlson Sets.	DS05	6	115	10	1 1/4	3 1/4	For heavy input current.
D09	6	115	4	1 1/4	3 1/4	Std. 6 v. size.	DS05-12	12	115	6	1 1/4	3 1/4	For heavy duty.
D09-4	4	115	4	1 1/4	3 1/4	Std. 4 v. size.	DS05-32	32	115	2.5	1 1/4	3 1/4	For heavy duty.
D13	6	115	4	1 1/4	3 1/4	Lge. for low vib.	DS14-12	12	115	4	1 1/4	2 1/4	Aviation special.
D13-4	4	115	4	1 1/4	3 1/4	Lge. for low vib.	D22	6	115	4	1 1/4	3 1/4	Split-reed type.
DS00-12	12	120	3	1 1/4	3 1/4	Aviation spl.	D31	4	115	4	1 1/4	3 1/4	4 v. split-reed.
DS04	6	115	6	1 1/4	4 1/4	Motorcycle pol. 2x.02 mfd con.	D04	6	120	6	1 1/4	3 1/4	Spl. base wiring.
D16	6	115	6	1 1/4	4 1/4	Contains 2x.02 mfd. cond.	D64	6	115	6	1 1/4	4 1/4	Contains 2x.013 mfd. cond.
D10	6	115	4	1 1/4	3 1/4	Standard size.	DS07	6	180	6	1 1/4	3 1/4	180 cycles.
D25	6	115	6	1 1/4	4 1/4	Contains 2x.013 mfd. cond.	DS07-12	12	180	4	1 1/4	3 1/4	180 cycles.
D26	6	115	6	1 1/4	3 1/4	Handle on top.	DS07-32	32	180	2	1 1/4	3 1/4	180 cycles.
D29	6	115	6	1 1/4	4 1/4	Contains 2x.013 mfd. cond.	CS13-12	12	180	4	1 1/4	3 1/4	Aviation spl.
							CS10	6	115	10	1 1/4	3 1/4	Spl. base wiring.
							CS11-12	12	115	6	1 1/4	3 1/4	Spl. base wiring.

**WARNING:** Always check the Buffer Capacitors before installing a new vibrator: Failure to do so will void the guarantee. Always use C-D Buffer Capacitors for replacement.

# ELECTRO BATTERY ELIMINATORS

Unmatched in Performance • Quality • Price

**New Model "B" DC Power Supply for Testing/Operating** auto radios, relays, telephone circuits, other low voltage devices. New conduction cooling method increases rectifier power rating 1½ times, lower cost per ampere output over other types. Ample power to operate two auto radios at once. Peak instantaneous current rating of 35 amps (from 50/60 cycle 115 volt source). Supplies 3 to 9 volts at other ratings. Size: 12" x 7" x 8½". Weight packed: 32 lbs.

**New Model "BJ" Junior** same except for: lower cost; operates 1 auto radio; 1—12.5 amps. at 6 v. cont. rating; 25 amps. intermittent; AC ripple less than 0.4 v. at 6v. DC 8 amps.; voltmeter 0-10 v.; ammeter 0-20 amps. 5% accuracy; 2000 mfd. filter condenser; 21 lbs.



**Model "P" Compact Converts Battery Radio to All-Electric.** Operates any 1.4 volt 4 to 6 tube battery radio from 115 volt 50/60 cycle source. Complete filtering insures hum-free silent operation. Easily fits into battery compartment of most radios. Eliminates batteries, saves money. Low operating cost, uses only 11 watts. Has tube rectifier, on-off switch, standard plug and sockets. Cabinet: Blue Hammerloid finished steel. Size: 2¾" x 3½" x 6¾". Weight Packed: 3½ lbs.

**Model "S" Compact** . . . . . with selenium rectifier.



**Model "F" Compact Converts Battery Radio to All-Electric.** Operates any 2 volt 4 to 7 tube battery radio from 115 volt 50/60 cycle source. Assures continuous, dependable hum-free performance without fading. Eliminates battery replacement costs. Fits most radio battery compartments. Costs only a few cents per hundred hours of operation, uses 11 watts. Has on-off switch, standard plug and sockets.

Cabinet: Blue Hammerloid finished steel. Size: 2¾" x 4½" x 8¾". Weight Packed: 5½ lbs.

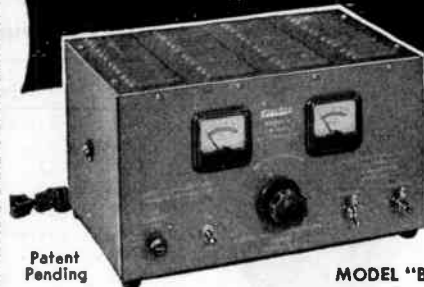
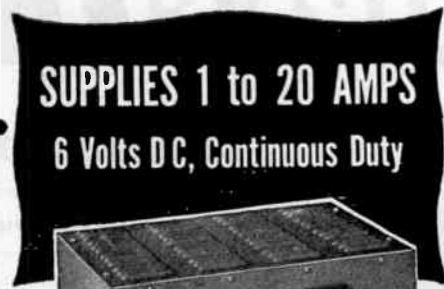
**Model "FH" Compact** . . . with larger filament choke supplying 650 ma. filament current.



**Model "Q" Synchro Power for Areas without 115 V Power Lines.** Operates any 1.4 volt 4 to 6 tube battery radio from 6 volt storage or dry battery or Wincharger. Provides "A" and "B" power for over 3 weeks on one storage battery (100 A.H.) charge. Entirely eliminates fading and static. Low storage battery drain, only 1.2 amperes per hour. Eliminates battery replacement costs. Has on-off switch, standard battery clips, plug and sockets.

Cabinet: Blue Hammerloid finished steel. Size: 2¾" x 3½" x 6¾". Weight Packed: 3 lbs.

Many Other Models Available



Patent Pending

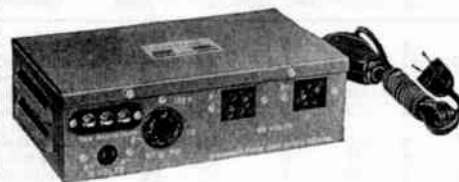
MODEL "B"

Less than 3% AC ripple or hum. Damped volt and ammeters (no wiggling). 8 Heavy-duty power tap adjustments. Voltmeter 0-10 volts 3% accuracy. Heavy-duty selenium rectifiers, switch, transformer, choke. 6000 mfd. filter condenser.



MODEL "P"

"A" Supply Output: 5-6 tubes (average) 1.4 V at 320 ma.; 4 tubes 1.4 V at 250 ma.; 4 tubes 1.4 V at 200 ma. "B" Supply Output: 90 volts DC at 12 ma. Primary: 115 volts AC at 60 cycles. Also for 220 volt operation.



MODEL "F"

"A" Supply Output: 7 tubes 2 V ct 480 ma. — 500 ma. max.; 6 tubes 2 V at 420 ma.; 4-5 tubes (average) 2 V at 325 ma. "B" Supply Output: 67, 90, 112, 135 volts DC at 18 ma. Primary: 115 volts AC at 60 cycles. Also 220 v. operation.



MODEL "Q"

"A" Supply Output: 5-6 tubes (average) 1.4 V at 320 ma.; 4 tubes 1.4 V at 250 ma.; 4 tubes 1.4 V at 200 ma. "B" Supply Output: 60 volts DC at 12 ma. Primary: 115 volts AC at 60 cycles.

**ELECTRO PRODUCTS LABORATORIES, INC. • Pioneer Manufacturers of Battery Eliminators**

# MALLORY VIBRATORS • VIBRAPACKS\* • RECTIFIERS • BATTERY CHARGERS SPECIAL COMPONENTS AND MISCELLANEOUS ITEMS

\*Reg. U. S. Pat. Off.

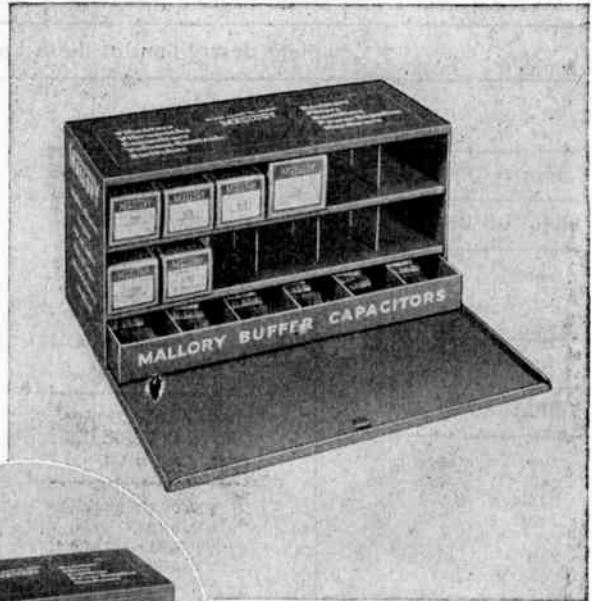
★ Complete descriptions of these parts will be found on the following pages.

Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price
<i>Mallory Page 2</i>		<i>Mallory Page 3</i>		<i>Mallory Page 8</i>		<i>Mallory Page 10</i>	
<b>VIBRATOR DEAL</b>						<b>WASHERS</b>	
2448	\$43.70	T4003	\$8.90	IS24C7J	\$10.05	203	\$0.30 per 10
		GC7	.40	IS24B9	15.55	212	.20 per 10
		AR-1 Adapter	1.35	IS28C7J	11.85	225	.20 per 10
		SK-1	1.15	F16H1P	5.85	228	.20 per 10
<i>Mallory Page 3</i>		<i>Mallory Page 5</i>				227	.20 per 10
<b>VIBRATORS</b>		<b>VIBRAPACK* POWER SUPPLIES</b>		<i>Mallory Page 9</i>		<b>SOLDERING IRON TIPS</b>	
222	\$8.30	*Reg. U.S. Pat. Off.		<b>MALLORY INDUCTUNER*</b>		311	
245	7.00	VF-223	\$ 8.00	*Reg. Trade Mark		312	
245A	7.00	VP-540	30.00	8303	\$15.00	\$0.70	
245C	7.00	VP-551	22.00	8304	18.00	.80	
246	7.00	VP-552	26.25	<b>VIDEOCOUPLER</b>		<b>DIAL PLATES</b>	
247	7.00	VP-553	24.50	VC-101		\$0.20	
248	7.00	VP-554H	28.75			454	
G248	7.75	VP-555H	52.00			455	
249	7.00	VP-557	52.00			456	
270B	8.30	VP-G558	28.75			457	
271HD	8.30	VP-F558	31.25			458	
273C	8.30	<i>Mallory Page 6</i>		<b>YARD-OHM RESISTANCE KITS</b>		459	
273D	8.30	<b>BATTERY CHARGERS AND ACCESSORIES</b>		YO-1		.75	
292	5.75	6AC4	\$14.95	YO-5		.75	
294	4.45	6AC8	19.95	YO-10		.75	
F294	6.50	6AC10	27.95	YO-25		.75	
298	5.75	12AC5	35.95	YO-50		.75	
505P	4.45	6RS10	34.95	YO-100		.75	
506P	5.75	R-852	1.80	YO-250		.75	
509P	3.75	R-853	.25	YO-500		.75	
514	7.00	R855	1.80	<b>GRID BIAS CELLS</b>		472	
716	7.00	MMF12	9.50	BC-2		\$0.45 each	
725C	7.75	<i>Mallory Page 7</i>		GB11A		.15 each	
G725C	9.05	<b>6AC80 \$84.50</b>		GB11B		.20 each	
742	7.00	R-854 7.50		GB12		.25 each	
743	7.00	<i>Mallory Page 8</i>		GB13		.35 each	
748	7.00	<b>RECTIFIERS</b>		GB14		.40 each	
G749C	9.05	IB4R \$2.05		GB15		.15 each	
825C	6.25	IB8R 2.45		GB16		.15 each	
826C	5.75	IB12R 2.80		<i>Mallory Page 10</i>		<b>KNOB</b>	
F826C	7.00	IB12C1J 5.45		365-1		\$0.25	
G826C	7.00	IB12C3 5.90		365-R-1		.25	
839	5.75	IB12C5 5.90		366-1		.20	
852	4.45	IB12L5 5.45		366-R-1		.20	
853	4.45	F18C3 7.65		367-1		.25	
854	4.45	IF18CB7M 8.50		368-1		.20	
859	4.45	IS18CB7 8.10		<b>MOUNTING NUTS</b>		232	
860	4.45	IS16B7 10.10		232		\$0.15 per 10	
870	4.45	IS16B9 11.10		255		.20 each	
908M	3.75	F20C7 10.10		A-11260-2		.30 each	
953W	7.00			A-11260-12		.25 each	
954	7.00						
1100	4.45						
1501	5.75						
1502	6.25						
T4002	9.70						

# THE MALLORY 2448 VIBRATOR DEAL

## Here's What You Get:

- ① Six popular Mallory vibrators
- ② Twelve Mallory buffer capacitors
- ③ Services 75% of your replacement needs
- ④ Simplifies your inventory control
- ⑤ Extra space for flexible inventory
- ⑥ Cabinets firmly "stack" together; use as many as you need to handle your stock



**You Get the Cabinet  
at no Additional Cost...  
When You Purchase  
the Vibrators at  
Your Regular Discount**



Picture at right shows how your vibrator cabinet nests with any Mallory Control Deal cabinet. Your vibrator cabinets nest together, too, to handle your complete stock of vibrators. The Mallory Radio Service Encyclopedia is purchased separately.

**APPLICATION**—The Mallory 2448 Vibrator Deal cabinet assures more speed in vibrator replacement work . . . gives you the advantage of work-bench accessibility . . . simplifies your inventory problems . . . gives you wide coverage with a minimum selection of Mallory vibrators.

**GENERAL DESCRIPTION**—Consists of 6 of the most popular type Mallory vibrators. Cabinet contains 12 individual compartments, enabling you to make 6 additional selections. A large drawer is divided into 6 sections to hold a large stock of Mallory buffer capacitors. Twelve capacitors come with the 2448 Deal. Cabinet constructed of 28-gauge sheet steel, neatly finished in blue with white lettering and orange trim.

**USE IN INVENTORY CONTROL**—With the Mallory 2448 Vibrator Deal cabinet in your shop, inven-

tory control is simplified. You keep similar type vibrators together. You determine at a glance which vibrators you need to re-order. This assures an adequate, up-to-date supply of Mallory vibrators you need.

**CONTENTS**—(Complete descriptive information on each of the following vibrators and buffer capacitors may be found on the following page and in the Mallory Capacitor Section page 11, respectively.

Mallory Vibrators, 1 each:

248, 716, 859, 870, 1100, 1501

Mallory Buffer Capacitors, 2 each:

OT-371, OT-372, OT-373, OW-344, OW-345, OW-346

**PRICE**—When you purchase the vibrators and buffer capacitors included in the Mallory 2448 Vibrator Deal, at your regular discount, you get the cabinet at no additional cost!

### You'll Use Your MALLORY 2448 VIBRATOR DEAL in all These Radio Sets

Admiral	Chrysler	Emerson	Grunow	Motorola	Pontiac	Stewart-Warner
Arvin	Clarion	Firestone	Howard	Nash	RCA	Studebaker
Atwater-Kent	Crosley	Ford	Hudson	Oldsmobile	Sears-Roebuck	Truetone
Belmont	Delco	Gamble-Skogmo	Kaiser-Frazer	Packard	Sentinel	Wells-Gardner
Buick	De Soto	General Electric	Lincoln	Motor Car	Sonora	Westinghouse
Cadillac	Detroit	Goodrich	Montgomery-Ward	Philco	Spartan	Willys
Chevrolet	Dodge	Goodyear		Plymouth	Spiegel	Zenith

Mallory Page 2 (See Mallory Page 1 for List Prices)

# MALLORY VIBRATORS



Type No.	Volt	Type	Base Dia.	Can Type	Size
222	6	Syn.	20	2	4 1/2 x 1 1/2 x 1 1/16
▲245	6	Syn.	21	1	1 1/2 x 3 1/2
▲245A	6	Syn.	21	1	1 1/16 x 3 1/2
245C	6	Syn.	28	1	1 1/2 x 3 1/2
▲246	6	Syn.	38	1	1 1/2 x 3 1/2
247	6	Syn.	46	1	1 1/2 x 3 1/2
▲248	6	Syn.	44	1	1 1/2 x 3 1/2
G248	12	Syn.	44	1	1 1/2 x 3 1/2
▲249	6	Syn.	32	1	1 1/2 x 3 1/2
270B	6	Syn.	23	1	2 x 4 1/2
271HD	6	Syn.	24	1	2 x 4 1/2
273C	6	Syn.	29	1	2 x 4 1/2
273D	6	Syn.	31	1	2 x 4 1/2
292	6	Int.	3	2	1 1/2 x 1 1/2 x 2 7/8
294	6	Int.	8	1	1 1/2 x 3 1/2
▲F294	32	Int.	8	1	1 1/2 x 3 1/2
298	6	Int.	51	1	1 1/2 x 2 1/2
505P	6	Int.	8	1	1 1/16 x 3 1/2
506P	6	Int.	36	1	1 1/16 x 3 1/2
509P	6	Int.	8	1	1 1/2 x 2 1/2
514	6	Syn.	30	6	1 1/16 x 3 1/2
716	6	Syn.	30	7	1 1/16 x 3 1/2
▲725C*	6	Syn.	32	1	1 1/2 x 3 1/2
▲G725C*	12	Syn.	32	1	1 1/2 x 3 1/2
742	6	Syn.	32	1	1 1/2 x 2 1/2
743	6	Syn.	38	1	1 1/2 x 3 1/2
748	6	Syn.	44	1	1 1/2 x 2 1/2
▲G749C*	12	Syn.	21	1	1 1/2 x 3 1/2
▲825C*	6	Int.	8	1	1 1/2 x 3 1/2
▲826C*	6	Int.	8	1	1 1/2 x 3 1/2
▲F826C*	32	Int.	8	1	1 1/2 x 3 1/2
▲G826C*	12	Int.	8	1	1 1/2 x 3 1/2
839	6	Int.	8	1	1 1/2 x 3 1/2
852	6	Int.	14	3	1 1/2 x 3 1/2
853	6	Int.	10	3	1 1/2 x 3 1/2
854	6	Int.	11	1	1 1/2 x 3 1/2
▲859	6	Int.	8	1	1 1/2 x 2 1/2
860	6	Int.	14	7	1 1/2 x 3 1/2
870	6	Int.	14	1	1 1/2 x 3
903M	6	Int.	8	1	1 1/2 x 2 1/2
953W	6	Syn.	16	1	1 1/2 x 3 1/2
954	6	Syn.	39	1	1 1/2 x 3
▲1100	6	Int.	8	1	1 1/16 x 2 1/2
▲1501	6	Int.	53	1	1 1/2 x 2 1/2
1502	6	Int.	54	1	1 1/2 x 2 1/2
T4002	2	Syn.	52	8	1 1/2 x 1 1/2 x 2 1/2
T4003	2	Syn.	50	1	1 1/16 x 2 1/2
GC7↑		Ground Cup			
AR-1		Adapter			
SK-1		Socket Kit			

## Recommended Substitutions for Discontinued Vibrators

Discontinued Type	Recommended Replacement	Discontinued Type	Recommended Replacement
221	292	299	298
223	222 (See Note 1)	500P	853
224	222 (See Note 1)	501P	853
226	222 (See Note 1)	503	292
2458W	245	504	246 (See Note 1)
G245	G749C	507P	853
G249	G725C	508P	859
F251	F294	509P	859
G253	G826C	510P	859
253Y	294	722A	246 (See Note 1)
271	270B	728A	246 (See Note 1)
277S	248 (See Note 1)	850	859
P285Y	246 (See Note 1)	G850	G826C
286S	248	866	859
289Y	249	868	870
294C	852	869	859
294SW	854	901M	294
296	298	902M	859
297	298	951P	246
F297	F294 (See Note 2)	952W	953W
		T4000	T4003

**NOTE 1.** To make this substitution certain wiring changes are necessary. See instruction sheet packed with vibrator or installation note in the Mallory Vibrator Guide and the 6th Edition Mallory Radio Service Encyclopedia.

**NOTE 2.** To make this substitution the six-prong socket must be changed to a 4-prong UX base socket and wired to match base diagram 8.

Int.—Interrupter      Syn.—Synchronous  
 ▲Use only these types in design of new equipment. Other types are for replacement purposes only.  
 \*Hermetically Sealed Construction.  
 †A grounding cup for 1 1/2" dia. vibrators which makes a low r.f. ground connection between vibrator can and power supply chassis.  
 ■Five special sockets for vibrator, section four of the Mallory Replacement Vibrator Guide. Supplied as complete kit only.

## MALLORY TECHNICAL MANUAL

● This simply written, practical book bridges the gap between radio theory and practice. Designed for the radio serviceman, engineer, amateur or experimenter who wants the latest technical information . . . presented so that he can easily apply it to everyday problems. Contains page after page of information profusely illustrated. It's worth far more than its price.

# MALLY VIBRATORS

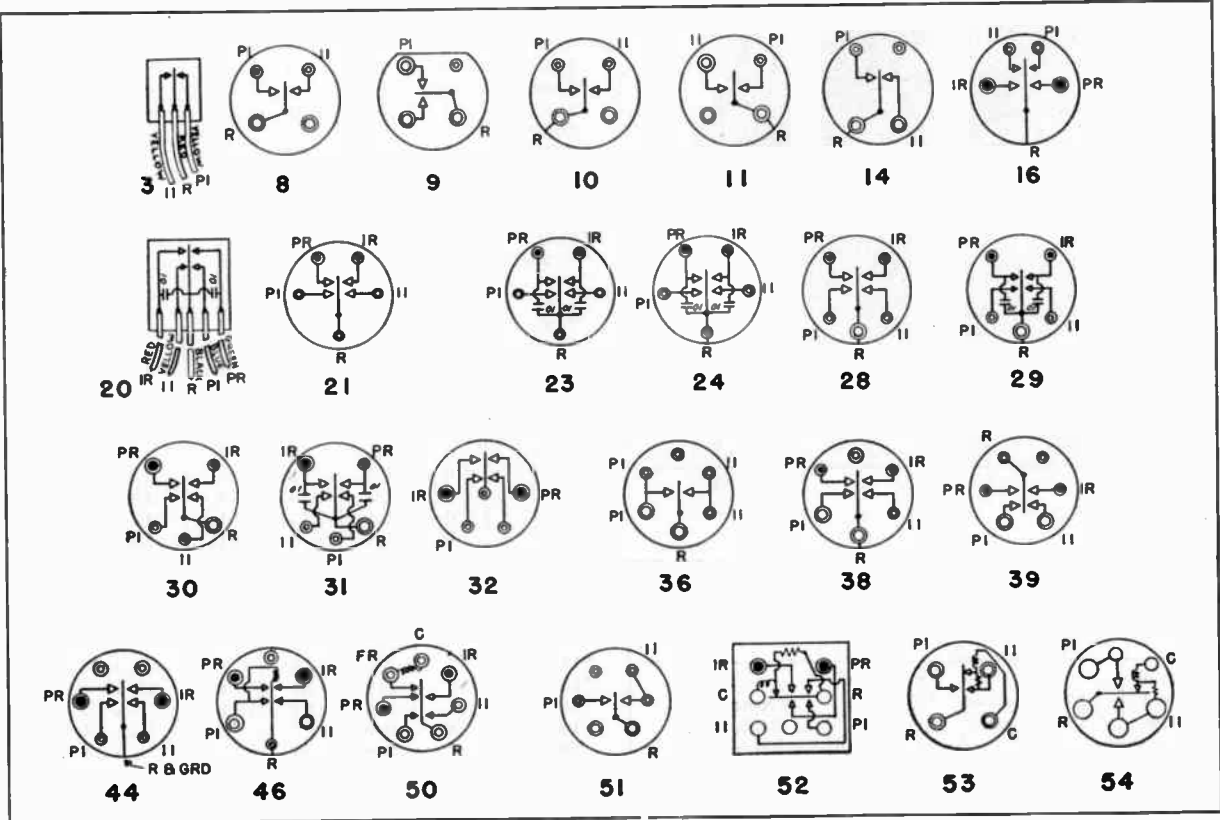
These Mallory Vibrators Meet 90% of Your Replacement Needs

● The 12 basic vibrator types listed at right cover 90% of your replacement needs. The entire line of Mallory Vibrators has been simplified so that replacements can be made easily and quickly. By effecting substitutions, Mallory is materially reducing the number of vibrators needed to meet your requirements.

This Mallory standardization program means that your distributor stocks fewer vibrator types and more units of each—thus delivery is tremendously speeded up.

The vibrator replacement problem is being simplified but Mallory quality remains the same. Mallory precision vibrators, backed by years of outstanding performance, still offer the dependability, the long life and the trouble-free service that you and your customers expect. It pays to insist on Mallory Approved Precision Products.

Type No.	Volt	Type	Base Dia.	Size
245	6	Syn.	21	1½ x 3¼
246	6	Syn.	38	1½ x 3¼
248	6	Syn.	44	1½ x 3¼
249	6	Syn.	32	1½ x 3¼
273C	6	Syn.	29	2 x 4½
294	6	Int.	8	1½ x 3¼
716	6	Syn.	30	1½ x 3¼
852	6	Int.	14	1½ x 3¼
854	6	Int.	11	1½ x 3¼
859	6	Int.	8	1½ x 2¾
870	6	Int.	14	1½ x 3
1100	6	Int.	8	1½ x 2¾

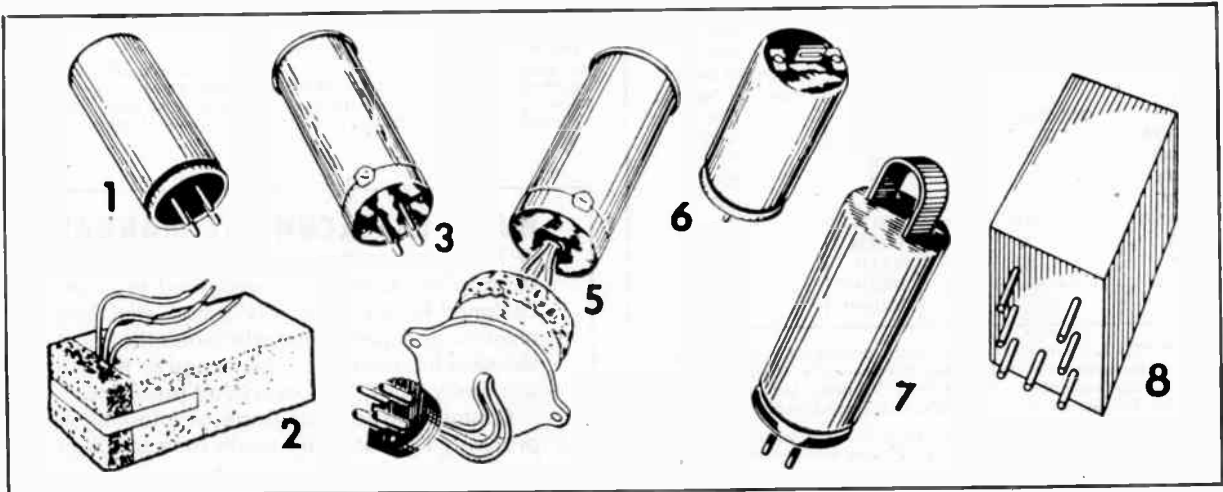


R=Reed  
PI=Pull Interrupter

PR=Pull Rectifier  
II=Inertia Interrupter

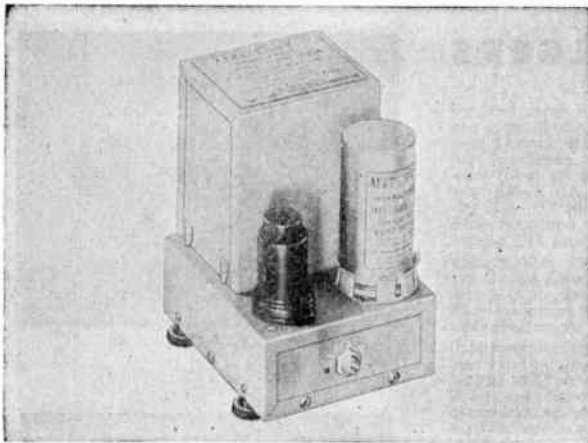
IR=Inertia Rectifier  
C=Coil

FR=Frame

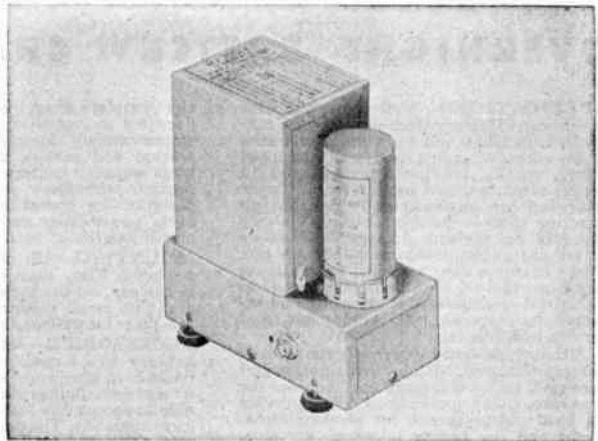


Mallory Page 4 (See Mallory Page 1 for List Prices)

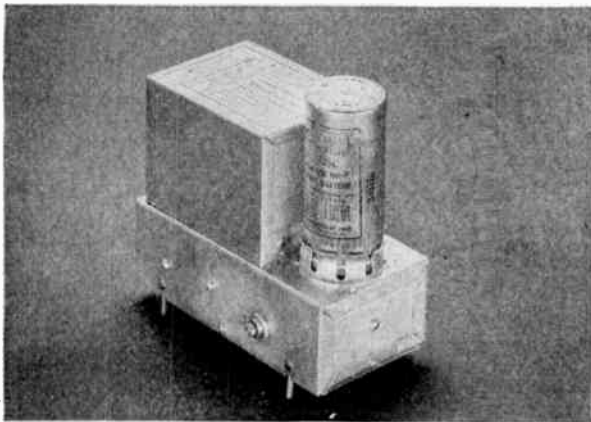
# MALLORY VIBRAPACK\* POWER SUPPLIES



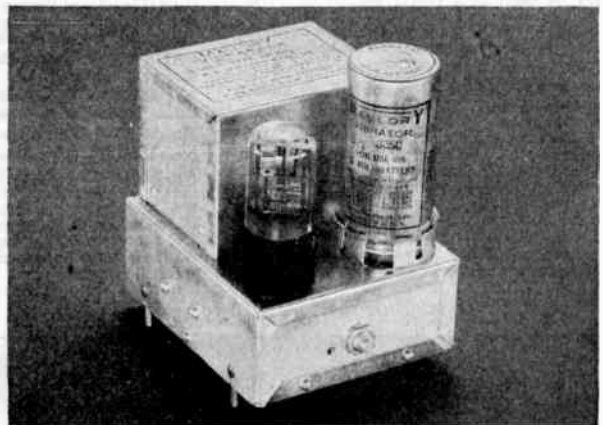
Type VP-554H • VP-F558



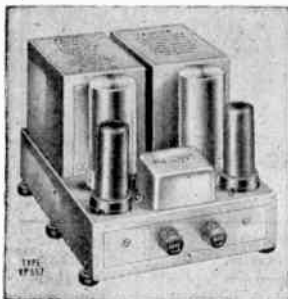
Type VP-552 • VP-G556



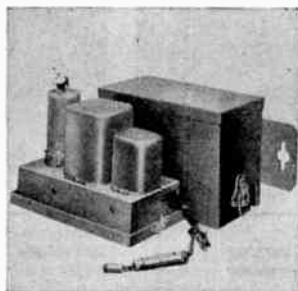
Type VP-551



Type VP-553



Type VP-555H • VP-557

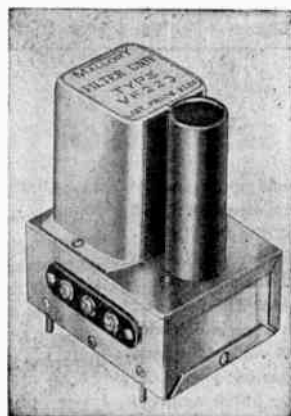


Type VP-540

## Type VF-223 Audio Filter

● A complete audio filter system for use with all single-unit Vibrapacks. Designed to give maximum suppression of hum with minimum voltage drop. Especially recommended for applications which are sensitive to hum, or where voltage regulation is important as in Class "B" audio amplifiers.

\* REG. U. S. PAT. OFF.



## NOISE SUPPRESSION

● Vibrapacks are equipped with built-in noise suppression equipment. Type VP-555 also includes an efficient low-frequency hum filter. Type VP-557 incorporates the first input filter condenser only. Other Vibrapacks do not include the high-voltage hum filter. High-voltage filter requirements are similar to equivalent AC power packs.

Catalog Number	Nominal Operating Voltage	Nominal Output Voltage	Maximum Output Current	Type
VP-540*	6.3	250	60 ma.	Self-Rectifying
VP-551	6.3	125-150 175-200	100 ma.	Self-Rectifying
VP-552†	6.3	225-250 275-300	100 ma.	Self-Rectifying
VP-553	6.3	125-150 175-200	100 ma.	Tube Rectifier
VP-554H†	6.3	225-250 275-300	100 ma.	Tube Rectifier
VP-555H†	6.3	300	200 ma.	Tube Rectifier
VP-557†	6.3	400	150 ma.	Tube Rectifier
VP-G556	12.8	225-250 275-300	100 ma.	Self-Rectifying
VP-F558	32.	225-250 275-300	100 ma.	Tube-Rectifier

\*Includes complete audio filter.

†Maximum ratings are for mobile transmitter service. For continuous duty with radio receivers where longer vibrator life is essential, reduce maximum output watts ratings to 75% of listed values.

Mallory Page 5 (See Mallory Page 1 for List Prices)



# MALLORY BATTERY CHARGERS

## OVERNIGHT BATTERY CHARGERS

**APPLICATIONS**—Mallory Automotive and Marine Battery Chargers provide convenient, efficient and economical charging of any storage battery used in automobiles, buses, trucks, tractors, taxicabs, small boats, airplanes, and on the farm. Taper charging (an automatically decreasing charging rate) is designed into all Mallory chargers to prevent damage to battery plates and to insure maximum battery life. These chargers also are ideal for charging any 6 or 12-volt storage battery used in industrial applications, engineering and research laboratories, test equipment, and service benches, etc.

Although designed principally for storage battery charging, Mallory Automotive and Marine Battery Chargers may be used for numerous other applications. They provide an ideal power source for electroplating, model and toy trains, telegraph systems, relays and solenoids, vending machines, electric organs, generator fields, etc. In conjunction with an adequate filter they may be used as a power source for farm and portable radio filaments, auto radio receivers, telephone systems, loud speaker fields, exciter lamps, scientific apparatus, etc.

**DESCRIPTION**—The heart of these chargers is the Mallory Magnesium-Copper Sulfide all-metal rectifier. Unaffected by temperature and able to withstand phenomenal abuse, they provide stable output without adjustment over long life. With an exclusive self-healing feature, Mallory rectifiers have been time-tested and proved to be the most rugged dependable rectifier for battery-charging applications.

Mallory Automotive and Marine Battery Chargers are made in five models to cover

the complete charging field from battery boosters to fast chargers. All chargers are conservatively designed with circuit protection and meters where required, and large capacity battery clips for ready connection to battery posts. All models are designed for operation from 115-volt 60-cycle power lines and are equipped with ample lengths of both AC and DC cables.

**MOUNTING**—All chargers are readily portable. They may be placed anywhere: in the car, on the garage floor, on a bench, etc. The small models are equipped with two holes for wall mounting where desirable.

**ACCESSORIES**—Although equipped with battery clips, a readily attachable polarized dashboard plug and receptacle (No. R-652) or cigarette lighter plug (R-655) are available as accessories for simple installation in an automobile. The addition of one of these receptacles makes possible simple plug-in connection of the charger to the car battery. Extra battery clips (No. R-653) are available. Automatic timer control (No. R-654) is offered for use with battery chargers to control the charge. It may also be used with many household appliances.

**PACKAGING**—One charger per cardboard shipping carton.

No. R-652—Polarized Dashboard Receptacle, for use with these chargers.

No. R-653—Extra Battery clips.

No. R-655—Cigarette lighter plug.

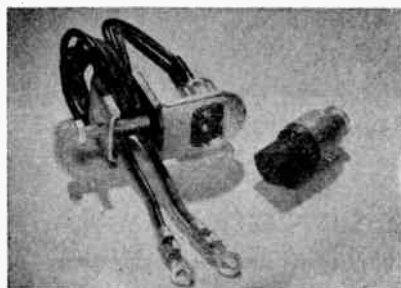
No. MMF-12—Specially designed filter for use in conjunction with 6-AC-4, 6-AC-6, 6-AC-10 chargers. Efficiently reduces AC ripple when these chargers are used as a DC power supply. May also be used with 6-AC-60 where max. current does not exceed 20 amps.



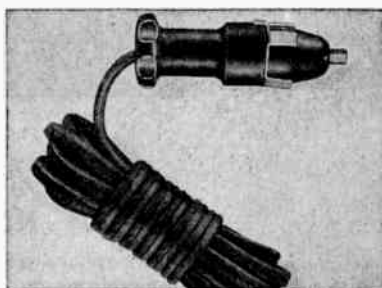
6-AC-4



6-AC-6



R-652



R-655



6-AC-10 • 12-AC-5

Mallory Charger Catalog Number	Nominal Battery DC Volts	Maximum Charging Rate DC Amps.	Tapered Rate DC Amps.	Approx. 10 Hr. Charge in Amp. Hrs.	Charging Indicator	Approx. Overall Dimensions in Inches			Approx. Shipping Weight in Pounds
						Height	Width	Depth	
6AC4	6	4	2	30	No	4 <sup>7</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>
6AC6	6	6	4	50	Light Bulb	4 <sup>7</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	7
6AC10	6	10	7	85	Meter	6	8	4 <sup>1</sup> / <sub>2</sub>	12 <sup>1</sup> / <sub>2</sub>
12AC5	12	5	3	40	Meter	6	8	4 <sup>1</sup> / <sub>2</sub>	10 <sup>3</sup> / <sub>4</sub>

These chargers come with 6 feet of AC and DC cord.



## MALLORY 6RS10 BENCH POWER SUPPLY

● The Mallory 6RS10 6 volt power supply has been designed as a convenient source of DC current wherever 110-115 volt AC current is available. It is particularly suited for testing of automobile radio sets and has ample power to operate those with electrical tuning mechanisms. DC voltage is continuously variable from 0 to 8 volts. The unit may be safely operated continuously at 10 amperes and intermittently at 20 amperes

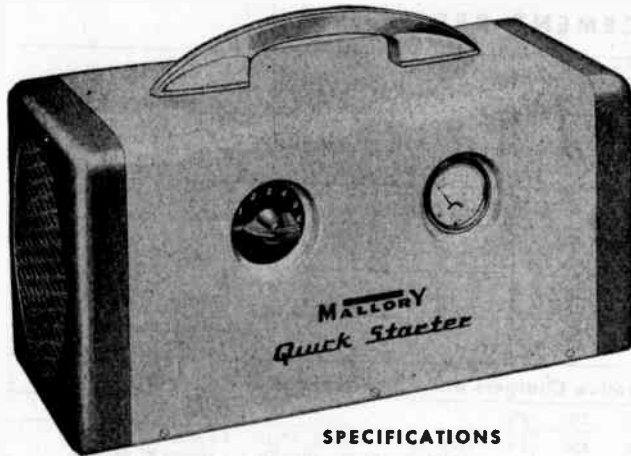
with 10,000 Mfds. of filter capacitance.

The power supply is fully equipped with a 0-20 ampere DC ammeter, a 0-30 volt DC voltmeter, a self resetting circuit breaker in the DC line, a switch and fuse in the AC line, and a six foot AC cord. Overall dimensions: 6<sup>3</sup>/<sub>4</sub>" high, 10<sup>3</sup>/<sub>4</sub>" wide, and 5<sup>1</sup>/<sub>2</sub>" deep. Shipping weight approx. 13 lbs.

Catalog No. 6RS10

Mallory Page 6 (See Mallory Page 1 for List Prices)

# MALLORY FAST CHARGERS AND RECTIFIERS



## SPECIFICATIONS

**Cabinet**—18" long, 10 $\frac{1}{4}$ " high, 9 $\frac{1}{4}$ " wide, including handle and cable rack. **Weight**—45 lbs. net. **Shipping Weight**—47 lbs. **AC Input**—115 volts, 50-60 cycles, 10 am. **DC Output**—To charge 6 volt battery at 60 amp. max. **Cables**—Heavy insulation—long wearing. **DC Cables**—No. 6—8' long. Color identification for polarity. Heavy duty terminal clamps. **AC Cables**—No. 16—15' long. With rugged AC plug.

## PORTABLE FAST CHARGER

● The Mollory 6-AC-60 Quick Starter is a portable unit providing 2 minute starting service or fast charging of batteries in a few hours.

A Mollory 80 amp Magnesium-Copper Sulfide rectifier stack insures dependable and rugged service. A 6 step charge control switch and ammeter allow charging rate adjustment. To provide automatic charging use the Mollory Automatic Timer Control (R-654).

Rectifier stack and transformer are efficiently cooled by a quiet running fan with an oil-less bearing motor. A convenient rack holds both AC and DC cables. The entire unit weighs only 45 lbs.

The Mollory Quick Starter will provide approximately 100 amp. hrs. charge in 2 hours. It also provides a convenient power supply for test and service equipment for horns, heaters, radio receivers, and electroplating.

Catalog No. 6-AC-60

Automatic Timer Control for 6-AC-60 Charger. Variable time setting up to 60 minutes. Contacts rated 20 amperes, 115 volts AC or 10 amperes, 230 volts, (suitable for DC loads). Also ideally suited to control lights, sunlamps, radios, fans, heating devices and numerous other electrical household appliances.

Catalog No. R-654



## MALLORY MAGNESIUM-COPPER SULFIDE RECTIFIERS

● **APPLICATION**—Mollory Magnesium-Copper Sulfide Rectifiers are time-tried and proved to be the most rugged, dependable rectifiers for those applications requiring low DC voltages at medium and high currents such as battery chargers and eliminators, electroplating, motion picture projector arcs, welding, engine starting, circuit breaker reclosing, solenoid and relays operation, etc.

**DESCRIPTION**—Mollory Magnesium-Copper Sulfide Rectifiers are all metal in construction, ruggedly assembled under high pressure to withstand severe vibrations and shock. There are no bulbs, liquids, moving parts or sparking contacts. Unlike all other types of rectifiers, they contain no temperature-sensitive films or layers, and have phenomenal ability to withstand abuse and extremes of temperature (−90° to +265°F.). Constant output without circuit adjustments is assured over many years of useful life. Should an accidental voltage surge occur, the rectifying film will "self-heal."

**SCOPE AND SIZES**—Many sizes are available to supply low DC voltages from watts to kilowatts. A new rectifier engineering data folder is available upon request, covering other sizes for single phase and three phase applications, both convection and fan cooled. In addition to rectifier stacks, P. R. Mollory & Co., Inc. also manufacture a complete line of Rectoplators (distributed exclusively by the Udylyte Corporation, 1651 East Grand

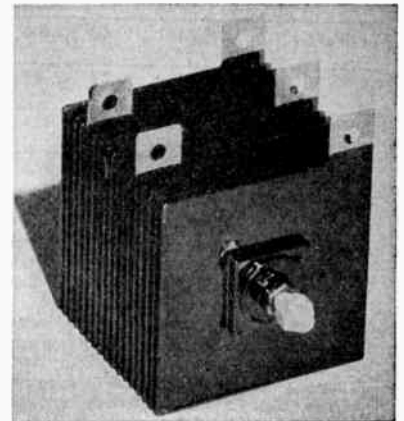
Boulevard, Detroit 11, Michigan), Rectotruck Chargers (industrial electric truck chargers available through truck agents).

**REPLACEMENT RECTIFIERS**—The Mollory Magnesium-Copper Sulfide Rectifiers listed on page 53 are only those popular sizes regularly carried in stock, principally for replacement purposes. These same rectifiers, however, may be used for numerous other applications. For example, the IB8R and IB12R rectifiers are ideal for reversing the direction of HO and O gauge model train locomotives respectively, using wound field motors (as illustrated in the wiring diagram, following page). IB12C1J, IS16CB7, and IS16B9 rectifiers may be readily used to assemble tapering battery chargers as illustrated in the wiring diagram. The IS24B9 rectifier may be used to make up a battery eliminator to operate and test modern automobile radio receivers as shown. Other applications immediately suggest themselves, such as electroplating, model and toy train DC power sources, radio filament supplies, chatter-free relay and solenoid operation, electric organ, automotive electrodynamic speaker field supplies, generator fields, telephone and telegraph system power supplies, etc.

**MOUNTING**—Rectifiers are available in either foot, bolt, or stud mounting, the latter two insulated from mounting means. Refer to note below table for type of mounting on replacement rectifiers.

**HARDWARE**—Wherever possible or practical, universal mounting hardware is included to assist in the ready replacement of old rectifier types.

**PACKAGING**—Rectifiers are packed one per display carton.



IS16B9



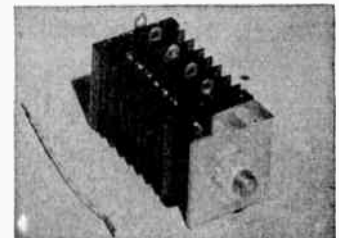
IB4R



IB8R



F24H1P



IB12C1J

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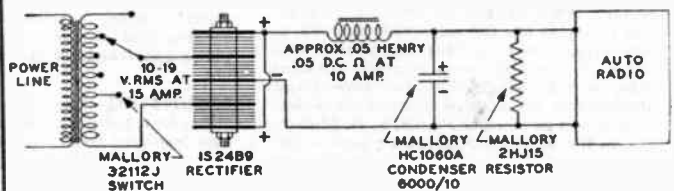
# MALLORY RECTIFIERS

## CHART OF REPLACEMENT RECTIFIERS

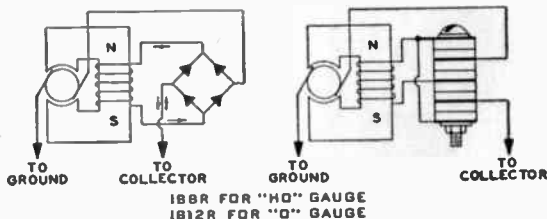
New Catalog Number	Maximum AC Volts (Normal Line)		Approx. DC Volts			Max. DC† Amperes		Approximate Overall Dimensions in Inches			Replacement for Old Catalog Number	Replacement in Equipment
	No Load	Full Load	Inductive Load	Resistive Load	Capacitive-Battery Load	Continuous Duty‡	Intermittent Duty	Length	Width	Height		
<b>Ultra-Compact Replacement Rectifiers for Battery Eliminators, etc.</b>												
IB4R	3.6	3.2	1.5	1.7	2.5	1.5	5.0	1	1/16	3/8		G.T.C. Porta-Power Electro Battery Eliminator
IB8R	7.2	6.4	3.1	3.4	5.1	1.5	5.0	1 1/2	1/16	3/8		G.T.C. Porta-Power Electro Battery Eliminator
IB12R	10.8	9.7	4.8	5.2	7.8	1.3	5.0	1 1/2	1/16	3/8		All Power Supplies for Electric Fence
<b>Replacement Rectifiers for Automotive Chargers and Eliminators, etc.</b>												
IB12L5	10.8	9.7	4.5	5.0	7.6	4.5	15.0	2 1/2	2 1/2	2 1/2		6AC4-2
IB12C1J	10.8	9.8	4.6	5.1	7.7	3.2	24	2 1/2	1 1/4	1 1/2	12C1, F12C1, IF12C1B, 12C1F, F12C1K, IB12C1, IB12C1M, X12, X112, U12	4-2 Amp. Boosters Mallory 3C, 6AC4, E
IB12C3	10.8	9.7	4.5	5.0	7.6	4.5	24	2 1/2	1 1/4	2 1/2		Mallory 6-AC-6-2
IB12C5	10.8	9.7	4.5	5.0	7.6	5.3	24.0	3	2 1/2	2 1/2		6AC6-3
F16C3	14.4	13.0	6.1	6.8	10.2	3.9	24	3	1 1/2	2 1/2	16C3, F16CB3, 16CB3, 16C3B*, XB16*, M16*, X16, X116, ME16	5-3 Amp. Old Chargers Mallory 5535, 250, 320, 310
IF16CB7M	14.4	12.8	5.9	6.6	9.9	6.0	24	3	2 1/2	3 1/2		6-3 Amp. Charger, Mallory 5535A
IS16CB7	14.4	12.8	5.9	6.6	9.9	6.0	24	3 1/2	2 1/2	3	IS16CB7M	6-3 Amp. Charger Mallory 5535B, 6AC6
IS16B7	14.4	12.8	5.8	6.5	9.8	8.3	24	5 1/2	2 1/2	3	IS16B7M, IB16B7	10-7 Amp. Charger, Mallory 107, 6-AC-10-2
IS16B9	14.4	12.7	5.7	6.4	9.7	11.6	24	5 1/2	3 1/2	4 1/4		10-7 Amp. Charger, Mallory 6AC10
F20C7	18.0	16.2	7.6	8.4	12.6	4.8	24	4 1/2	2 1/2	3 1/2	F20C7P	A.T.R. Battery Eliminators, etc.
IS24C7J	21.6	19.4	9.0	10.1	15.1	4.0	24	4 1/2	2 1/2	3 1/2	IB24C7, F24C3, F24C3P, F24C7P, F24C7, FCX24D7, 201C1, R24LR, R24LS	Mallory 12-AC-5-2, Stancor Eliminators, Univerfers, Pin Game Supplies, etc.
IS24B9	21.6	19.1	8.5	9.6	14.4	11.0	24	7 1/2	3 1/2	4 1/4		Stancor Battery Eliminators, etc.
IS28C7J	25.2	22.7	10.7	11.7	17.8	4.3	24	6	2 1/2	3	F28C7, F28C7P, 228C1, 267C1, R28LS	5-3 Amp. 12-volt Chargers, Mallory 125, 12AC5
<b>Replacement Rectifiers for Pin Ball Machines, Power Supplies, etc.</b>												
F16HIP	14.4	13.1	6.3	7.0	10.4	2.2	24	2 1/2	1 1/4	2	16A1, F16G1, F16G1P, F16H1, W16A1, 211C1, R16S	Electropak, Rectopak, Univerfer, etc.
F20HIP	18.0	16.4	7.9	8.7	13.0	2.0	24	2 1/2	1 1/4	2	20A1, F20G1, F20G1P, F20H1, W20A1, 212C1, R20S, X20	Electropak, Rectopak, Univerfer, etc.
F24HIP	21.6	19.7	9.6	10.4	15.7	1.9	24	3	1 1/2	2	F24G1, F24G1P, F24H1, W24A1, 203C1, R24S	Electropak, Rectopak, Univerfer, etc.
F28HIPM	25.2	23.0	11.2	12.2	18.4	1.7	24	3 1/2	1 1/4	2	F28G1, F28G1P, F28H1, F28HIP, W28A1, F28H1MP, 210C1, R28S	Electropak, Rectopak, Univerfer, etc.
F32HIPM	28.8	26.2	12.8	14.0	21.0	1.6	24	3 1/2	1 1/4	2	F32G1, F32G1P, F32H1, F32HIP	Electropak, Rectopak, Univerfer, etc.

NOTE: All rectifiers are single phase, full wave, bridge type.  
**Mounting Prefix:** IB=Insulated Bolt; B=Grounded Bolt; F=Grounded Foot; IF=Insulated Foot; IS=Insulated Stud.  
**P** suffix designates reverse polarity stacking. Center terminal is DC positive.  
**J** suffix designates universal construction with loose mounting feet for foot, bolt or stud mounting replacement.  
 †To determine AC Amps: Multiply the DC amps by the following factors: Inductive load by 1.1; resistive load by 1.2; capacitive load by 1.4.  
 \*Use base from old rectifier.  
 ‡Ratings given are for resistive and inductive loads. To determine the Max. continuous DC amp. rating for capacitive and battery loads multiply these ratings by 0.82.

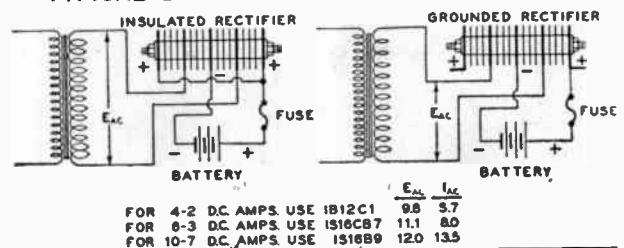
### AUTOMOBILE RADIO POWER SUPPLY CIRCUIT



### MODEL TRAIN LOCOMOTIVE REVERSING CIRCUITS

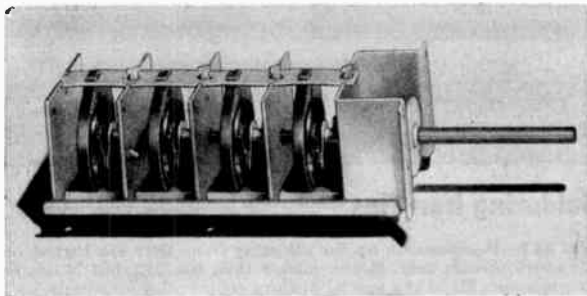


### TYPICAL BATTERY CHARGING CIRCUITS



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# MALLORY SPECIAL COMPONENTS AND MISCELLANEOUS ITEMS



Types 8303, 8304

## Mallory 3 and 4 Gang Spiral Inductuners\*

**DESCRIPTION**—The Mallory 3 and 4 gang Spiral Inductuners\* are variable inductance tuning devices designed especially for television, VHF and FM tuning. When used in conjunction with suitable vacuum tubes and a minimum of circuit wiring these Inductuners assure accurate, noise free and continuous tuning of the entire frequency spectrum from 52 through 216 megacycles. The Inductuner eliminates the need for bandswitches, plug-in coils, turret coil assemblies or complicated circuit wiring when used for this purpose.

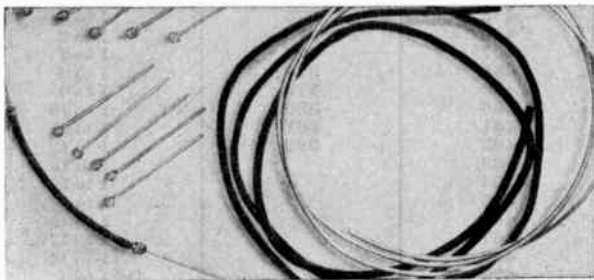
Models with either 3 or 4 separate variable inductors are available. Tuning is accomplished in both models by means of a single 1/4" shaft to vary the inductance of each of the inductors simultaneously and from the front panel of the radio set using the Inductuner. Automatic stops at the maximum and minimum inductance positions are provided to prevent damage to the inductors, and each Inductuner is equipped with a rigid metal bracket to which a suitable tuning dial may be attached. Four 8-32 threaded holes are provided on the base of the Inductuner for chassis mounting.

**SPECIFICATIONS**—(Note—Three or 4 identical spiral wound coils are used dependent upon the model of Inductuner.) The following electrical characteristics apply to individual coils. Inductance (Max.)—985 uh; (Min.)—.025 uh. "Q" Factor (Over tuning range)—Low Freq. End.—118; Middle Freq.—122; High Freq. End.—128. Distributed Cap. (Low Freq.)—4.5 mmfd. to case; (High Freq.)—2.2 mmfd. to case. Total shaft turns—5.925+.060-.000. Shaft dimensions—2 1/2" x 1/4". Case length: 3 gang—4 1/16"; 4 gang—5 7/8".

\*Registered trademark of P. R. Mallory & Co., Inc., for inductance tuning devices covered by Mallory-Ware patents.

3 Gang Spiral Inductuner. . . . . Cat. No. 8303  
4 Gang Spiral Inductuner. . . . . Cat. No. 8304

Inductuner\*—Registered trade mark for Mallory variable inductance tuning devices. Manufactured and sold under one or more of the following Paul Ware and Mallory patents: 2,163644, 2,163645, 2,163646, 2,163647, 2,260877, 2,377789, 2,377790, 2,399060, 2,405890. Other patents applied for.



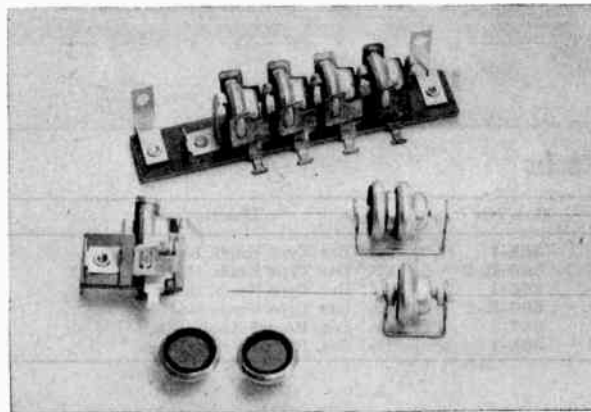
## Yard-Ohm Resistance Kits

Each Yard-Ohm Resistance Kit consists of all necessary materials to construct flexible resistors of a wide range of values. The Yard-Ohm Kit provides a real solution to the odd-value resistor problem. In addition to replacement applications, resistors made from the Yard-Ohm Kit are ideal for meter shunts, and for use wherever a high quality flexible resistor is desired.

Each Mallory Yard-Ohm Kit consists of the following: 1 yard spiral wound resistance wire; 1 yard insulated braid; 24 spiral wire leads. The kit is available in eight resistance values.

Dissipation—all types: 1/2 watt per inch.

Catalog Number	Resistance Value (Ohms per Inch)	Carrying Capacity in Amperes	Catalog Number	Resistance Value (Ohms per Inch)	Carrying Capacity in Amperes
YO-1	1	.707	YO-50	50	.100
YO-5	5	.315	YO-100	100	.071
YO-10	10	.223	YO-250	250	.044
YO-25	25	.141	YO-500	500	.031



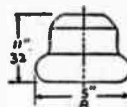
## Grid Bias Cells

● The Mallory Grid Bias Cell is a small acorn-shaped, self-contained device. The metal container or cup is the negative electrode. The black disc is the positive electrode.

### Application

The principal use of Mallory Grid Bias Cells is in the biasing of the first audio amplifier tube in modern high-gain receivers. Diagram of a typical circuit is shown at right. The bias cell does not need to be by passed to ground.

Correspondence is invited regarding the application of Mallory Grid Bias Cells. Special Technical Bulletin No. GBC746 may be obtained on request.



### Characteristics

The no-current potential of Mallory Grid Bias Cells is within plus or minus 10% of their rated voltage.

**Current**—The cell is strictly a potential or voltage cell for biasing class "A" amplifier tubes and should not be used for biasing power tubes or oscillators; or for any circuit where direct current may flow through, or be drawn from, the cell.

**Temperature**—The cells may be used at temperatures from 0°F to 140°F. The voltage of the cell remains reasonably constant throughout this wide temperature range. It is recommended, however, that wherever possible the bias cell be placed in the coolest location.

**Humidity**—The cell exhibits no change in characteristics when exposed to a relative humidity of 90% at 120°F.

**Impedance**—Mallory Grid Bias Cells are non-reactive at audio frequencies. The DC resistance of the cell ranges between 10,000 and 40,000 ohms.

**Noise**—The cells do not cause noise.

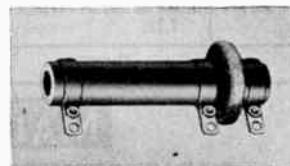
Cat. No.	Description
BC-2	1 1/2-volt Grid Bias Cell (packed 10 to box)
GB11A	Cell Holder, 1-cell capacity
GB11B	Cell Holder, 1-cell capacity
GB12	Cell Holder, 2-cell capacity
GB13	Cell Holder, 3-cell capacity
GB14	Cell Holder, 4-cell capacity
GB15	Cell Clip, 1-cell capacity
GB16	Cell Clip, 2-cell capacity

## TYPE VC-101

### Videocoupler

● The Mallory VC-101 Videocoupler is a compact inter-stage coupling unit for use in the wide-band amplifiers commonly found in television, radar and oscilloscope equipment. It consists of peaking inductances and a load resistance which provide an essentially flat frequency response to 4 mc. per second. It is designed to work into a terminating capacity of 22.5 mmfd. When used with a 6AC7 tube in a proper circuit, a stage gain of approximately 25 may be realized.

Mounting space required: 1 1/4" long x 3/8" in diameter; max. dissipation 2 watts; finish; high-temperature enamel. Use a No. 6 bolt through the core for mounting.



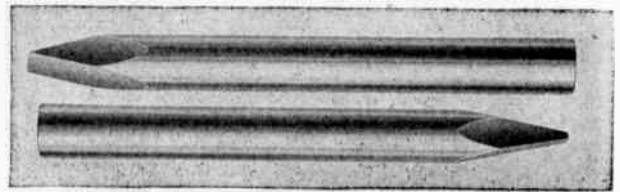
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# MALLORY SPECIAL COMPONENTS AND MISCELLANEOUS ITEMS



## Knobs

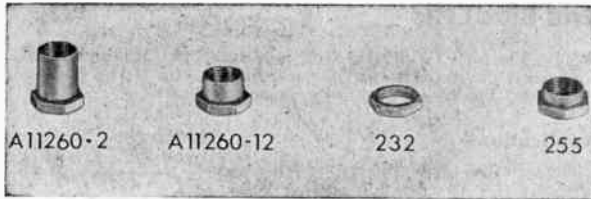
Cat. No.	Description
365-1	2 1/4" Bar Type Knob, Black
365-R-1	2 1/4" Bar Type Knob, Red
366-1	1 1/2" Bar Type Knob, Black
366-R-1	1 1/2" Bar Type Knob, Red
367-1	1 1/2" Dia. Round Knob, Black
368-1	1 1/2" Dia. Round Knob, Black



## Soldering Iron Tips

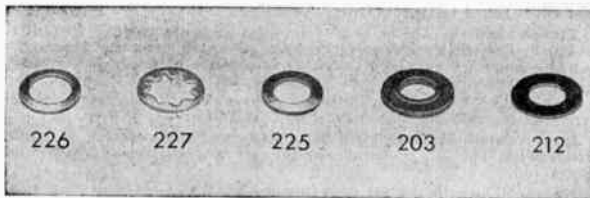
No. 311—Replacement tip for soldering irons that are turned on for short periods only. Heats quicker than No. 312, but is not as long wearing. Made of a special Mallory copper alloy long in use as a welding tip material. Nickel plated to resist corrosion. Size—3/8" diameter, 4" length. Plunger style with "screw driver" point.

No. 312—Replacement tip for soldering irons that are used continuously for long periods of time. Made of a special Mallory copper alloy of great hardness and high electrical conductivity. Nickel plated to resist corrosion. Size—3/8" diameter, 4" length. Plunger style, with "screw driver" point.



## Mounting Nuts

Cat. No.	Description	Thread	Dimension
232	Flat Hex Mounting Nut..	3/8-32	1/2 x 3/32
255	Hex Mounting Nut.....	3/8-32	1/2 x 7/64 x 7/64 shoulder nut
A-11260-2	Hex Mounting Nut.....	3/8-32	1/2 x 7/64 x 1 1/2 shoulder nut
A-11260-12	Hex Mounting Nut.....	3/8-32	1/2 x 7/64 x 7/32 shoulder nut



## Washers

Catalog No.	Description and Dimensions
203	Extruded Washer—Fiber—3/8" O.D. x 3/8" I.D. x 1/16"; Extruded 1/2" x 1/2"
	For Set See No. 212 Flat Washer.
212	Flat Washer—3/8" O.D. x 3/8" I.D. x 1/32"; Bakelite
225	Metal Washer—Nickel Finish—3/8" O.D. x 3/8" I.D. .040 Brass
226	Metal Washer—Nickel Finish—3/8" O.D. x 7/16" I.D. .040 Brass
227	Lock Washer—Cadmium Plated Steel—1/16" O.D. x 2 3/4" I.D.

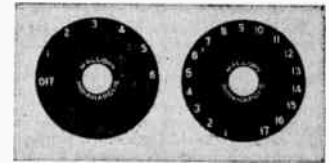
**MALLORY**

## RADIO SERVICE ENCYCLOPEDIA

Page after page of replacement information for all pre-war and post-war receivers.

## Dial Plates

For Mallory Circuit Selector, Top and All-Wave Switches. (Plates to match rotation of Mallory Adjustable Resistors on page 33.)



Neat-appearing Dial plates with easy-to-read aluminum figures clearly etched on solid black background. Dimensions are 1 1/16" in diameter with 7/16" hole, with figures 7/64" high. .020" aluminum stock.

Cat. No.	Cat. No.	Marking
For all types 3100J, 3200J Switches with 1 1/8" base. 20 degree spacing between numerals.	For all Switch types 1200L, 1300L and 1 1/4" base 3100J, 3200J. 30 degree spacing between numerals.	
453	372	1 to 2
454	373	1 to 3
455	374	1 to 4
456	375	1 to 5
457	376	1 to 6
458	377	1 to 7
459	378	1 to 8
460	379	1 to 9
461	380	1 to 10
462	381	1 to 11
463	382	1 to 12
464		1 to 13
465		1 to 14
466		1 to 15
467		1 to 16
468		1 to 17
472		1 to 18
473	383	Off 1 to 2
474	384	Off 1 to 3
475	385	Off 1 to 4
476	386	Off 1 to 5
477	387	Off 1 to 6
478	388	Off 1 to 7
479	388	Off 1 to 8
480	389	Off 1 to 9
481	390	Off 1 to 10
482		Off 1 to 11
483		Off 1 to 12
484		Off 1 to 13
485		Off 1 to 14
486		Off 1 to 15
		Off 1 to 16
	*394 Special	1 to 24
	†487 Special	1 to 5
	‡488 Special	1 to 4

\*15° Spacing Between Numerals

†60° Spacing Between Numerals

‡90° Spacing Between Numerals

Mallory Page 10 (See Mallory Page 1 for List Prices)

# ATR AUTO RADIO VIBRATORS



ATR Manufactures a Complete Line of Auto Radio Replacement Vibrators

Ask your ATR Distributor for your Free Copy of the Latest ATR Vibrator Guide

## ATR VIBRATORS

feature Ceramic Stack Spacers, and are proven units of the highest quality, engineered to perfection. They are backed by more than 17 years of vibrator design and research, development and manufacturing — ATR Pioneered in the Vibrator Field.

## ATR VIBRATOR EQUIVALENT CHART

ATR	TYPE	SIZE	ATR LIST PRICE	E-L	MALLORY	RADIART
324	Int.	1 1/2" x 3 1/8"	\$4.45	1703	294	5300
328	Int.	1 1/2" x 3 1/8"	4.45	2090	854	5331
335	Int.	1 1/2" x 3 1/8"	4.45	2088	852	5303
340	Int.	1 1/2" x 2 7/8"	4.45	2605	859	5301
508	Syn.	1 5/16" x 4 1/2"	8.30	2682	273C	5425
520	Syn.	1 1/2" x 3 1/8"	7.00	2688	245	5409
522	Syn.	1 1/2" x 3 1/8"	7.00	2089	246	5411
524	Syn.	1 1/2" x 3 1/8"	7.00	2107	248	5400
525	Syn.	1 1/2" x 3 1/8"	7.00	2687	249	5406
547	Syn.	1 5/16" x 3 1/2"	7.00	2092	716	5426

**THESE 10 POPULAR ATR VIBRATORS MEET 90% OF YOUR SERVICE NEEDS**

# ATR • ELIMINATORS • ATR

AMERICAN TELEVISION & RADIO CO.



Illustrates Heavy Duty "A" Battery Eliminator, Type 620C-ELIP. Equipped with Voltmeter, Ammeter and Voltage Control.

## ATR "A" BATTERY ELIMINATORS

Specially Designed for Testing and Operating Auto Radios and D. C. Electrical Apparatus on Regular A. C. Lines, 105-125 Volts 50-60 Cycles.

- Fully Automatic and Fool-Proof.
- Eliminates Storage Batteries and Battery Chargers.
- Operates the Equipment at Maximum Efficiency at all Times.
- Delivers Filtered Direct Current at the Correct Voltage for Proper Operation.

### SUGGESTED USES:

As a power supply for radio sets, aircraft instruments, relays, motors and other electrical and electronic equipments. In the laboratory, for supplying various low D. C. voltages.

Battery Eliminators may be treated as batteries in the sense that they can be connected in series for higher voltages at the same current output per unit or in parallel for the same output voltage per unit at higher currents.

Equipped with Full-Wave Dry Disc Type Rectifier, Assuring Noiseless, Interference-Free Operation and Extreme Long Life and Reliability.

**TYPE 610 ELIB**—Rated output 6 volts at 10 amperes. Size 6½" x 9½" x 8½"; shipping weight, 22 lbs. Code word, "SELIB".

Net Price..... \$32.40

**TYPE 620C ELIP**—Uses dual rectifiers. Size 6½" x 12¾" x 8½". Shipping weight, 33 lbs. Code word, "HELIN".

**Rated Output: 6 volts at 18 amperes or 12 volts at 9 amperes.** Either output obtainable by means of simple output terminal switching arrangement.

Net Price..... \$49.80

All ATR Eliminators have as standard equipment: On-Off Switch, Voltage Control, Meter(s), Fuse Protection, Rubber Mounting Feet, 6-Ft. All-Rubber Cord Set, and Cabinet of heavy gauge metal having attractive grey-wrinkled finish.



Illustrating Standard "A" Battery Eliminator, Type 610 ELIB, Equipped with Voltmeter and Voltage Control.

# ATR • INVERTERS • ATR

AMERICAN TELEVISION & RADIO CO.



## ATR STANDARD AND HEAVY DUTY RADIO INVERTERS

Specially Designed for Operating A. C. Radios, Public Address Systems, Television Sets, Amplifiers, Intercall Systems, and Radio Test Equipment from D. C. Voltages in Vehicles, Ships, Trains, Planes, and in D. C. Districts.

Illustrates all Standard ATR Radio Inverters except types 6 and 12 RSC.

This group of ATR Inverters is specially recommended for use with A. C. radios, amplifiers, and similar electronic equipment, being exceptionally well filtered to insure interference-free radio reception. With ATR Inverters, the need for special equipment is eliminated. They are designed for quiet, long-life radio operation. All models indicated are equipped with an ATR ten-contact plug-in Inverter Vibrator of new design and construction having dual arms and utilizing eight  $\frac{1}{4}$ " diameter tungsten power contacts and two silver alloy driver contacts, insuring increased long life and reliable service. These Inverters also come equipped with four point voltage regulators, which make possible the correct output voltage for minimum to maximum loads and also help compensate for input voltages which are lower or higher than normal; the operating efficiency is in excess of 85%.

Type	Input D.C. Volts	A.C. Output 60 Cycles	Output Wattage		Code Word	List Price
			Inter-mittent	Con-tinuous		
6 RSC	6	110 volts	85	75	ARSCD	\$49.95
12 RSC	12	110	125	100	BRSCD	49.95
24 RSC	24	110	125	100	NRSCQ	57.00
32 RSC	32	110	150	100	CRSCF	49.95
32B-RHC	32	110	200	180	DRHCG	79.50
50 RSC	50	110	150	100	ERSCJ	65.00
*110 RSC	110	110	250	150	GRSCJ	49.95
*110A-RHC	110	110	825	225	HRHCK	72.50
*110B-RHC	110	110	500	350	IRHCL	82.50
110C-RSC	110	110/220	250	150	JRSCM	65.00
220 RSC	220	110	250	150	LRSCO	57.00
220A-RSC	220	110/220	250	150	MRSCP	65.00

Radio frequency interference completely suppressed.

(\*) These Inverters available especially for Television set operation by specifying "T" after the type number such as Type "110BT-RHC" and adding \$5.00 additional to the list price.

Any of the above type Inverters are available with 220 volt A.C. output at prices 25% higher. In ordering, specify "S" after the type number and substitute for the last letter in the code word "T"; that is, if a 110 volt D. C. Inverter having a 220 volt A. C. output is desired, this would be ordered as Type 110S covered by code word, "GRSCT".

ATR Standard and Heavy Duty Radio Inverters are housed in attractively finished grey-wrinkled metal cabinets.

Dimensions of Standard Model Radio Inverters,  $8\frac{3}{8}$ " x 9" x  $5\frac{1}{4}$ "; Shipping weight, 19 lbs.

Dimensions of Heavy Duty Model Radio Inverters,  $6\frac{1}{8}$ " x  $11\frac{1}{8}$ " x  $8\frac{1}{2}$ "; Shipping weight, 30 lbs.

For correct replacement vibrator, consult Inverter Vibrator Guide.



Illustrates Types 6 and 12 RSC Standard Radio and Industrial Inverters only.



# ATR · INVERTERS · ATR

AMERICAN TELEVISION & RADIO CO.



Illustrating all Types LID Inverters except Types 6 and 12.

## ATR Low Power INVERTERS

For Operating Small A. C. Motors, Electric Razors, Radios, and Devices of Approximately 35 watts Consumption from 6, 12, 24, 32, 110, and 220 volt D. C. Lines.

This line of ATR Low Power Inverters was specially brought out to meet the insistent demand for a good, low power, inexpensive portable Inverter for operating phonograph and other A. C. motors and a host of small A. C. devices from D. C. voltage sources. These Inverters operate at an efficiency in excess of 90% and are designed for operation of loads having a power factor as low as 60%. They are ruggedly built and powered by a special ATR six-contact plug-in Inverter Vibrator utilizing four 1/4" diameter tungsten power contacts and two silver alloy driver contacts.

Type	Input D. C. volts	A.C. Output 60 cycles	Wattage		Code Word	List Price
			Intermittent	Continuous		
6 LID	6	110 volts	40	35	ALIDM	\$32.50
12 LID	12	110	50	35	BLIDN	32.50
24 LID	24	110	50	35	FLIDR	36.50
32 LID	32	110	50	35	CLIDP	36.50
110 LID	110	110	75	50	DLIDP	32.50
220 LID	220	110	75	50	ELIDQ	36.50

Radio frequency interference suppressed.  
 Any of the above type Low Power Inverters are available with 220 volt A. C. output at prices 25% higher. In ordering, specify "S" after the type number and substitute for the last letter in the code word "T"; that is, if a 110 volt D. C. Low Power Inverter having a 220 volt A. C. output is desired, this would be ordered as Type 110S covered by code word, "DLIDT".  
 Dimensions, 5 1/2" x 4" x 6 1/2"; shipping weight, 7 lbs.  
 Replacement Vibrators for any of the above Low Power Inverters are available. Be sure to mention the type number as well as model number when ordering. Consult Inverter Vibrator Guide.

## ATR STANDARD AND HEAVY DUTY INDUSTRIAL INVERTERS

For Operating A. C. Motors, Electronic Apparatus, Electrical Testing Equipment, and A. C. Electrical Appliances from D. C. Lines.

These units are specially designed for applications as indicated, permitting the use of standard A. C. equipment on D. C. lines. These Inverters operate at an efficiency in excess of 80% and are carefully built and equipped to give the longest possible life and operating satisfaction. All Inverters indicated utilize ATR ten contact plug-in vibrators, and are also equipped with four point voltage regulators as fully described above. These Industrial Inverters are recommended for use with loads having power factors as low as 60%, and as low as 50% for the "P" Inverters indicated. These Inverters should not be used with Neon signs.



Illustrating Heavy Duty Models Radio and Industrial Inverters except types 6 and 12. Types 6 and 12 Industrial Inverters are illustrated by small cut on page M-23.

Type	Input D.C. volts	A.C. Output 60 cycles	Output Wattage		Code Word	List Price
			Intermittent	Continuous		
6 ISP	6	110 volts	85	75	AISPD	\$49.95
12 ISP	12	110	125	100	BISPE	49.95
24 ISP	24	110	125	100	LISPN	57.00
32 ISP	32	110	150	100	CISPE	48.95
32P*-ISP	32	110	150	125	DISPF	65.00
32B-IHP	32	110	200	180	EIHPG	79.50
110 ISP	110	110	250	150	FISPH	49.95
110P*-ISP	110	110	250	150	GISPI	65.00
110A-IHP	110	110	325	225	HIHPJ	72.50
110B-IHP	110	110	500	350	IHHPK	82.50
220 ISP	220	110	250	150	JISPL	57.00
220P*-ISP	220	110	300	150	KISPM	65.00

Radio frequency interference not suppressed.  
 Any of the above type Inverters are available with 220 volt A. C. output at slightly higher prices. In ordering, follow similar directions given above.  
 ATR Standard and Heavy Duty Industrial Inverters are housed in attractively finished grey-wrinkled metal cabinets.  
 Dimensions of Standard Model Industrial Inverters, 8" x 9" x 5 1/4".  
 Shipping weight, 19 lbs.  
 Dimensions of Heavy Duty Industrial Inverters, 6 1/2" x 11 1/2" x 8 1/2"; shipping weight, 80 lbs.  
 For correct replacement vibrator, consult Inverter Vibrator Guide.  
 "P" Inverters are corrected for loads having power factors as low as 50%.  
 Built-in filter, \$12.50 additional.



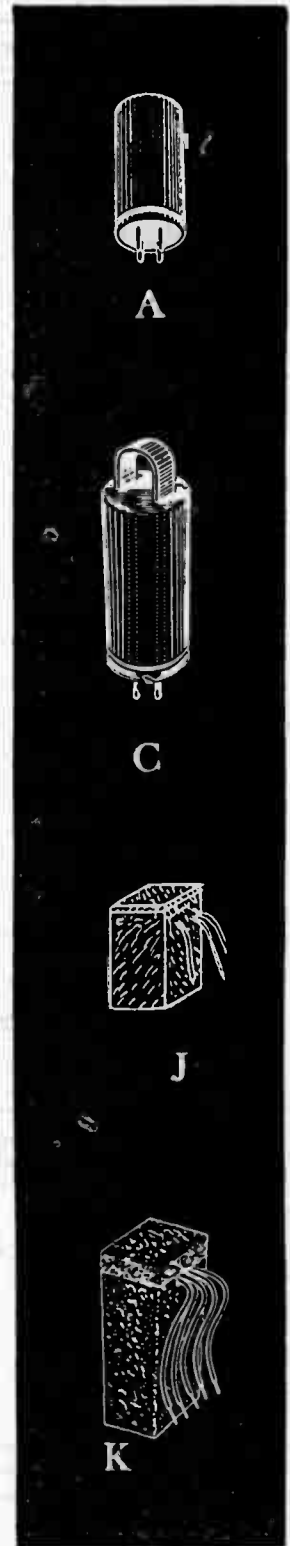
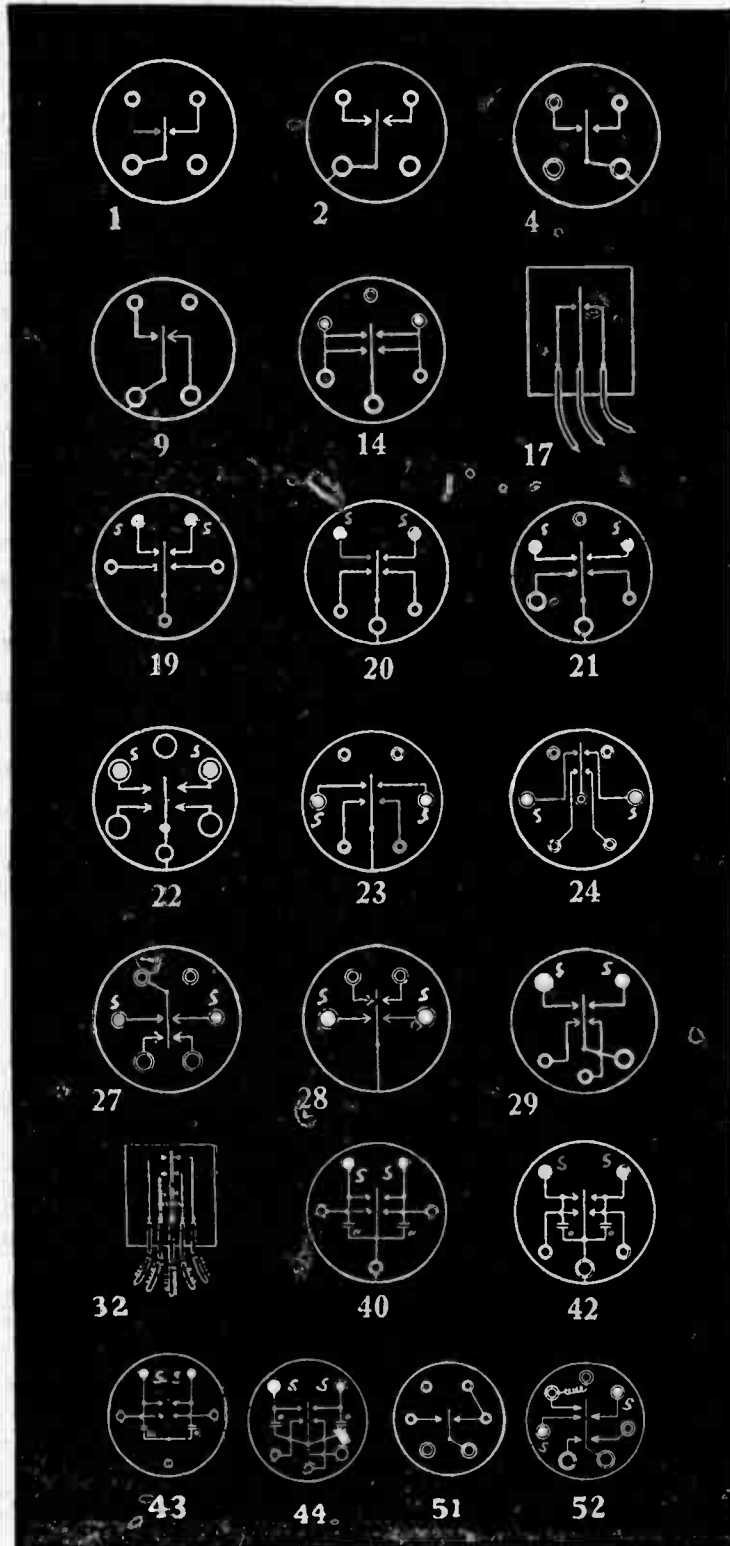
**INSIST on ATR VIBRATORS-Get the Best!!**



# ATR Replacement Vibrator Specifications

## Base Diagrams

## External Views





# ATR VIBRATORS *have Ceramic Stack Spacers*



## ATR Replacement Vibrator Specifications

N.S.—Non Synchronous

S.—Synchronous

Frequency: 115 Cycles except as noted.

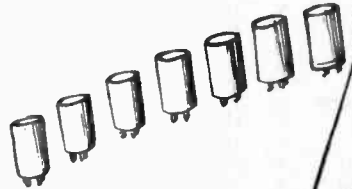
Type No.	Voltage	Type	Base Dia.	Can Style	Dimensions	List Price	Type No.	Voltage	Type	Base Dia.	Can Style	Dimensions	List Price
303	6	N.S.	17	J	1½" x 1¾" x 2½"	\$5.75	521	6	S.	20	A	1½" x 3¼"	\$7.00
324	6	N.S.	1	A	1½" x 3¼"	4.45	522	6	S.	21	A	1½" x 3¼"	7.00
324A	6	N.S.	2	A	1¾" x 3¾"	4.45	522A	6	S.	21	A	1½" x 3¼"	7.00
324B	6	N.S.	1	A	1½" x 3¼"	4.45	523	6	S.	22	A	1½" x 3¼"	7.00
324C	6	N.S.	2	A	1¾" x 4¾"	4.45	524	6	S.	23	A	1½" x 3¼"	7.00
325	6	N.S.	51	A	1½" x 2¾"	5.75	525	6	S.	24	A	1½" x 3¼"	7.00
328	6	N.S.	4	A	1½" x 3¼"	4.45	529	4	S.	21	A	1½" x 3¼"	7.00
335	6	N.S.	9	A	1¾" x 3¾"	4.45	540	6	S.	27	A	1½" x 3¼"	7.00
337	6	N.S.	14	A	1½" x 3½"	5.75	541	4	S.	19	A	1½" x 3¼"	7.00
338	6	N.S.	9	C	1½" x 3¼"	4.45	541A	4	S.	19	A	1½" x 3¼"	7.00
340	6	N.S.	1	A	1½" x 2¾"	4.45	544†	6	S.	28	A	1¾" x 2¾"	7.00
345	6	N.S.	9	A	1½" x 2¾"	4.45	545†	6	S.	28	A	1½" x 3¼"	7.00
347†	6	N.S.	1	A	1½" x 3¼"	5.75	547	6	S.	29	C	1½" x 3½"	7.00
350	6	N.S.	1	A	1¾" x 2¾"	4.45	550	6	S.	32	K	4¼" x 1¾" x 1¾"	7.00
503	6	S.	43	A	1½" x 4½"	8.30	561	6	S.	24	A	1½" x 2¾"	7.00
ADAPTER						1.35	562	6	S.	21	A	1½" x 3¼"	7.00
506	6	S.	40	A	1½" x 4½"	8.30	564*	6	S.	23	A	1½" x 2¾"	7.00
507	6	S.	44	A	1½" x 4½"	8.30	900	2	S.	52	A	1½" x 2¾"	8.90
508	6	S.	42	A	1½" x 4½"	8.30	2324	32	N.S.	1	A	1½" x 3¼"	6.50
520	6	S.	19	A	1½" x 3¼"	7.00	2401	32	S.	22	A	1½" x 3¼"	7.75
520A	6	S.	19	A	1½" x 3¼"	7.00							

## Recommended Substitutions for Discontinued Vibrators

Discontinued Type	Recommended Replacement	Discontinued Type	Recommended Replacement	Discontinued Type	Recommended Replacement
305	303	330	324C	543	522A (Refer Note 3)
307	303 (Refer Note 1)	332	522 (Refer Note 8)	543A	522A (Refer Note 3)
314	324	342	325	546	522 (Refer Note 6)
316	324	504	503	551	350 (Refer Note 14)
317	324	505	503 (Plus Adapter)	553	550 (Refer Note 11)
323	340	531	550 (Refer Note 13)	591	524 (Refer Note 9)
326	325	536	524 (Refer Note 10)	2327	2324 (Refer Note 12)
327	325	537	525	2403	2324

The Installation Notes listed above are shown in Section G of the ATR Vibrator Manual.

# RADIART VIBRATORS



There are many reasons for the nation-wide preference for Radiart Vibrators! One is the absolutely complete selection of types manufactured... there is a CORRECT Radiart replacement vibrator for most every need, to original specifications. In addition, the precision engineering behind the design of each type is backed up by highest standards of manufacture that assure peak performance always!



5300 SERIES vibrator types are Standard Automotive and Household Non-Synchronous units. They are stocked by all RADIART Distributors who carry a complete line.

5400 SERIES vibrator types are Standard Automotive and Household Synchronous units. They are stocked by all RADIART Distributors who carry a complete line.

Light face numbers are discontinued types replaced by current models indicated. See your RADIART REPLACEMENT GUIDE for most complete listing published. Ask your jobber for your free copy!

Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5300	\$4.45	5314	\$4.45	5335	\$4.45	5400	\$7.00	5413	\$7.00	5429	\$3.30	5443	\$7.00
5341M		5320P	4.45	5334		3850, 4501		5413-4	7.00	4504, 4611		3789	
5300-32	6.50	3417		5342M	3.75	5404	7.00	5415		5431	7.75	5443-32	7.75
5395		5321	4.45	5340M		5406	7.00	5434	7.00	5435	7.00	4404	
5301	4.45	5323P	3.75	5343M	5.75	4255H, 4414		5435-4	7.00	5435	7.00	5454	7.00
5327P		3320, 5322P		3815		5407	7.00	3283, 4502		4318		5463	8.30
5303	4.45	5326P	3.75	5363	5.75	5408	7.00	5421	7.00	4318		3308, 3315,	
5339		5325P		2819, 2867, 3227,		5408	7.00	5422	7.75	5435-4	7.00	3317, 3848,	
5384	5.75	4319		3313, 3375, 3442		8439	7.00	4608		5427		4415, 4500	
3786		5328P-32	8.30	5366	5.75	5409-4	7.00	5425	8.30	5436	7.00	5464	8.30
5307	4.45	5331	4.45	3223, 3226, 3263,		5410	7.00	3461, 4613,		5433		3319	
5308	5.75	5333	4.45	3356, 4320, 5312		5411	7.00	4614		5437	7.00	5468-2	9.70
5309	4.45			5367-32	7.00	5420P, 5428		5426	7.00	5438	7.00	5489-2	8.90
				8503, 4314						5440	7.75		
										3883			

5500 SERIES vibrator types are Special Application Non-Synchronous units. These are stocked by RADIART Distributors in accordance with local requirements. They are available for immediate shipment from the Factory. Order through your local distributor.

5600 SERIES vibrator types are Special Application Synchronous units. These are stocked by RADIART Distributors in accordance with local requirements. They are available for immediate shipment from the Factory. Order through your local distributor.

Light face numbers are discontinued types replaced by current models indicated. See your RADIART REPLACEMENT GUIDE for most complete listing published. Ask your jobber for your free copy!

Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price	Type No.	Price
5503-12	\$7.00	5506	\$6.50	5515	\$6.25	5604	\$3.30	5605-32	\$9.05	5607-32	\$9.05	5614-12	\$7.75
4253-12, 4256-12,		4256		4253, 5313,		4505		4255-32,		4257-32		5454-12	
5300-12		5510	6.50	5500, 5503		5605	7.75	4258-32		5609-12	9.05	5615-12	7.75
5503-32	7.00	5511-12	7.00	5516	6.25	4255, 4258		5637	7.75	5409-12		5618-24	7.75
4253-32, 4256-32		5513-12	7.00	4251H, 5501		5605-12	9.05	4257		5610	7.00	5616	7.75
5504P	5.75	5514-4	7.00	5517-12	7.00	4255-12,		5607-12	9.05	5385, 5439		5616-12	9.05
5324P				5518	6.25	4258-12,		4257-12		5610-12	7.75	5620	7.00
				5560	7.75	5406-12				5439-12		5621	6.25

# RADIART VIBRATORS

## RADIART AERIALS

## RADIART VIPOWERS

### VIBRATOR BASE DIAGRAM CROSS INDEX

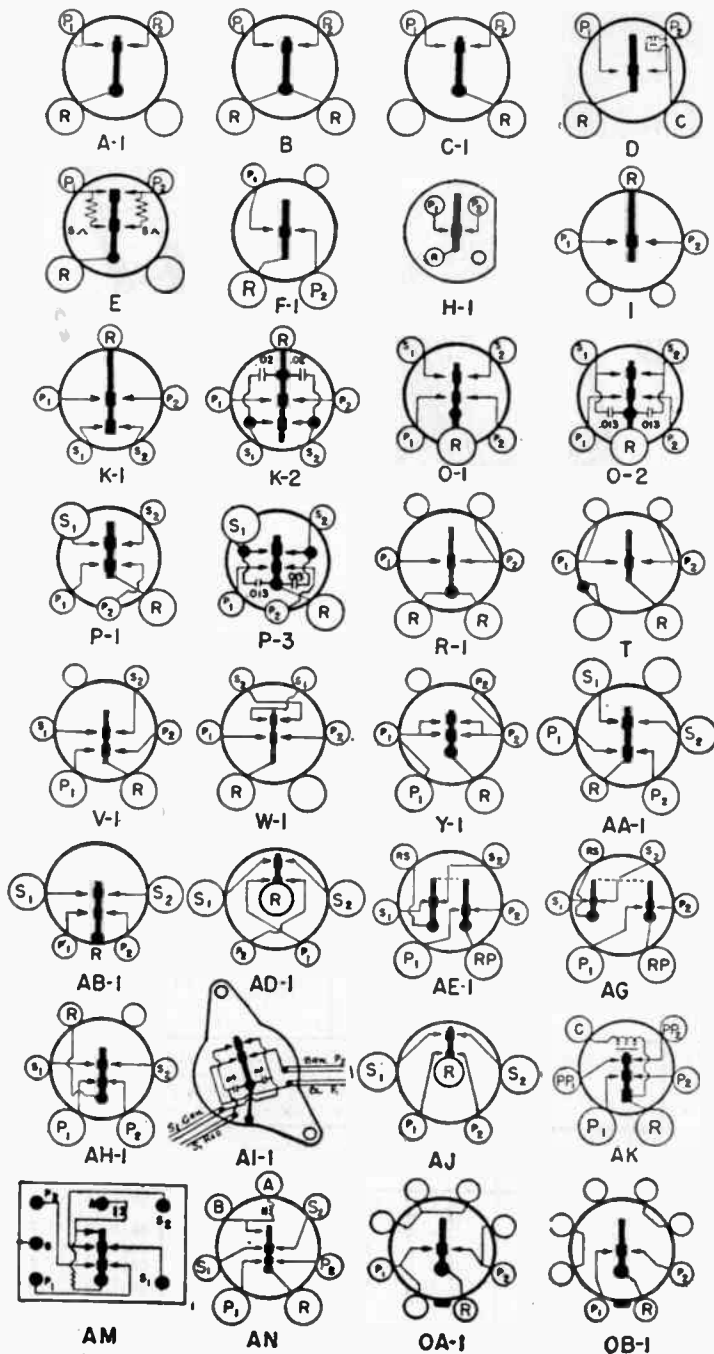
Symbols Used in Vibrator Base Diagrams

- A—A hot line into vibrator.
- B—By-pass for driving point.
- C—External coil lead in shunt vibrator.
- P<sub>1</sub>—Primary contact, usually, but not necessarily connected to the magnet coil in shunt vibrators.
- PP<sub>1</sub>—Dual primary contact, closed when P<sub>1</sub> is closed.
- P<sub>2</sub>—Primary contact, may be the magnet coil connection instead of P<sub>1</sub>.
- PP<sub>2</sub>—Dual primary contact, closed when P<sub>2</sub> is closed.
- R—Vibrating reed in single-reed vibrators.
- RP—Primary vibrating reed in split-reed vibrators.
- RS—Secondary vibrating reed in split-reed vibrators.
- S<sub>1</sub>—Secondary contact, closed when P<sub>1</sub> is closed.
- S<sub>2</sub>—Secondary contact, closed when P<sub>2</sub> is closed.

\* All dimensions given are in inches.  
 † For further information as to Identifying Characteristics, see information given on each Vibrator type in Radiart Replacement Guide.



Radiart Type No.	Base Diagram	Voltage	Frequency	Max. Load	Dia. *	Height
5300	A-1	6	115	6	1 1/2	3 1/2
5300-32	A-1	32	115	1.4	1 1/2	3 1/2
5301	A-1	6	115	6	1 1/2	2 7/8
5303	F-1	6	115	6	1 5/8	3 1/8
5304	I	6	115	6	1 3/4	3 3/8
5307	A-1	6	150	6	1 1/2	3 3/8
5308	E	6	115	6	1 1/2	3 3/8
5309	C-1	6	115	6	1 1/2	2 1/2
5314	A-1	6	115	6	1 1/2	2 3/8
5320P	A-1	6	115	6	1 1/2	3 1/2
5321	A-1	6	115	6	1 1/2	3 1/8
5323P	A-1	6	115	6	1 3/8	4 3/8
5326P	A-1	6	115	6	1 1/2	2 7/8
5328P32	H-1	32	115	1.4	1 5/8	3 1/2
5331	C-1	6	115	6	1 1/2	3 1/8
5333	F-1	6	115	6	1 1/2	3 3/8
5335	F-1	6	115	6	1 1/2	2 7/8
5342M	A-1	6	115	6	1 1/2	2 7/8
5343M	B	6	115	6	1 1/2	4 1/2
5363	LEADS	6	115	4	—	—
5366	R-1	6	115	6	1 1/2	2 7/8
5367-32	T	32	115	1.4	1 1/2	3 3/8
5400	AB-1	6	115	6	1 1/2	3 1/8
5404	AH-1	6	180	6	1 1/2	3 1/8
5406	AD-1	6	115	6	1 1/2	3 3/8
5407	AB-1	6	180	5	1 1/2	3 3/8
5408	AB-1	6	140	6	1 1/2	2 7/8
5409	K-1	6	115	6	1 1/2	3 3/8
5409-4	K-1	4	115	6	1 1/2	3 3/8
5410	O-1	6	115	6	1 1/2	3 3/8
5411	V-1	6	115	6	1 1/2	3 3/8
5413	K-1	6	115	6	1 1/2	3 3/8
5413-4	K-1	4	115	6	1 1/2	3 3/8
5416	K-2	6	115	6	1 1/2	4 1/2
5421	V-1	6	115	6	1 1/2	3 3/8
5422	AE-1	6	115	5	1 1/2	3 1/8
5425	O-2	6	115	6	1 1/2	4 1/2
5426	P-1	6	115	6	1 1/2	3 1/2
5429	P-3	6	115	6	1 1/2	4 1/2
5431	AG	4	115	5	1 1/2	3 3/8
5434	W-1	6	115	6	1 1/2	3 1/2
5435	V-1	6	115	6	1 3/8	3 3/8
5435-4	V-1	4	115	6	1 3/8	3 1/8
5436	V-1	6	180	5	1 1/2	2 7/8
5437	AB-1	6	180	5	1 3/8	2 7/8
5438	AB-1	6	140	6	1 1/2	3 3/8
5440	AB-1	6	115	6	1 1/2	4 1/2
5443	AA-1	6	115	6	1 1/2	3 3/8
5443-32	AA-1	32	115	1.4	1 1/2	3 3/8
5454	AD-1	6	115	6	1 1/2	2 7/8
5463	LEADS	6	115	6	—	—
5464	AI-1	6	115	6	1 1/2	4 1/2
5468-2	AM	2	115	2	1 1/2	sq. 2 1/2
5469-2	AN	2	115	2	1 1/2	2 1/2
5503-12	A-1	12	115	6	1 1/2	3 3/8
5503-32	A-1	32	115	2.5	1 1/2	3 3/8
5504P	Y-1	6	115	6	1 1/2	3 1/2
5506	D	6	115	10	1 1/2	3 1/2
5510	OA-1	6	115	10	1 1/2	3 1/8
5511-12	OB-1	12	115	6	1 1/2	3 3/8
5513-12	AK	12	180	3	1 1/2	3 3/8
5514-4	A-1	4	180	5	1 1/2	2 7/8
5515	A-1	6	115	10	1 1/2	3 3/8
5516	A-1	6	115	10	1 1/2	3 1/8
5517-12	V-1	12	180	3	1 1/2	3 3/8
5518	V-1	6	115	10	1 1/2	2 7/8
5560	A-1	6	60	6	1 1/2	3 1/2
5604	K-2	6	115	6	1 1/2	4 1/2
5605	AD-1	6	115	10	1 1/2	3 3/8
5605-12	AD-1	12	115	6	1 1/2	3 3/8
5605-32	AD-1	32	115	2.5	1 1/2	3 3/8
5607	AJ	6	150	5	1 3/8	2 3/4
5607-12	AJ	12	180	3	1 3/8	2 3/4
5607-32	AJ	32	180	1.4	1 3/8	2 3/4
5609-12	K-1	12	115	3	1 1/2	3 1/2
5610	V-1	6	115	6	1 1/2	3 3/8
5610-12	V-1	12	115	3	1 1/2	3 3/8
5614-12	AD-1	12	115	4	1 1/2	2 7/8
5615-12	V-1	12	180	8	1 1/2	2 3/8
5615-24	V-1	24	180	1.4	1 1/2	2 3/8
5616	AJ	6	180	5	1 1/2	2 7/8
5616-12	AJ	12	180	3	1 1/2	2 3/8
5620	AB-1	6	115	6	1 1/2	2 7/8
5621	V-1	6	115	10	1 1/2	2 3/4



# RADIART

## HEAVY DUTY REPLACEMENT VIBRATORS

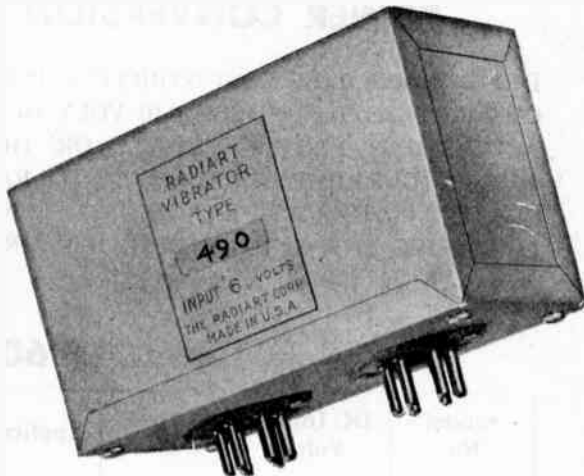


# VIBRATORS

Model No.	Voltage	Freq. Cycles	Type	Container	Used In	List Price
330	12	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$		910.65
390	12	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
426	6	40	H-D Single	2 $\frac{1}{2}$ x 4 $\frac{1}{2}$		10.65
427	6	60	H-D Single	2 $\frac{1}{2}$ x 4 $\frac{1}{2}$		10.65
490	6	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
491	6	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$		14.85
1083	110	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
1315	110	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	110R10 & 110R15	10.65
1506	32	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
*1640	110	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$		12.65
2117	17	100	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
2522	45	60	Polarity Changer	1 $\frac{1}{2}$ x 2 $\frac{1}{2}$	110PA5 & 110PB5	7.50
2639	6	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$		14.85
2909	32	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	32R8 & 32RU15	10.65
3047	12	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$	12RU15	14.85
3087	12	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	12R8	10.65
3103	6	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	6R5	10.65
4123	6	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$	6R10	14.85
11028	110	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$		10.65
32171	32	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$		10.65
*3077	110	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	110RT15	12.60
**3077-V	110	60	H-D Single	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$	110RT25	15.65
3079	110	60	H-D Tandem	5 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 3 $\frac{1}{2}$	110RT35	16.85

\* Denotes adjustable frequency vibrator

\*\* Denotes adjustable frequency vibrator with control built in

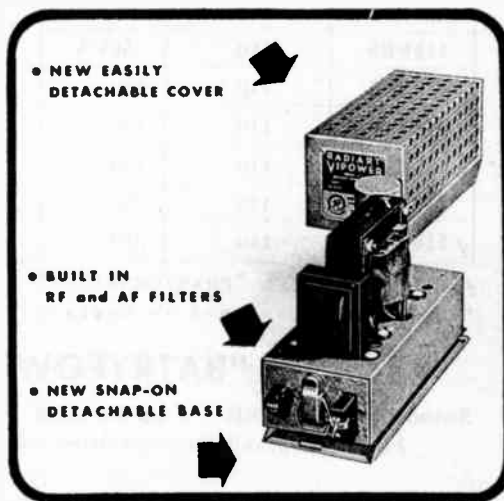


## Super RADIART VIPOWERS

BUILT TO DO THE WHOLE JOB COMPLETE  
WITH BUILT-IN RF and AF FILTERS

VIPOWER MODEL	D.C. INPUT VOLTS (Nominal)	D.C. OUTPUT VOLTS (Nominal)	OUTPUT MILLS	TYPE
451	6 or 12	250 or 180	60 40	Self-rectifying
452	6	300*	100	Self-rectifying
453	6	300*	100	OZ4A Rectifier
454	6	300	200	Two OZ4A Rectifiers
455	6	400	150	Two 6X5 GT Rectifiers
456	6V D.C. or 110V 60 C.Y. A.C.	300*	100	OZ4A Rectifier

\*NOTE: - Tapped at 275V, 250V, 225V.



RADIART tops the field again—the only line of Vibrator Power supplies that is built to do the whole job—not half a job—full R.F. and A.F. filtering.

Easy installation—New "Snap-On" Mounting Base—Quick Removal for service or replacement by opening one snap-latch.

Famous RADIART Quality, Performance and dependable long life.

THE RADIART CORP. — — — CLEVELAND 2, OHIO

# RADIART VIPOWERS



## FOR DC TO AC POWER CONVERSION

DEPENDABLE LOW COST VIBRATOR POWERED CONVERTERS TO FURNISH 110-VOLT 60 CYCLE AC CURRENT FROM 6, 12, 32 OR 110 VOLT DIRECT CURRENT SOURCES. FAMOUS RADIART QUALITY IS YOUR ASSURANCE OF DEPENDABLE LONG LIFE AND OUTSTANDING PERFORMANCE.



### 110 VOLT 60 CYCLE OUTPUT:

Model No.	DC Input Volts	Output Watts	Applications	Size	Weight Lbs.	List Price
6R5	6	50	Mobile	6 $\frac{3}{4}$ x 7 $\frac{3}{4}$ x 5 $\frac{7}{8}$	12	\$ 41.95
6R10	6	100		7 x 12 $\frac{5}{8}$ x 7 $\frac{1}{2}$	19	59.50
12R8	12	80	Marine and Mobile	6 $\frac{3}{4}$ x 7 $\frac{3}{4}$ x 5 $\frac{7}{8}$	12	41.95
12RU15	12	150		7 x 12 $\frac{5}{8}$ x 12 $\frac{1}{2}$	22	78.95
32R8	32	80	Farm and Marine	6 $\frac{1}{4}$ x 7 $\frac{5}{8}$ x 5 $\frac{7}{8}$	13 $\frac{1}{4}$	48.50
32RU15	32	150		6 $\frac{3}{8}$ x 12 $\frac{3}{8}$ x 7 $\frac{1}{2}$	22 $\frac{1}{4}$	73.50
110PA5	110	50VA	Record Players	3 $\frac{3}{4}$ x 6 $\frac{1}{4}$ x 2 $\frac{3}{4}$	2	14.95
110PB5	110	50VA		3 $\frac{3}{4}$ x 6 $\frac{1}{4}$ x 2 $\frac{3}{4}$	2	16.95
110R10	110	100	For AC Power from DC Lines in City Areas	6 $\frac{3}{8}$ x 7 $\frac{3}{4}$ x 5 $\frac{1}{4}$	10 $\frac{1}{2}$	39.95
110RA15	110	150		6 $\frac{3}{4}$ x 7 $\frac{3}{4}$ x 5 $\frac{7}{8}$	14	48.75
110RT15*	110	150		6 $\frac{7}{8}$ x 12 $\frac{1}{4}$ x 7 $\frac{1}{2}$	16 $\frac{3}{4}$	65.00
110RT25*	110	250		6 $\frac{1}{2}$ x 12 $\frac{7}{8}$ x 8 $\frac{1}{2}$	22 $\frac{1}{2}$	69.95
110RT35*	110	350		7 $\frac{1}{2}$ x 14 x 8 $\frac{5}{8}$	40 $\frac{1}{2}$	119.50

† Equipped with "PHANTOMSWITCH" automatic remote on-off control.

\* Specially Designed to Operate Television Sets.

### "BATRYPOWER"

Smooth DC POWER - 6 or 12 volts - from 110 volt AC line.  
For Testing and Demonstrating Automobile Radios, etc.

Model No.	Output	Size	Wt. Lbs.	List Price
110BA6	6V DC @ 10A.	7 $\frac{5}{8}$ x 12 $\frac{1}{4}$ x 8 $\frac{1}{2}$	16	\$54.95
110BA12	6V DC @ 20A. 12V DC @ 10A.	7 $\frac{5}{8}$ x 13 x 8 $\frac{1}{2}$	24 $\frac{1}{2}$	85.50



**THE RADIART CORPORATION**  
CLEVELAND 2, OHIO

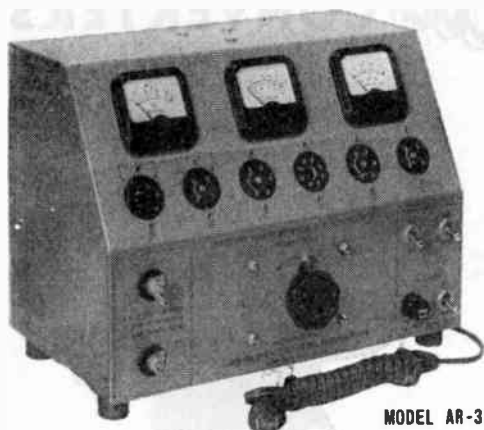
# NEW !!!

## ELECTROX VIBRATOR ANALYZER

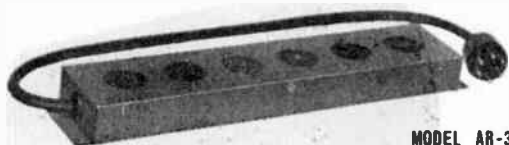
New ElectroX Vibrator Analyzer provides a *thorough* and *practical* method of vibrator testing. This equipment combines a reliable, heavy-duty, adjustable power supply for operating automobile radios, with an analyzer for making a *complete* auto radio vibrator test.

The ElectroX Vibrator Analyzer accurately determines shorted and otherwise defective vibrators and predicts vibrator failures before they occur. It measures starting voltage, current consumption, output voltage and indicates irregular or intermittent operation. It subjects the vibrator to voltage conditions encountered when normally connected to the electrical system of the automobile.

AR-3 ADAPTER STRIP—Plugs into the Vibrator Analyzer and accommodates most vibrators requiring special sockets.



MODEL AR-3  
Vibrator Analyzer  
and Power Supply



MODEL AR-3  
Adapter Strip

## ELECTROX BATTERY ELIMINATORS

ELECTROX "MASTER" MODEL AR-2: Provides smooth, hum-free Direct Current for servicing and demonstrating practically any type and size auto radio, either push button or manually tuned. Delivers 6 volts D.C. at less than 3% ripple. D.C. output is adjustable to 6 volts between 3 and 15 amps., indicated by easily read voltmeter.

ELECTROX "STANDARD" MODEL AR-1: Practical, low-cost D.C. power supply unit constructed to same standards as Model AR-2 except D.C. output is not adjustable. Delivers 6 volts D.C. at approx. 15 amps. with a low ripple component.

### Specifications: Models AR-1 and AR-2

Dimensions—11½" long, 5¼" wide, 6⅝" high.

A.C. Input—115 volts, 1 phase, 60 cycle. Weight—20 lbs.

Equipment—Condenser; transformer; filter choke; Selenium rectifier; cartridge-type fuse, easily accessible from outside of case; rubber feet; 6 ft. A.C. cord and plug. Mounted in sturdy, well-ventilated steel case.



MODEL AR-2



MODEL AR-1

## SCHAUER BATTERY CHARGERS



A complete line of battery chargers designed for safe recharging of single storage batteries. Four to 20 ampere capacities. Approved by Underwriters' Laboratories, Inc.

RECTIFIER DIVISION

# SCHAUER MANUFACTURING CORP. • Cincinnati, Ohio



# Gothard CONVERTERS

## DYNAMOTORS

### GOTHARD DYNAMOTORS

The GOTHARD Model "GP-26" is especially designed and built for Mobile Transmitter applications, intermittent duty. Length 7 1/4", Diam. 3 1/2", Height 4", Weight 8 1/4 lbs.

INPUT		OUTPUT			Approx. Effc.	App. Reg.
Volts	Amps.	Volts	MA	Watts		
5.6	24	400	200	80	60%	17%
5.6	26	400	150	90	61%	18%
5.6	29	400	250	100	61%	19%
5.6	31	620	170	106	61%	20%
5.6	38	500	225	112	61%	21%
5.6	34	420	280	118	62%	22%
6.0	40	400	375	150	63%	25%

Prices upon request. Submit your special requirements to our engineers.

Also supplied for 12, 14, 24, 28, or 32 Volt input  
For continuous duty applications, Models GP-12, GP-17 and GP-26 cover wattage ratings from 20 to 80 Watts. Input voltages 6, 12, 24, or 32.  
GP-12: Length 5 3/4", Diam. 3 1/4", Height 4", Weight 5 1/2 lbs.  
GP-17: Length 6 1/2", Diam. 3 1/2", Height 4", Weight 6 lbs.  
GP Models have steel mounting bases; width 4 1/8".



MODEL "GP-26" DYNAMOTOR

### GOTHARD AIRCRAFT DYNAMOTORS

Frame Size	INPUT		OUTPUT		Length	Diam.	Weight
	Volts	Amps.	Volts	MA			
DS-12	12	2.6	250	60	4 3/4"	2 3/4"	2 7/8"
DS-17	12	3.6	250	90	5 3/4"	2 3/4"	3 7/8"
SP-12	12	4.0	250	100	6"	3 1/2"	4 3/8"
SP-17	12	5.2	300	125	6 1/2"	3 7/8"	5 5/8"
SP-22	12	6.4	400	125	7"	3 7/8"	6 1/2"
SF-20	12	8.4	400	150	6 3/4"	4"	8 1/2"
SF-25	12	10.	500	150	7 1/4"	4"	9"

Prices upon request. Submit your special requirements to our engineers.

Above ratings are continuous duty with temperature of 40°C.  
Also supplied for 6, 14, 24, 28, or 32 Volt input. "SP" and "SF" dynamotors may be supplied in fan-ventilated construction as types "SPF" and "SFF". Prices upon request.



MODEL "SF-20" DYNAMOTOR

### GOTHARD ROTARY CONVERTERS

TYPE "K" 3600 RPM (60 Cycle) • 3000 RPM (50 Cycle)

Model No.	Frame Size	INPUT		OUTPUT at 90% P.F.			App. Net Wt.	List Price
		Volts	Amps.	A.O. Volts	VA at 60 cy.	VA at 50 cy.		
6K11	AK-15	6	86	110	110	90	24 #	6 # \$80.50 \$102.35
12K11	AK-15	12	18	110	110	90	24 #	6 # 80.50 102.35
12K16	AK-25	12	24	110	160	125	29 #	6 # 98.90 128.80
24K11	AK-15	24	9	110	110	90	24 #	6 # 80.50 102.35
24K20	AK-25	24	14	110	200	160	29 #	6 # 98.90 128.80
24K30	BK-22	24	19.4	110	300	250	38 #	6 # 137.50 154.50
24K50	BK-35	24	30.4	110	500	400	45 #	6 # 159.50 182.85
3K11	AK-15	32	6.2	110	110	90	24 #	6 # 73.60 95.45
3K20	AK-25	32	10.4	110	200	160	29 #	6 # 92.00 121.90
3K30	BK-22	32	14.5	110	300	250	38 #	6 # 116.15 147.20
3K50	BK-35	32	22.0	110	500	400	45 #	6 # 143.75 175.95
3K75	CK-35	32	34	110	750	600	68 #	7 # 210.45 262.20
4K11	AK-15	48	4.4	110	110	90	24 #	6 # 80.50 102.35
4K20	AK-25	48	7.0	110	200	160	29 #	6 # 98.90 128.80
4K30	BK-22	48	9.7	110	300	250	38 #	6 # 137.50 154.50
4K50	BK-35	48	15.2	110	500	400	45 #	6 # 159.50 182.85
4K75	CK-35	48	22.7	110	750	600	68 #	7 # 210.45 262.20
1K11	AK-15	115	1.8	110	110	90	24 #	6 # 73.60 95.45
1K20	AK-25	115	3.0	110	200	160	29 #	6 # 92.00 121.90
1K30	BK-22	115	4.2	110	300	250	38 #	6 # 116.15 147.20
1K50	BK-35	115	6.6	110	500	400	45 #	6 # 143.75 175.95
1K75	CK-35	115	9.4	110	750	600	68 #	7 # 210.45 262.20
1K100	CK-45	115	12.4	110	1000	800	80 #	7 # 257.60 325.45
2K11	AK-15	230	.9	110	110	90	24 #	6 # 77.05 98.90
2K20	AK-25	230	1.5	110	200	160	29 #	6 # 95.45 125.35
2K30	BK-22	230	2.1	110	300	250	38 #	6 # 119.60 150.65
2K50	BK-35	230	3.3	110	500	400	45 #	6 # 147.20 179.40
2K75	CK-35	230	4.7	110	750	600	68 #	7 # 213.90 265.65
2K100	CK-45	230	6.2	110	1000	800	80 #	7 # 261.05 328.90

Also supplied for Marine Type Filter, 220 Volt A.C. Output, and automatic frequency control. Prices upon request.

Ball Bearings are standard on all models.



MODEL "AK-15" CONVERTER (With Filter)



MODEL "BK-35" CONVERTER (Less Filter)

There's a  
**POWERSTAT**  
VARIABLE TRANSFORMER  
for *Your* application

# PROTECT THE INVESTMENT IN YOUR EQUIPMENT

Recent advances in the electrical field have made more critical the need for precise voltage control equipment designed to protect and to operate highly sensitive and expensive apparatus. Whether the application involves the control of light, heat, sound, power or electronic equipment, there's a POWERSTAT variable transformer to suit every requirement.

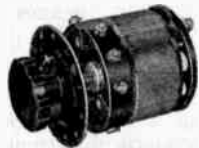
## STANDARD POWERSTAT VARIABLE TRANSFORMERS



TYPE 116



TYPE 1126



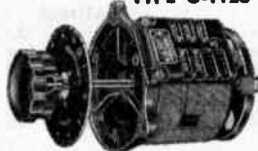
TYPE 20



TYPE O-1126



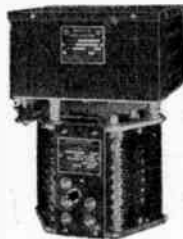
TYPE 2PF1126



TYPE 116U



TYPE 1256



Type MZ1226

### POWERSTAT Variable Transformers

are auto-transformers of toroidal core design, with a movable brush-tap which rotates to deliver a continuously-adjustable output voltage from a-c power lines. Into each POWERSTAT are incorporated superior qualities of top electrical performance, rugged mechanical construction, compact design and durability. POWERSTATS feature zero waveform distortion, excellent regulation, conservative ratings, standard mountings, smooth control and high efficiency. POWERSTATS are available with motor drives for pushbutton remote control, or for use with automatic controllers. A variety of motor speeds is offered.

WRITE FOR COMPLETE  
INFORMATION  
100 MEADOW STREET  
BRISTOL, CONNECTICUT

Line Voltage	Output Voltage	Maximum Output Amperes	Output KVA	Frequency	Type	
<b>Single Phase</b>						
116	0-135	3.0	0.4	*60	20	
	0-135	7.5	1.0	50/60	116	
	0-135	15.0	2.0	50/60	1126	
	0-135	30.0	4.0	50/60	1126-2P	
	0-135	45.0	6.1	50/60	1156	
	0-135	90.0	12.1	50/60	1156-2P	
	0-135	135.0	18.2	50/60	1156-3P	
	0-135	180.0	24.3	50/60	1156-4P	
	0-135	270.0	36.4	50/60	1156-6P	
	0-270	3.0	0.35	50/60	216	
	0-270	9.0	1.05	50/60	1226	
	0-270	28.0	3.27	50/60	1256	
230	0-270	3.0	0.81	50/60	216	
	0-270	7.5	2.0	50/60	116-2S	
	0-270	9.0	2.4	50/60	1226	
	0-270	15.0	4.0	50/60	1126-2S	
	0-270	28.0	7.5	50/60	1256	
	0-270	45.0	12.1	50/60	1156-2S	
	0-270	56.0	15.1	50/60	1256-2P	
	0-270	84.0	22.7	50/60	1256-3P	
	0-270	112.0	30.2	50/60	1256-4P	
	0-270	168.0	45.0	50/60	1256-6P	
	0-540	3.0	0.7	50/60	216-2S	
	0-540	9.0	2.1	50/60	1226-2S	
0-540	28.0	6.5	50/60	1256-2S		
440	0-515	3.0	1.5	50/60	216-2S	
	0-515	9.0	4.6	50/60	1226-2S	
	0-515	28.0	14.4	50/60	1256-2S	
	0-515	56.0	28.8	50/60	1256-4PS	
	0-515	84.0	43.2	50/60	1256-6PS	
<b>Three Phase</b>						
115	0-135	3.0	0.7	*60	20-2D	
	0-135	7.5	1.8	50/60	116-2D	
	0-135	15.0	3.5	50/60	1126-2D	
	0-135	45.0	10.5	50/60	1156-2D	
	0-135	90.0	21.0	50/60	1156-4D	
	0-135	135.0	31.6	50/60	1156-6D	
	0-270	3.0	0.6	50/60	216-2D	
	0-270	9.0	1.8	50/60	1226-2D	
	0-270	28.0	5.7	50/60	1256-2D	
	230	0-230	3.0	1.2	60	201-3Y
		0-270	3.0	1.4	50/60	216-2D
		0-270	7.5	3.5	*60	116-3Y
0-270		9.0	4.2	50/60	1226-2D	
0-270		15.0	7.0	*60	1126-3Y	
0-270		28.0	13.1	50/60	1256-2D	
0-230		45.0	17.9	50/60	1156L-3Y	
0-270		56.0	26.2	50/60	1256-4D	
0-270		84.0	39.3	50/60	1256-6D	
0-230		90.0	35.8	50/60	1156L-6Y	
0-540		3.0	1.2	*60	216-3Y	
0-540		9.0	3.6	*60	1226-3Y	
0-540	28.0	11.3	*60	1256-3Y		
440	0-515	3.0	2.7	*60	216-3Y	
	0-515	9.0	8.0	*60	1226-3Y	
	0-515	28.0	25.0	*60	1256-3Y	
	0-515	56.0	50.0	*60	1256-6Y	

### OIL-COOLED POWERSTATS

115	135	15.0	2.0	50/60	0-116
		30.0	4.0	50/60	0-1126
230	270	6.0	1.6	50/60	0-216
		18.0	4.8	50/60	0-1226

\*When these POWERSTATS are "L" connected so that output does not exceed applied voltage, frequency range is 50/60 cycles.

**THE SUPERIOR ELECTRIC CO.**  
BRISTOL, CONNECTICUT



POWERSTAT VARIABLE TRANSFORMERS • VOLTBOX A-C POWER SUPPLIES • STABILINE VOLTAGE REGULATORS

# STABILINE AUTOMATIC VOLTAGE REGULATORS

DELIVER CONSTANT OUTPUT VOLTAGE REGARDLESS OF VARIATIONS IN INPUT VOLTAGE OR LOAD CURRENT

## INSTANTANEOUS ELECTRONIC STABILINES

Completely electronic voltage regulators, instantaneous in action; no moving parts; waveform distortion *never* exceeds 3%. Output voltage is stable within  $\pm .1$  of 1% for wide line variations. Available in cabinet or rack-mounting models.



TYPE IE51002  
(Portable)



TYPE EM

Because of differences in basic design, it's possible to order a STABILINE voltage regulator to meet the requirements of any problem in voltage regulation. If you have a particular problem, write The Superior Electric Company. Our staff of voltage control engineers is available for consultation — at no obligation to you. It's through this engineering service that we can best serve you; that we can design and build voltage control equipment second to none in the electrical industry.

Input Voltage Range	Output Voltage Range	Frequency in Cycles	RATINGS		Rated Output KVA	Type
			Load Range in Amperes	Load Power Factor Range		
95-135	110-120	60 $\pm$ 10%	0-2.2		0.25	IE51002
95-135	110-120	60 $\pm$ 10%	0-2.2		0.25	IE51002R
95-135	110-120	60 $\pm$ 10%	0-4.5		0.5	IE51005
95-135	110-120	60 $\pm$ 10%	0-4.5		0.5	IE51005R
95-135	110-120	50 $\pm$ 10%	0-4.5		0.5	IE51005S
95-135	110-120	50 $\pm$ 10%	0-4.5	.5 lagging	0.5	IE51005R
195-255	220-240	50 $\pm$ 10%	0-2.2		0.5	IE52005
195-255	220-240	50 $\pm$ 10%	0-2.2		0.5	IE52005R
95-135	110-120	60 $\pm$ 10%	0-8.5	to	1.0	IE5101
95-135	110-120	60 $\pm$ 10%	0-8.5		1.0	IE5101R
95-135	110-120	50 $\pm$ 10%	0-8.5	.9 leading	1.0	IE5101R
195-255	220-240	50 $\pm$ 10%	0-4.5		1.0	IE5201
195-255	220-240	50 $\pm$ 10%	0-4.5		1.0	IE5201R
95-135	110-120	60 $\pm$ 10%	0-22.0		2.5	IE5102
95-135	110-120	60 $\pm$ 10%	0-22.0		2.5	IE5102R
195-255	220-240	60 $\pm$ 10%	0-11.0		2.5	IE5202
195-255	220-240	60 $\pm$ 10%	0-11.0		2.5	IE5202R
195-255	220-240	50 $\pm$ 10%	0-11.0		2.5	IE5202
195-255	220-240	50 $\pm$ 10%	0-11.0		2.5	IE5202R
95-135	110-120	60 $\pm$ 10%	0-43.5		5.0	IE5105
195-255	220-240	60 $\pm$ 10%	0-22.0		5.0	IE5205

## ELECTROMECHANICAL STABILINES

Consist of an electronic detector circuit controlling a motor-driven POWERSTAT variable transformer. Features: zero waveform distortion, insensitivity to magnitude and power factor of load, no effect on system power factor, no critical adjustments, high efficiency, adjustable output voltage.

Nominal Output Voltage	Input Voltage Range	Output Voltage Range	RATINGS		Type
			Output Current (Amperes)	Output KVA	
Single Phase					
115	95-135	110-120	17.5	2.0	EM4102
			52.0	6.0	EM4106
			130.0	15.0	EM4115
208	180-230	200-215	32.5	6.7	EM8207
			120.0	25.0	EM8228
230	195-255	220-240	32.5	7.5	EM4207
			120.0	27.5	EM4228
440	380-500	420-460	15.0	6.6	EM4407
			40.0	17.6	EM4418
Three Phase					
208	180-230	200-215	25.0	9.0	EM8210Y
			38.0	13.5	EM8215Y
			50.0	18.0	EM8220Y
			113.0	40.0	EM8245Y
230	195-255	220-240	145.0	52.0	EM8258Y
			25.0	10.0	EM6210Y
			38.0	15.0	EM6215Y
			50.0	20.0	EM6220Y
440	380-500	420-460	113.0	45.0	EM6245Y
			145.0	58.0	EM6258Y
			16.0	12.0	EM6412Y
			22.0	17.0	EM6417Y
440	380-500	420-460	33.0	25.0	EM6425Y
			66.0	50.0	EM6450Y
			100.0	75.0	EM6475Y
			131.0	100.0	EM64100Y

**VOLTBOX A-C POWER SUPPLIES:** Compact, portable sources of variable a-c voltage for use in laboratory, inspection and maintenance sections and in transmitter work-rooms. Two types available: UC1M — 115V, 50/60 cycle, 1 phase, output 0-135V, 7.5 amps, 1KVA, UC2M—230V, 50/60 cyce, 1 phase, output 0-270V, 3.0 amps, 810VA.

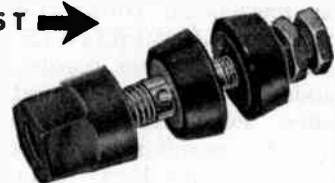


TYPE UC1M

## NEW 5-WAY BINDING POST

5 methods of connection. Complete insulation, 30 amp. current capacity, 1000V working voltage. Captive head for convenience. Red or black color. 5 connections:

1. PERMANENT CLAMPING.
2. SPADE LUG.
3. PLUG-IN FOR BANANA PLUG.
4. LOOPING AND CLAMPING.
5. CLIP-LEAD.



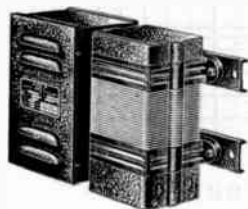
COPIES OF BULLETINS  
ON ALL SUPERIOR  
EQUIPMENT WILL BE  
SENT ON REQUEST



POWERSTAT VARIABLE TRANSFORMERS • VOLTBOX A-C POWER SUPPLIES • STABILINE VOLTAGE REGULATORS

# SO LA *Constant Voltage* TRANSFORMERS

## CONSTANT VOLTAGE TRANSFORMER WITH HARMONIC FILTER



### TYPE CVH

Incorporates harmonic neutralizer circuit . . .  $\pm 1\%$  regulated . . . less than 3% harmonic distortion.

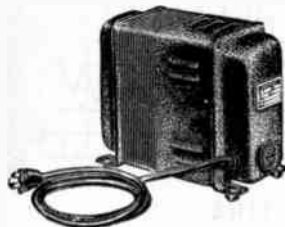
#### ELECTRICAL AND MECHANICAL SPECIFICATIONS:

All models—Input 95-125 v, output 115v

CAT. NO.	CAP. V.A.	DIMENSIONS IN INCHES					SHIP'G WGT.	PRICE EACH
		A	B	C	E	F		
5002	30	4 $\frac{1}{8}$	11 $\frac{3}{8}$	4 $\frac{1}{2}$	2 $\frac{1}{8}$	10 $\frac{3}{8}$	27	\$ 30.00
5003	60	4 $\frac{3}{8}$	11 $\frac{3}{4}$	4 $\frac{1}{2}$	2 $\frac{1}{8}$	10 $\frac{3}{4}$	35	38.00
5004	120	7 $\frac{1}{8}$	11	5 $\frac{7}{8}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	45	51.00
5005	250	8 $\frac{1}{2}$	16 $\frac{7}{8}$	6 $\frac{1}{4}$	3 $\frac{1}{2}$	15 $\frac{3}{8}$	60	80.00
5006	500	10 $\frac{1}{4}$	16 $\frac{7}{8}$	6 $\frac{1}{4}$	5 $\frac{1}{4}$	15 $\frac{3}{8}$	70	110.00
5008	1000	14 $\frac{1}{8}$	21 $\frac{1}{4}$	8 $\frac{3}{4}$	6 $\frac{3}{4}$	20	160	180.00
5010	2000	20 $\frac{1}{8}$	26 $\frac{1}{4}$	11 $\frac{1}{4}$	12 $\frac{1}{4}$	24 $\frac{1}{4}$	320	310.00

Transformers of catalog numbers 5002, 5003 and 5004 are now equipped with a primary cord and a secondary receptacle output for convenience in the laboratory. All other transformers are manufactured with knockout boxes.

## CONSTANT VOLTAGE TRANSFORMER FOR TELEVISION RECEIVERS



### TYPE CVA

Voltage regulation for home TV Receivers eliminates flicker and distortion due to line voltage variations. Moderate price . . . plug-in type . . . regulation  $\pm 3\%$  or less.

#### ELECTRICAL AND MECHANICAL SPECIFICATIONS:

Input 95-130 v, Nominal Output Value in 115-120 v range.

CATALOG NUMBER	CAP. V.A.	DIMENSIONS IN INCHES			SHIP. WEIGHT	PRICE EACH
		A	B	C		
7201	180	7 $\frac{1}{4}$	8 $\frac{1}{8}$	4 $\frac{1}{2}$	19	\$34.50
7202	300	7 $\frac{1}{4}$	9 $\frac{1}{8}$	4 $\frac{1}{2}$	26	37.50

## ADJUSTABLE . . . REGULATED . . . A.C. VOLTAGE SUPPLY . . . WITH HARMONIC FILTER

### TYPE CVL



One outlet regulated  $\pm 1\%$  and adjustable from 0 to 130 volts. One outlet for fixed value 115 volts regulated  $\pm 1\%$ . Total harmonic distortion less than 3%. Regulating response 1.5 cycles or less. Self-protecting against short circuit. Portable for use in shop or laboratory.

#### ELECTRICAL AND MECHANICAL SPECIFICATIONS:

Input 95-125 v; Output No. 1, 115 v; Output No. 2, 0-130 v

CATALOG NUMBER	CAP. V.A.	DIMENSIONS IN INCHES			SHIP. WEIGHT	PRICE EACH
		A	B	C		
50105	250	12 $\frac{5}{8}$	7 $\frac{1}{2}$	12 $\frac{5}{8}$	50	\$ 98.00
50106	500	13 $\frac{5}{8}$	7 $\frac{1}{2}$	14 $\frac{3}{8}$	70	138.00



## CONSTANT VOLTAGE TRANSFORMER FOR PLATE AND FILAMENT SUPPLY

### TYPE CVE

A single, compact source of filament and plate supply voltages . . . regulated to within  $\pm 3\%$  or less with line voltage variations of 100-300 volts.

#### ELECTRICAL AND MECHANICAL SPECIFICATIONS: Input 100-130 v.

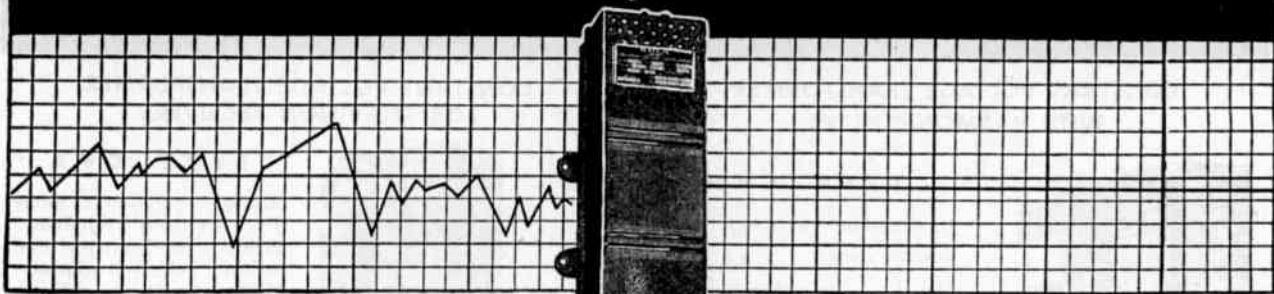
CATALOG NUMBER	CAP. V.A.	D.C. INPUT VOLTS TO FILTER	FILAMENT WINDINGS		DIMENSIONS IN INCHES			SHIP. WEIGHT	PRICE EACH
			6.3v	5.0v	A	B	C		
7105	42	275v D.C. @ 50 M.A.	2.5 amps C.T.	2.0 amps	4 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{3}{8}$	5 $\frac{1}{2}$	\$14.50
7106	75	385v D.C. @ 110 M.A.	3.0 amps C.T.	2.0 amps	4 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	8 $\frac{3}{4}$	18.00
7107	210	380v D.C. @ 250 M.A.	#1 4.0 amps #2 8.0 amps unregulated	3.0 amps	7	4 $\frac{1}{2}$	4 $\frac{7}{8}$	19	28.00

DIMENSIONS—A: OVERALL LENGTH B: OVERALL WIDTH  
C: OVERALL HEIGHT E & F: MOUNTING CENTERS

PRICES F.O.B. CHICAGO, ILL., SUBJECT TO CHANGE WITHOUT NOTICE

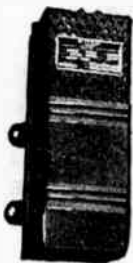
**SO LA ELECTRIC COMPANY • 4633 WEST 16th ST. • CHICAGO 50, ILL.**

# SO LA *Constant Voltage* TRANSFORMERS



## FLUCTUATING LINE VOLTAGE

SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER  
TYPE 3



Constant Voltage Transformers are designed to provide a constant output voltage which is unaffected by changes in input voltage. Stabilization is instantaneous and automatic and there are no moving parts. Constant Voltage Transformers also provide isolation between input and output circuits. Low output voltage wave distortion and small size make these transformers especially attractive for use with all types of electronic equipment.

## CONSTANT OUTPUT VOLTAGE

SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER  
TYPE 1



SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER  
TYPE 21



SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER  
TYPE 22



## FOR CHASSIS MOUNTING

Output capacities up to 15 VA, with output at either 6.3 volts or 115 volts. Both types are immersion proof and capable of tropical service. Type 12 furnished with separate condenser. Prices include condenser.



TYPE 11



TYPE 12

SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER  
TYPE 2



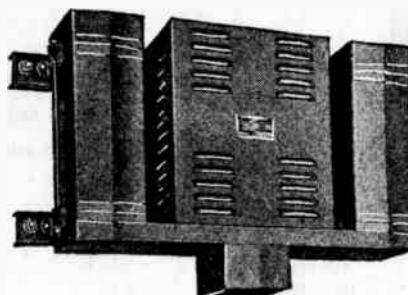
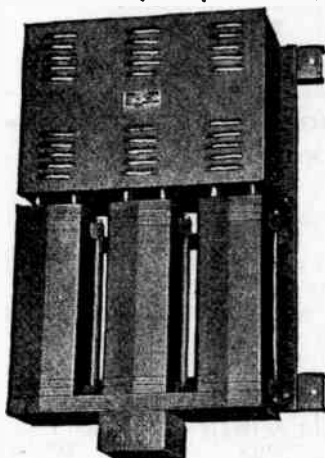
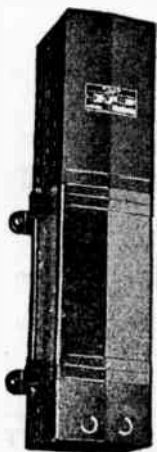
FOR COMPLETE CATALOG INFORMATION SEE OPPOSITE PAGE →

For complete operational data write for Bulletin 13CV-102

SOLA  
CONSTANT  
VOLTAGE  
TRANSFORMER

← TYPE 4

TYPE 6 →



SOLA CONSTANT VOLTAGE  
TRANSFORMERS

↑ TYPE 5

TYPE 41 →



**SO LA ELECTRIC COMPANY** • 4633 WEST 16th STREET, CHICAGO 50, ILLINOIS

# SO LA *Constant Voltage* TRANSFORMERS

## ELECTRICAL AND MECHANICAL SPECIFICATIONS

60 CYCLE

Catalog Number	Output Capacity in VA	Input Volts	Output Volts	Dimensions in Inches					Approx. Shipping Weight	Price Each
				A	B	C	E	F		
<b>TYPE 1</b>										
30488	15	95-125	6.0	5 $\frac{11}{16}$	2 $\frac{3}{8}$	3 $\frac{1}{16}$	5 $\frac{1}{16}$	....	6	\$ 15.00
30492	15	95-125	6.3	5 $\frac{11}{16}$	2 $\frac{3}{8}$	3 $\frac{1}{16}$	5 $\frac{1}{16}$	....	6	15.00
30498	15	95-125	115.0	5 $\frac{11}{16}$	2 $\frac{3}{8}$	3 $\frac{1}{16}$	5 $\frac{1}{16}$	....	6	15.00
<b>TYPE 2</b>										
30804	30	95-125	115.0	8 $\frac{9}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	7 $\frac{13}{16}$	2 $\frac{3}{8}$	12	17.00
30805	60	95-125	115.0	8 $\frac{13}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	8 $\frac{1}{16}$	2 $\frac{3}{8}$	13	24.00
30806	120	95-125	115.0	9 $\frac{11}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	8 $\frac{15}{16}$	2 $\frac{3}{8}$	17	32.00
30888	150	95-125	115.0	10 $\frac{3}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	9 $\frac{7}{16}$	2 $\frac{3}{8}$	19	40.00
<b>TYPE 3</b>										
30807	250	95-125	115.0	11 $\frac{5}{8}$	6 $\frac{15}{16}$	5 $\frac{5}{8}$	3 $\frac{1}{4}$	6 $\frac{1}{8}$	30	52.00
30M807	250	190-250	115.0	11 $\frac{5}{8}$	6 $\frac{15}{16}$	5 $\frac{5}{8}$	3 $\frac{1}{4}$	6 $\frac{1}{8}$	30	52.00
30808	500	95-125	115.0	14 $\frac{1}{2}$	6 $\frac{15}{16}$	5 $\frac{5}{8}$	5	6 $\frac{1}{8}$	40	75.00
30M808	500	190-250	115.0	14 $\frac{1}{2}$	6 $\frac{15}{16}$	5 $\frac{5}{8}$	5	6 $\frac{1}{8}$	40	75.00
<b>TYPE 4</b>										
30809	1000	95-125	115.0	19 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	115	125.00
30M809	1000	190-250	115.0	19 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	115	125.00
30811	2000	95-125	115.0	31 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	205	225.00
30M811	2000	190-250	115.0	31 $\frac{1}{8}$	9 $\frac{1}{2}$	7 $\frac{7}{8}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	205	225.00
<b>TYPE 5</b>										
30M814	4000	95 /190-125 /250	115.0	21 $\frac{5}{8}$	42 $\frac{3}{4}$	9 $\frac{9}{16}$	12 $\frac{1}{4}$	40 $\frac{1}{4}$	520	380.00
30M815	5000	95 /190-125 /250	115.0	24 $\frac{1}{8}$	42 $\frac{3}{4}$	9 $\frac{9}{16}$	14 $\frac{3}{4}$	40 $\frac{1}{4}$	570	475.00
30M816	5000	95 /190-125 /250	230.0	24 $\frac{1}{8}$	42 $\frac{3}{4}$	9 $\frac{9}{16}$	14 $\frac{3}{4}$	40 $\frac{1}{4}$	570	475.00
<b>TYPE 6</b>										
301700	10,000	190 /380-250 /500	115.0	48	35 $\frac{1}{4}$	9 $\frac{5}{8}$	38 $\frac{7}{8}$	33 $\frac{1}{4}$	1025	930.00
301701	10,000	190 /380-250 /500	230.0	48	35 $\frac{1}{4}$	9 $\frac{5}{8}$	38 $\frac{7}{8}$	33 $\frac{1}{4}$	1025	930.00
<b>TYPE 11</b>										
30785	17	95-125	6.3	5 $\frac{13}{16}$	3 $\frac{21}{32}$	2 $\frac{19}{32}$	3	2	5 $\frac{1}{2}$	20.00
30955	17	95-125	115.0	5 $\frac{13}{16}$	3 $\frac{21}{32}$	2 $\frac{19}{32}$	3	2	5 $\frac{1}{2}$	20.00
<b>TYPE 12</b>										
301002	15	95-125	6.3	5 $\frac{5}{16}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3	1 $\frac{1}{2}$	2 $\frac{1}{2}$	18.50
301003	15	95-125	115.0	5 $\frac{5}{16}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	3	1 $\frac{1}{2}$	2 $\frac{1}{2}$	18.50
<b>TYPE 21</b>										
30801	25	95-125	6.0	8 $\frac{7}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	7 $\frac{1}{16}$	2 $\frac{3}{8}$	12	16.00
30881	25	95-125	6.3	8 $\frac{1}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	7 $\frac{1}{16}$	2 $\frac{3}{8}$	12	16.00
30802	50	95-125	6.0	8 $\frac{13}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	8 $\frac{1}{16}$	2 $\frac{3}{8}$	13	22.00
30882	50	95-125	6.3	8 $\frac{13}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	8 $\frac{1}{16}$	2 $\frac{3}{8}$	13	22.00
<b>TYPE 22</b>										
30885	60	95-125	115.0	10 $\frac{5}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	9 $\frac{9}{16}$	2 $\frac{3}{8}$	13	24.00
30886	120	95-125	115.0	11 $\frac{3}{16}$	4 $\frac{3}{16}$	4 $\frac{3}{8}$	10 $\frac{7}{16}$	2 $\frac{3}{8}$	19	32.00
<b>TYPE 41</b>										
30M813	3000	95 /190-125 /250	115.0	44 $\frac{11}{16}$	10	9 $\frac{3}{8}$	42 $\frac{5}{8}$	8 $\frac{1}{2}$	325	300.00

**DIMENSIONS--** A: OVERALL LENGTH  
B: OVERALL WIDTH

C: OVERALL HEIGHT  
E&F: MOUNTING DIMENSIONS

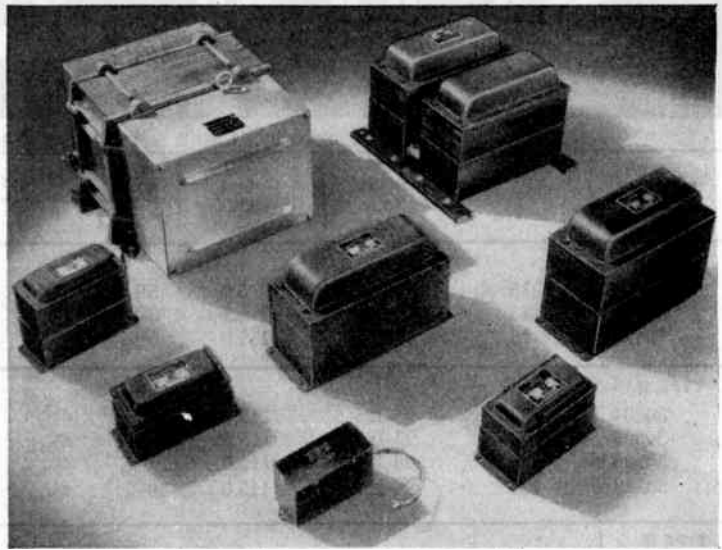
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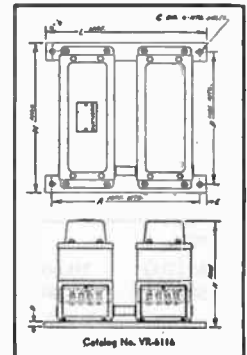
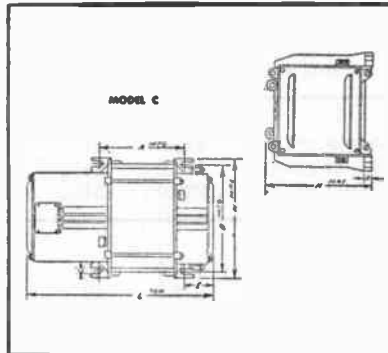
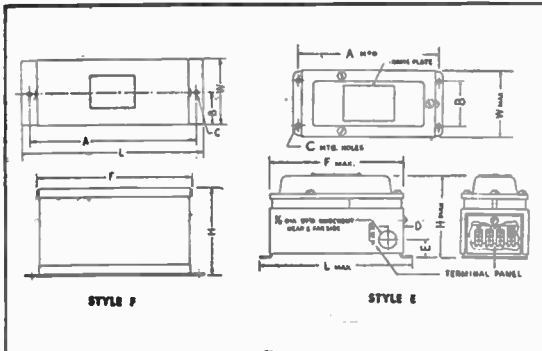


# VOLTAGE STABILIZERS

Available in standard catalog models, the Raytheon Stabilizer can be incorporated into any equipment or used as an accessory. All models will operate on an input of 95 to 130 volts, 60 cycles, single phase with an output of 115 volts stabilized to  $\pm 1/2\%$ . The Catalog No. VR-7B, which is a dual purpose unit rated at 2000 watts, will also operate on an input of 190 to 260 volts and an output of 230 volts stabilized to  $\pm 1/2\%$ . Change-over is by means of links and is easily and quickly done.



The complete line of catalog models shown above includes (upper left) Style C, No. VR-7B, 2000 watts only (upper right) Style H, No. VR 6116, 1000 watts (lower center) Style F, No. VR 6110, 15 watts only (all other models) Style E rated at 30 to 500 watts as outlined in table below. Special custom made models are available to meet every requirement.



## NOTE THESE FEATURES

- Patented magnetic-type stabilizer
- Constant AC output voltage ( $\pm 1/2\%$ )
- Wide AC input voltage limits ( $\pm 15\%$ )
- Quick response—stabilizes varying input voltage within 1/20 second
- Entirely automatic — no moving parts
- Compact, light in weight, takes little space
- Ruggedly built — safe at over-loads
- Designs are available in ratings from 5 to 10,000 watts

CATALOG NO.	OUTPUT CAP. WATTS	STYLE	DIMENSIONS IN INCHES									NET WEIGHT LBS.
			OVERALL			MOUNTING			LOCATIONS			
			L	W	H	A	B	C	D	E	F	
VR-6110	15	F	6 1/4	2 1/2	3	5 11/16	1 1/4	1/4 dia.	5/16	3/16	5 3/16	4
VR-6101*	30	E	7 1/2	3 3/8	4 1/8	6 7/8	2 1/4	9-32x7/32	11/16	7/8	6 9/16	5
VR-6111	30	E	7 1/2	3 3/8	4 1/8	6 7/8	2 1/4	9/32x7/32	11/16	7/8	6 9/16	5
VR-6112	60	E	7 1/2	3 3/8	4 9/16	6 7/8	2 1/4	9/32x7/32	11/16	7/8	6 9/16	8
VR-6113	120	E	7 1/2	3 3/8	5 15/16	6 7/8	2 1/4	9/32x7/32	11/16	7/8	6 9/16	14
VR-6114	250	E	12 3/8	5	7 5/8	11 9/16	3 1/2	9/32x11/32	7/8	1	11 1/16	25
VR-6115	500	E	12 3/8	5	9 1/8	11 9/16	3 1/2	9/32x11/32	7/8	1	11 1/16	45
VR-6116	1000	H	14 1/16	13 3/16	9 5/8	12 7/8	11 9/16	7/16	1/2	9/16		92
VR-7B	2000	C	16 3/8	14 7/8	12 3/8	8	13 5/8	1/2	1	2 11/16		200

Output 6.0 or 7.5 volts stabilized to  $\pm 1/4\%$ . Style "E" Voltage Stabilizers up to and including model VR 6113 are available with cord and plug, factory installed. Simply order by adding letters "CP" to catalog number. On the VR-6114 and VR-6115, a separate cord, plug and mounting plate can be supplied as an accessory. Order assembly 51-590G2.

## RAYTHEON MANUFACTURING COMPANY

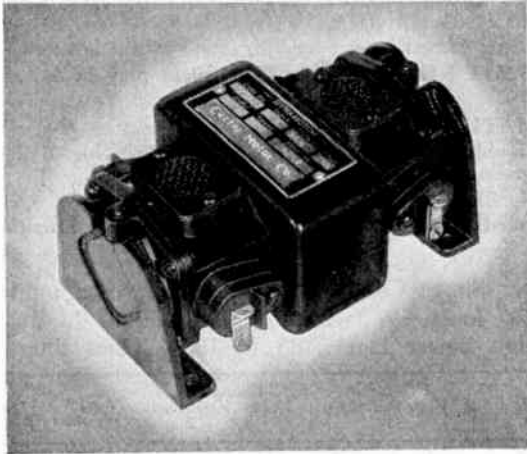
DEPARTMENT 6460 RM, WALTHAM 54, MASSACHUSETTS

*Magmotor*

# Carter

*Genemotor*

**THE CARTER MAGMOTOR FOR  
POLICE - TAXICAB - MARINE AND  
AIRCRAFT RADIO RECEIVERS  
GEOPHYSICAL AND RESEARCH  
ELECTRONIC EQUIPMENT**



CARTER MAGMOTOR—5 $\frac{5}{8}$ " LONG, 3-11/16" WIDE,  
2 $\frac{1}{2}$ " HIGH, WEIGHT 4 $\frac{3}{4}$  LBS.

Code No.	DC Input Volts	DC Input Amps	DC Output Volts	DC Output MA	Duty	List Price
MV1865	5.5	5	180	65	Con.	\$47.00
MA250	6	4.3	250	50	Con.	\$48.50
MV280	5.5	5.8	200	80	Con.	\$48.50
MA265	6	5.4	250	65	Con.	\$49.00
MA251	6	8	250	100	Con.	\$50.50
MB251	12	3.8	250	100	Con.	\$53.00
MA301	6	9.5	300	100	Con.	\$51.00
MB301	12	4.6	300	100	Con.	\$53.50
MA351	6	10.3	350	100	Con.	\$52.00
MAS355	6	15	350	150	Int.	\$53.00
MAS320	6	19	300	200	Int.	\$55.00
MVS415	5.5	19	400	150	Int.	\$57.50
MBS415	12	8.5	400	150	Int.	\$57.50

**AC AND DC GENERATORS—**

The Magmotor is available on special order for AC output up to 220 volts at 120 cycles. DC output up to 400 volts 30 watts continuous, 50 intermittent, depending upon armature speed.

**EXTENDED SHAFTS—**

Available on all Magmotor models add "S" to end of code number and \$5.00 to list.

**FILTERS—**

Any of the above Carter Genemotors or Magmotors can be furnished with complete filter mounted in metal box mounted below unit. Add "X" to end of code number and following prices. 1 $\frac{1}{2}$ " and 2" Frame Genemotor models and Magmotors, \$24.00 list, 3" Frame Genemotor models, \$25.00 list.

**STARTING RELAYS—**

Heavy Duty solenoid contactor starting relays are available for 5.5, 6, 12, 24, 28, 32 and 115 volt DC input. Add "R" to end of code number and \$12.00 to list price (Relay draws 1.3 amps at 6 volts). Seldom required on low power Magmotors.

*See replacement parts reference chart page for other special models, parts and prices.*

**THE ORIGINAL CARTER GENEMOTOR  
FOR POLICE - TAXICAB -  
MARINE AND  
SMALL AIRCRAFT  
MOBILE COMMUNICATIONS**



3" FRAME GENEMOTOR—7 $\frac{1}{8}$ " LONG, 4 $\frac{1}{8}$ " WIDE,  
3 $\frac{1}{2}$ " HIGH, WEIGHT 10 LBS.

Code No.	DC Input Volts	DC Input Amps	DC Output Volts	DC Output MA	Duty	List Price
420A	6.0	23.4	400	200	Con.	\$57.50
420V	5.5	25	400	200	Con.	\$60.00
425BS	12.0	12.8	400	225	Int.	\$59.50
450AS	6.0	28	400	250	Int.	\$58.00
4037AS	6.0	41	400	375	Int.	\$68.00
4228VS	5.5	35	420	280	Int.	\$64.50
4228VSC	5.8	33	420	280	Int.	\$66.00
520AS	6.0	28	500	200	Int.	\$59.00
520VS	5.5	31	500	200	Int.	\$61.50
5925AS	6.0	42	590	250	Int.	\$70.00
617V	5.5	30	600	170	Int.	\$60.00
620AS	6.0	29.5	600	200	Int.	\$64.50
624VS	5.5	46	600	240	Int.	\$67.80
650AS	6.0	39.0	600	250	Int.	\$67.80

**2" Frame Genemotor—**

6 $\frac{1}{8}$ " long, 4 $\frac{1}{8}$ " wide, 3 $\frac{1}{2}$ " high, weight 8 lbs.

355V	5.5	18.0	350	150	Con.	\$54.50
355A	6.0	16.4	350	150	Con.	\$52.00
415V	5.5	20.0	400	150	Con.	\$56.50
415A	6.0	18.2	400	150	Con.	\$54.00

**1 $\frac{1}{2}$ " Frame Genemotor—**

5-9/16" long, 4 $\frac{1}{8}$ " wide, 3 $\frac{1}{2}$ " high, weight 7 lbs.

210A	6	6	200	100	Con.	\$44.00
251A	6	7.9	250	100	Con.	\$47.00
351A	6	10.9	350	100	Con.	\$49.00

**FILTERS — STARTING RELAYS**

**DUTY RATINGS—**

Intermittent duty shall be considered 10 seconds on 20 seconds off. Continuous duty is considered 24 hours per day.

**INPUT VOLTAGES—**

Any Carter Genemotor or Magmotor can be supplied for special input voltages other than 6 volts. For 5.5, 12, 24, 28, 32 or 64 volt input add \$2.50 to list. For 115 volt DC input add \$3.50 to list.

**LINE-O-LIFE\* BRUSHES—**

All Carter products equipped with exclusive "LINE-O-LIFE" Brushes. Takes guess work out of brush replacements.

\* Pat. Pending.



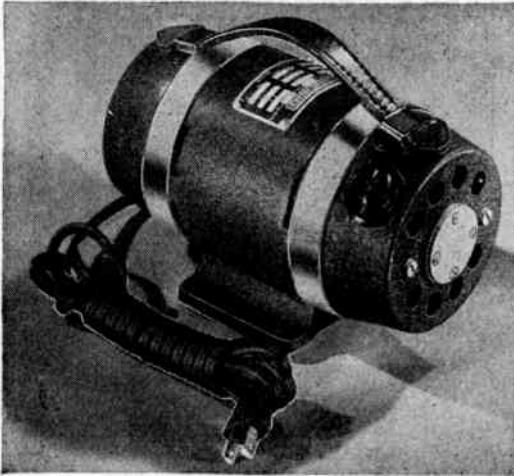
# Carter

## Super Converter

The oldest name in Rotary Power Supplies for Mobile Radio

**CARTER SUPER CONVERTER—Changes DC to AC for**

**Amplifiers - Radios - High Power Factor equipment**



CARTER SUPER CONVERTER, LESS FILTER, 8 1/4" LONG, 4 1/2" WIDE, 5" HIGH, WEIGHT 13 LBS.

Wherever DC to AC Conversion is necessary, the Carter Super Converter provides an efficient and reliable source of AC power. Standard models are designed for high power factor, non-inductive AC loads such as amplifiers, radio receivers, (requires filtered converter), etc. Ball bearing equipped, 3600 RPM. CAUTION: Standard Super Converters will not satisfactorily operate inductive loads such as AC motors, low power factor transformers, etc.

Manually operated frequency controlled Converters available on special order. Maintain 60 cycle output with a + or - 10% input voltage fluctuation.

Special custom-matched Converters are also available for Wire and Tape Recorders, Sound Projectors, 7" Television Receivers, etc. See Carter Selector Chart on next page.

Overall efficiency 60% AC voltage regulation 15%.

### HEAVY DUTY SUPER CONVERTER

10 1/4" long, 4 1/2" wide, 5" high, weight 19 lbs.

Code No.	DC Input Volts	DC Input Amps	AC Output Volts	60 cy. (Watts)	Type Duty	List Price
K1020C	230	1.3	115	200	Con.	\$84.00
K1025C	230	1.6	115	250	Con.	89.00
D1020C	115	2.6	115	200	Con.	74.00
D1025C	115	3.2	115	250	Con.	79.00
H1020C	64	4.8	115	200	Con.	76.50
H1025C	64	5.3	115	250	Con.	81.50
C1020C	32	10	115	200	Con.	76.50
C1025C	32	12	115	250	Con.	81.50
J1020C	28	12	115	200	Con.	76.50
J1025C	28	14	115	250	Con.	81.50
E1020C	24	15	115	200	Con.	76.50
E1025C	24	19	115	250	Con.	81.50
B1020C	12	30	115	200	Con.	76.50
B1025C	12	34	115	250	Con.	81.50

### OUTSTANDING FEATURES

**SMALL SIZE**—Smallest Rotary Converter. Lightweight.

**CARRYING HANDLE**

Easier to carry, no more "juggling" with a hot unit.

**OUTPUT RECEPTACLE**—Convenient plug in AC outlet.

**ARMATURE**

Double wound, insulated ungrounded winding. Built-in cooling fan.

**BALL BEARINGS**

Sealed ball bearings require no lubrication or attention.

### SPECIFICATIONS

Carter Super Converter, 40 to 150 watts models

8 1/4" long, 4 1/2" wide, 5" high, weight 13 lbs.

High power factor, 85 to 100%. Less filter.

Code No.	DC Input Volts	DC Input Amps	AC Output Volts	60 cy. Volt-Amps (Watts)	Type Duty	List Price
K1040C	230	.36	115	40	Con.	\$68.00
K1060C	230	.5	115	60	Con.	68.50
K1080C	230	.6	115	80	Con.	69.00
K1010C	230	.8	115	100	Con.	70.00
K1015C	230	1.	115	150	Con.	75.00
D1040C	115	.7	115	40	Con.	\$58.00
D1060C	115	1	115	60	Con.	58.50
D1080C	115	1.1	115	80	Con.	59.00
D1010C	115	1.7	115	100	Con.	60.00
D1015C	115	2.0	115	150	Con.	65.00
H1040C	64	1.5	115	40	Con.	60.50
H1060C	64	2	115	60	Con.	61.00
H1080C	64	2.2	115	80	Con.	61.50
H1010C	64	2.5	115	100	Con.	62.50
H1015C	64	3.4	115	150	Con.	67.50
C1040C	32	3	115	40	Con.	60.50
C1060C	32	4	115	60	Con.	61.00
C1080C	32	5	115	80	Con.	61.50
C1010C	32	5.5	115	100	Con.	62.50
C1015C	32	7.4	115	150	Con.	67.50
J1040C	28	3	115	40	Con.	60.50
J1060C	28	4	115	60	Con.	61.00
J1080C	28	5.2	115	80	Con.	61.50
J1010C	28	7	115	100	Con.	62.50
J1015C	28	9	115	150	Con.	67.50
E1040C	24	3.5	115	40	Con.	60.50
E1060C	24	4.3	115	60	Con.	61.00
E1080C	24	6	115	80	Con.	61.50
E1010C	24	8.3	115	100	Con.	62.50
E1015C	24	10	115	150	Con.	67.50
B1040C	12	8	115	40	Con.	60.50
B1060C	12	10	115	60	Con.	61.00
B1080C	12	14	115	80	Con.	61.50
B1010C	12	15	115	100	Con.	62.50
B1015C	12	23	115	150	Con.	67.50
A1040C	6	15	115	40	Con.	60.50
A1060C	6	19	115	60	Con.	61.00
A1080C	6	25	115	80	Con.	61.50
A1010C	6	27	115	100	Con.	62.50
A1015C	6	40	115	150	Con.	67.50

**FILTERS**—Available on all Super Converters. Eliminates Converter noise on most frequencies from 560 KC to 54 MC. Filter mounted in cast aluminum housing below Converter. Add "X" to Code Number and \$25.00 to list.

**FREQUENCY CONTROL**—Manually operated frequency control available on all models. Complete with vibrating reed meter, and rheostat control in aluminum housing. Add \$60.00 to list.

**VOLTAGE-FREQUENCY**—220 volt output or 50 cycle available on special order. Add \$5.00 to list for each.

See Carter Selector Chart for Wire and Tape recorder, 7" Television receivers, etc., custom-matched Converters.

# Carter

## Selector Chart

The oldest name in Rotary Power Supplies for Mobile Radio

Whenever DC to AC Rotary Converters are used to power wire or tape recorders and other similar recording equipment, output frequency must be perfectly matched to assure proper playback performance. All of the equipment listed has been laboratory-tested and Carter Converters custom-designed for each model. Use this Chart to select the Converter designed for each model. Prices of Selector Chart Converters are the same as standard models of similar code number.

Code letter "W" indicates a recorder type Converter.

Average efficiency 60%. Voltage regulation 15%. 70% Power Factor on wire and tape recorder models. Converters require NO FILTER, except when recorders have radio receivers.

### CARTER CUSTOM MATCHED 70% P.F. SUPER CONVERTERS WIRE and TAPE RECORDERS

EQUIPMENT MAKE & MODEL	CARTER CONVERTER MODEL AND DC INPUT			Size & Weight
	6 Volt	12 Volt	115 Volt	
Air King #750 Ampro #730 Crescent C-1000A Harrison Knight Wire Webster 7-78-80 Webster 178-180 Wilcox-Gay Recordio #8U-12 WireWay	A1060CW (29 amps drain)	B1060CW (14 amps drain)	D1060CW (1 amp drain)	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
Pentron Astrasonic #748-C2 Wiretone MR-6 (These Converters equipped with filter to operate radio section also)	A1060CW	B1060CW	D1060CW	8 1/4" L, 4 1/2" W, 7 1/2" H Wt. 15 lbs.
Bell Record-O-Fone RT-50 Crestwood CP201— Dukane Eicor #1000, #15 Knight Tape Peirce 55B- 260-265-270 Pentron #T-3 RCA Revere T-100 Sound Inc. Model 9T3	A1080CW (31 amps drain)	B1080CW (15 amps drain)	D1080CW (1.5 amps drain)	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
Bell RT-50R Ultratone PT-9	A1080CW	B1080CW	D1080CW	8 1/4" L, 4 1/2" W, 7 1/2" H Wt. 15 lbs.
Brush BK411-414	A1090CW4 (35 amps drain)	B1090CW4 (17 amps drain)	D1010CW (2 amps drain)	6 & 12 Volt 10 1/4" L, 4 1/2" W, 5" H Wt. 18 lbs.
Brush BK401-403 Magnecord PT6-P-PS and PT6-JA Masco R-3 MCA Dictascriber Sonograph BW100 Webster Racine Ekotape #101	A1010CW4 (35 amps drain)	B1010CW4 (17 amps drain)	D1010CW (2 amps drain)	115 Volt 8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
	A1010CW4	B1010CW4	D1012CW	

### CARTER CUSTOM MATCHED 90% P.F. SUPER CONVERTERS 16 MM SOUND PROJECTORS

EQUIPMENT MAKE & MODEL	CARTER CONVERTER MODELS DC INPUT			
	6 Volt	12 Volt	115 Volt	Size & Weight
Ampro Premier #20 Bell & Howell #179 DeVry Super #16 Victor Lite Weight Victor Triumph #60			D1015C	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.

### PORTABLE TRANSCRIPTION PLAYERS

Optron MC364D Victor Sonomaster	D1060C D1015C	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
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### SMALL AC PHONO MOTORS

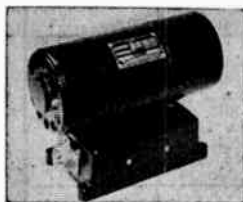
General Ind. RM4 G.I. Green Flyer Dual Speed	D1060CW	8 1/4" L, 4 1/2" W, 5" H Wt. 13 lbs.
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(These motors are of medium Power Factor design)

### 7"-10"-12" TELEVISION RECEIVERS

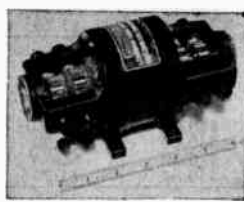
TELEVISION RECEIVER MAKE & MODEL	CARTER CONVERTER MODELS DC INPUT			
	6 Volt	12 Volt	115 Volt	Size & Weight
Admiral Hallicrafters T-54- 50S-T6S-507 Motorola VT71- Portable National TV-7, TV-7W Motorola 10" & 12" 1950 models only 130 watt power	A1010CT (27 amps drain)	B1010CT (13 amps drain)	D1010CT (1.7 amps drain)	Wt. 13 lbs. 8 1/4" L, 4 1/2" W, 5" H
	A1013CT (30 amps drain)	B1013CT (15 amps drain)	D1013CT (1.8 amps drain)	

## ★ Other Carter Products ★



### INDUCTOR ALTERNATOR

Provides mobile high frequency AC power (400 to 800 cycles), up to 100 watts, from DC source. Perfect for aircraft, geophysical, Government and laboratory research. Can also supply up to 400 v. DC plate voltage if necessary. Write for Bulletin No. 350.



### MULTI- MAGMOTOR

Ideal power for geophysical instruments, government and laboratory research, aircraft and mobile communications. Two, three and four commutator models with permag field, provide up to 3 output voltages from single input; 2 outputs from 1 or 2 inputs; or vice-versa, over wide range. Ask for Bulletin No. 450.



### SUPER- DYNAMOTOR

For aircraft, marine, police and railroad communications. Input voltages range from 5.5 v. DC to 115 v. DC . . . outputs from 400 v. to 1000 v. DC. Specified by leading airlines, marine, and mobile radio manufacturers. Size 8 1/4" x 4 1/2". Weight 11 3/4 lbs. Described in Catalog No. 649.



### WRITE FOR CATALOGS

Catalog No. 349 shows complete line Carter DC to AC Converters. Catalog No. 649 covers Dynamotor power supplies, magmotors, Genomotors. Both fully illustrated, contain full specifications, performance charts, etc. Write on your letterhead please.

# Carter

## Replacement Parts Reference Chart

The oldest name in Rotary Power Supplies for Mobile Radio

### REPLACEMENT PARTS REFERENCE CHART

Use this handy chart for ordering the correct CARTER Replacement Dynamotor or Replacement parts. All parts guaranteed to conform to original manufacturer's specifications.

Mfg. Model No.	Frequency	Carter Model No.	List Price	Carter Armature No.	Armature List Price	Input Brushes & List Per Set	Output Brushes & List Per Set	Ball Bearings & List Per Edcb
<b>Doelittle</b> PFY-2 PFY-2A PFY-3 PFY-3A PFY-12	30-40 MC-FM 152-162 MC-FM	4726VS 4726VS	\$62.50 \$62.50	233-2 233-2	\$30.00 \$30.00	No. 7 \$1.20 No. 7 \$1.20	No. 2 80c No. 2 80c	37KVL \$2.50
<b>Federal</b> FT-125-B-25AZ FT-110-25AZ FT-110-50AZ	152-162 MC-FM 30-44 MC-FM 30-44 MC-FM	4037AS 5915AS 5925AS	\$68.00 \$60.00 \$70.00	179-2 252-2 261-2	\$30.00 \$30.00 \$30.00	No. 7 \$1.20 No. 7 \$1.20 No. 7 \$1.20	No. 2 80c No. 2 80c No. 2 80c	37KVL \$2.50
<b>General Electric</b> MC202 MC-1 MC-2 MC-3	152-162 MC-FM 30-44 MC-FM 30-44 MC-FM	MVS415 Transmitter MA251 Receiver 617V 624VS	\$57.50 \$50.50 \$60.00 \$67.80	360-4 300-6 279-2 309-2	\$27.25 \$26.00 \$30.00 \$30.00	No. 18 \$1.20 No. 23 \$1.20 No. 7 \$1.20 No. 7 \$1.20	No. 9 80c No. 9 80c No. 2 80c No. 2 80c	37KVL \$2.50
<b>Harvey</b> 505 506 542	30-44 MC-FM 152-162 MC-FM	620VS 620VS	\$67.00 \$67.00	307-2 307-2	\$30.00 \$30.00	No. 7 \$1.20 No. 7 \$1.20	No. 2 80c No. 2 80c	37KVL \$2.50
<b>Kear</b> FM50X FM100X PTL-46X FM-175X	30-44 MC-FM 1600-6000 KC 152-162 MC-FM	6175VS early model 530VS late model VSF820 VSF820 4232VS	\$62.00 \$65.00 \$90.00 \$90.00 \$66.50	278-2 360-2 360-2 231-2	\$30.00 \$40.00 \$40.00 \$30.00	No. 7 \$1.20 No. 30 \$1.20 No. 30 \$1.20 No. 7 \$1.20	No. 2 80c No. 14 80c No. 14 80c No. 2 80c	37KVL \$2.50 38KVL \$2.50 37KVL \$2.50
<b>Mobile Communications (Taxi-Talkie)</b> MFM-25-150 MFM-25-150B	150-170 MC-FM 150-170 MC-FM	450AS 520AS	\$58.00 \$59.00	175-2 208-2	\$30.00 \$30.00	No. 7 \$1.20 No. 7 \$1.20	No. 2 80c No. 2 80c	37KVL \$2.50
<b>Motorola</b> P8050 P8051 P8051 P8661 P8317 P8431	30-44 MC-FM 30-44 MC-FM 30-44 MC-FM 152-162 MC-FM	617V 624VS VSF630 VSF6237 4228VS 4228VSC	\$60.00 \$67.80 \$86.50 \$58.50 \$64.50 \$66.00	279-2 309-2 276-2 303-2 207-2 195-2	\$30.00 \$30.00 \$40.00 \$40.00 \$30.00 \$30.00	No. 7 \$1.20 No. 7 \$1.20 No. 30 \$1.20 No. 7 \$1.20	No. 2 80c No. 2 80c No. 14 80c No. 2 80c	37KVL \$2.50 38KVL \$2.50 37KVL \$2.50
<b>RCA</b> M1-7771A M1-31514 M1-7772A	30-44 MC-FM 152-162 MC-FM 30-44 MC-FM	6175VS 3732VS VSF627	\$62.00 \$66.00 \$84.00	278-2 176-2 274-2	\$30.00 \$30.00 \$40.00	No. 7 \$1.20 No. 7 \$1.20 No. 30 \$1.20	No. 2 80c No. 2 80c No. 14 80c	37KVL \$2.50 38KVL \$2.50
<b>Radio Specialties Mfg. Co.</b> 1096-1-1		520AS	\$59.00	208-2	\$30.00	No. 7 \$1.20	No. 2 80c	37KVL \$2.50
<b>Wilcox Electric</b> 358A	152-162 MC-FM	4228VS	\$64.50	207-2	\$30.00	No. 7 \$1.20	No. 2 80c	37KVL \$2.50

Above Prices Subject to Distributor's Discount.



# TRANSFORMERS

## *For Electronic Equipment*

**FOR PROMPT,  
SATISFACTORY  
RESULTS . . .  
BRING YOUR  
TRANSFORMERS  
PROBLEMS TO GE**

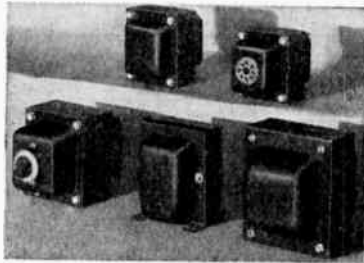
Plate  
Filament  
Plate and Filament  
Filter Reactors  
Pulse  
Audio  
Vertical Output  
Deflection Yokes  
Focus Coils

in

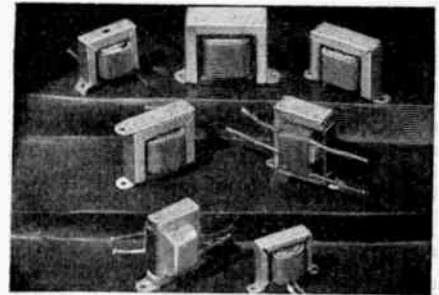
Core-and-coil  
Permafil  
Compound-filled  
and Hermetic  
Construction

for

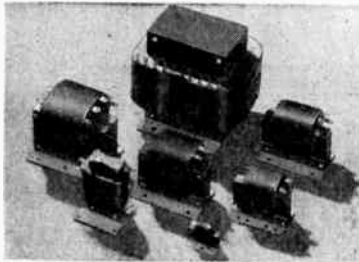
Radio  
Radar  
Television  
and Similar Equipment,  
Both Receiver and  
Transmitter



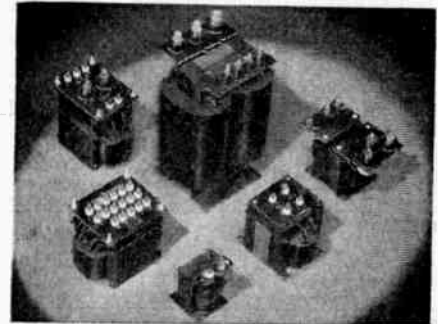
Radio receiver power transformer



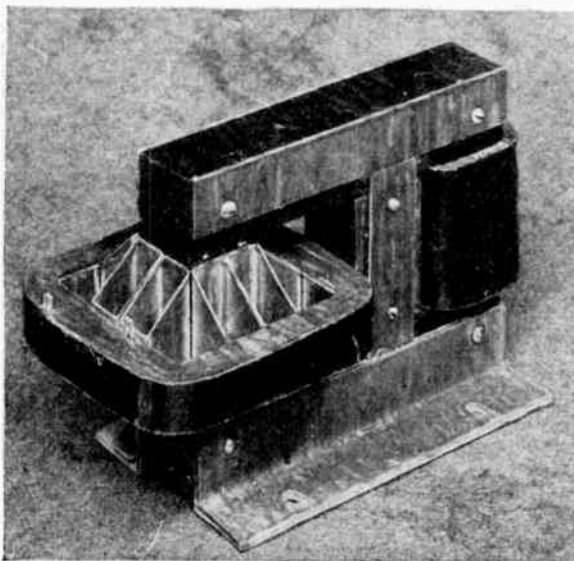
Output transformers and filter chokes



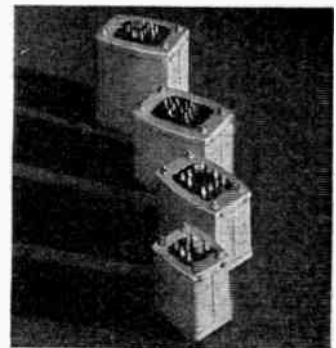
Permafil Type transformer



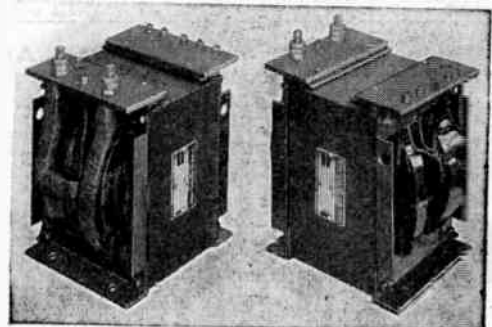
Core and coil type units



Special magnetron filament transformer



Standard compound filled transformers



Heavy duty, high reactance filament transformers

# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## STANCOR TELEVISION TRANSFORMERS AND RELATED COMPONENTS

### PLATE AND FILAMENT TRANSFORMERS

Stancor No.	Plate Supply		Rectifier Filament		Auxiliary Filaments		Dimensions			Mtg. Type	List Price
	AC Volts	DC Ma.	Volts	Amps.	Volts	Amps.	W	L	H		
<b>P-6011</b>	350-0-350	70	5.0 C.T.	3.0	6.3 C.T.	2.5	2½"	3"	3½"	M	<b>\$7.30</b>
<b>P-6312</b>	290-0-290	90	5.0 C.T.	3.0	6.3 C.T.	2.8	2½"	3½"	3½"	M	<b>8.40</b>
<b>P-6012</b>	350-0-350	90	5.0 C.T.	3.0	6.3 C.T.	3.5	2½"	3½"	3½"	M	<b>7.70</b>
<b>P-6013</b>	350-0-350	120	5.0 C.T.	3.0	6.3 C.T.	4.7	3½"	3½"	3½"	M	<b>8.55</b>
<b>P-6014</b>	375-0-375	150	5.0 C.T.	3.0	6.3 C.T.	5.0	3½"	3½"	3½"	M	<b>10.50</b>
<b>P-8059</b>	337.5-0-337.5	200	5.0 C.T.	3.0	6.3 C.T.	5.0	4¾"	4"	4¾"	C	<b>13.75</b>
<b>P-6165</b>	400-0-400	200	5.0 C.T.	4.0	6.3 C.T.	5.5	3¾"	4½"	4½"	M	<b>12.55</b>
<b>P-8154</b>	375-0-375	205	5.0	3.0	5.0	2.0	3¾"	4½"	4½"	M	<b>15.20</b>
					6.3	5.6					
This unit and Number P-8155 are designed to work together in TV chassis employing two separate power supply systems.											
<b>P-8155</b>	225-0-225	90	5.0	2.0	6.3	5.15	2½"	3½"	3½"	M	<b>8.90</b>
This unit and Number P-8154 are designed to work together in TV chassis employing two separate power supply systems.											
<b>P-8156</b>	365-0-365	295	5.0	6.0	5.0	2.0	3½"	4¾"	6½"	M	<b>25.50</b>
					12.6 C.T.	5.0					
Designed to deliver 405 volts DC at 295 ma. into an 80 mfd condenser input filter following two type 5U4-G tubes in a full-wave rectifier circuit. Copper shorting band reduces external magnetic field.											
<b>P-8157</b>	385-0-385	195	5.0	3.0	6.3	7.65	3½"	4½"	4½"	M	<b>21.00</b>
	235-0-235	105	5.0	2.0	6.3	0.6					
					5.0	2.0					
Designed for use with dual full-wave rectifiers and filters to supply two outputs simultaneously: 5U4-G (395 volts DC at 195 ma. across 40 mfd input) and 5Y3-GT (212 volts DC at 105 ma. across 40 mfd input).											
<b>P-8158</b>	117	600	.....	...	6.3	4.25	3½"	4½"	3½"	M	<b>12.40</b>
					6.3	4.0					
					6.3	2.0					
Designed to deliver 6.3 volts at 4.25 amperes, 6.3 volts at 4.0 amperes, 6.3 volts at 2.0 amperes and 117 volts at 600 ma. RMS. For use with selenium type rectifiers where all supply voltages are to be isolated from the line. A copper shorting band reduces external magnetic field.											
<b>P-8159</b>	360-0-360	250	5.0	3.0	5.0	2.0	3½"	4¾"	5½"	M	<b>18.95</b>
					6.3	8.0					
					6.3	0.6					
Designed to deliver 355 volts DC at 250 ma. into a 40 mfd condenser input filter following a type 5U4-G full-wave rectifier. Copper shorting band reduces external magnetic field.											
<b>P-8160</b>	360-0-360	185	5.0	3.0	6.45	12.0	3½"	4½"	4½"	M	<b>16.80</b>
	165-0-165	65									
Designed for use with dual full-wave rectifiers and filters to supply two outputs simultaneously: 5U4-G (382 volts DC at 185 ma. across 40 mfd input) and 6X5 (155 volts DC at 65 ma. across 30 mfd input).											

### AUDIO OUTPUT TRANSFORMERS

Stancor No.	Application	Max. Pri. DC	Max. Audio Watts	Dimensions			Mtg. Type	List Price
				H	W	D		
<b>A-3878</b>	Single plate, 7,000 ohms, to 4 ohms voice coil	30 ma.	5	1½"	2¾"	1½"	A	<b>\$1.80</b>
<b>A-8114</b>	Single plate, 7,600 ohms, to 3.2 ohms voice coil	32 ma.	5	1½"	2¾"	1½"	A	<b>1.65</b>
<b>A-3877</b>	Single plate, 5,000 ohms, to 4 ohms voice coil	40 ma.	5	1½"	2¾"	1½"	A	<b>1.85</b>
<b>A-3330</b>	Single plate, 2,000 ohms, to 3.5 ohms voice coil	50 ma.	5	1½"	2¾"	1½"	A	<b>2.10</b>
<b>A-3876</b>	Single plate, 2,000 ohms, to 4 ohms voice coil	60 ma.	5	1½"	2¾"	1½"	A	<b>1.75</b>
<b>A-3825</b>	Single plate, 1,500-4,500 ohms, to voice coil	75 ma.	8	2"	3¼"	1½"	Q	<b>3.25</b>
<b>A-2313</b>	Single plate, 7,000 ohms, to 8 ohms voice coil	40 ma.	10	2"	3¼"	1½"	A	<b>2.70</b>
<b>A-3849</b>	Single plate, 1,500-10,000 ohms, to voice coil	55 ma.	10	1½"	2¾"	1½"	Q	<b>2.60</b>
<b>A-3856</b>	Single or push-pull plates, 4,000-14,000 ohms, to voice coil	35 ma.	4	1½"	2¾"	1½"	Q	<b>2.60</b>
<b>A-3823</b>	Single or push-pull plates, 4,000-14,000 ohms, to voice coil	40 ma.	8	1½"	2¾"	1½"	Q	<b>2.75</b>
<b>A-3850</b>	Single or push-pull plates, 4,000-14,000 ohms, to voice coil	40 ma.	8	2"	2¾"	1½"	J	<b>2.95</b>
<b>A-3824</b>	Single or push-pull plates, 6,000-10,000 ohms, to voice coil	75 ma.	8	2"	3¼"	2"	Q	<b>4.10</b>
<b>A-3852</b>	Push-pull plates, 4,000-14,000 ohms, to voice coil	40 ma.	18	2½"	2¾"	2"	J	<b>3.55</b>
<b>A-3303</b>	Push-pull plates, 14,000 ohms, to 500/15/8/4 ohms line or voice coil	55 ma.	20	3½"	2¾"	2¾"	C	<b>7.00</b>

### FILAMENT TRANSFORMERS

Stancor No.	Secondary		RMS V. Insul.	Primary Volts	Mtg. Type	Dimensions			List Price
	Volts	Amps.				H	W	D	
<b>P-6134</b>	6.3 C.T.	1.2	2500	117	A	1½"	2¾"	1½"	<b>\$2.65</b>
<b>P-5614</b>	6.3 C.T.	3.0	2500	117	B	3½"	2½"	2½"	<b>4.50</b>



N



TD



A



C



M



DY



FC



HO



HT



# TRANSFORMERS

REACTORS      POWER PACKS      TRANSMITTERS

## STANCOR TELEVISION TRANSFORMERS (Cont.)

### FILTER CHOKES

Stancor No.	Rating	DC Res. in Ohms	RMS V. Insul.	Mtg. Type	Dimensions			List Price
	Induc. @ DC Ma.				H	W	D	
C-1080	3.5 hy. @ 50 ma.	200	1500	A	1 $\frac{3}{8}$ "	2 $\frac{3}{8}$ "	1 $\frac{1}{2}$ "	\$1.70
C-1215	9.0 hy. @ 50 ma.	500	1500	A	1 $\frac{5}{8}$ "	2 $\frac{1}{8}$ "	1 $\frac{1}{2}$ "	1.75
C-1703	9.0 hy. @ 85 ma.	250	1500	A	2"	3 $\frac{1}{4}$ "	2"	2.75
C-2303	2.5 hy. @ 130 ma.	100	2000	A	2"	3 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	2.50
C-2304	2.3 hy. @ 150 ma.	60	1500	A	2"	3 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	2.60
C-2309	3.0 hy. @ 150 ma.	90	2000	A	2 $\frac{1}{4}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	2.80
C-1410	4.0 hy. @ 175 ma.	100	3000	C	3 $\frac{5}{8}$ "	2 $\frac{5}{8}$ "	2 $\frac{5}{8}$ "	5.10
C-2325	2.0 hy. @ 200 ma.	60	1500	A	2 $\frac{1}{4}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	2.90
C-1646	5.0 hy. @ 200 ma.	90	5000	C	4"	3 $\frac{1}{4}$ "	3 $\frac{5}{8}$ "	7.30
C-1721	8.5 hy. @ 200 ma.	120	3000	N	3 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	3"	6.30
C-1703	4.0 hy. @ 250 ma.	60	3000	B	3 $\frac{1}{2}$ "	2 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "	6.95
C-2326	1.0 hy. @ 300 ma.	48	1500	A	2 $\frac{1}{4}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	2.90

### HORIZONTAL BLOCKING-OSCILLATOR TRANSFORMERS

Stancor No.	Application	Mtg. Type	Dimensions			List Price
			H	W	D	
A-8110	Replacement for RCA Type 208T3	A	1 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	\$2.75
A-8120	Replacement for RCA Type 208T1	TD	1 $\frac{3}{4}$ "	2 $\frac{5}{16}$ "	1 $\frac{1}{2}$ "	3.90

### VERTICAL BLOCKING-OSCILLATOR TRANSFORMERS

Stancor No.	Application	Mtg. Type	Dimensions			List Price
			H	W	D	
A-8111	Generates 60 cps pulse to drive grids of vertical discharge tubes	A	1 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	\$2.50
A-8121	Replacement for RCA Type 208T2	TD	1 $\frac{3}{4}$ "	2 $\frac{1}{16}$ "	1 $\frac{1}{2}$ "	3.20

### VERTICAL DEFLECTION OUTPUT TRANSFORMERS

Stancor No.	Turns Ratio Pri. to Sec.	Dimensions			Mtg. Type	List Price
		H	W	D		
A-8112	10:1	2"	3 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	A	\$3.40
A-8113	8.8:1	2"	3 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	A	3.45
A-8115	10:1	3 $\frac{1}{16}$ "	2 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "	A	6.00
A-8116	10:1	3 $\frac{1}{16}$ "	2 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "	A	4.40

### HORIZONTAL DEFLECTION OUTPUT AND HIGH VOLTAGE TRANSFORMERS

Stancor No.	Application	Dimensions			Mtg. Type	List Price
		H	W	D		
A-8117	Replacement for RCA Type 211T1. For use with direct viewing kinescopes such as types 7DP4 and 10BP4.	4 $\frac{11}{16}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	HT	\$7.00
A-8127	Replacement for RCA Type 211T3. For use in pulse-operated, single rectifier power supply and provides 5-10% more deflection than RCA Type 211T1. For new circuits employing the 10BP4 kinescope.	4 $\frac{11}{16}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	HT	7.00
A-8128	Fills the need for a transformer between the 10" and 16" sizes. Will develop 10,000 to 12,000 volts of anode potential with adequate sweep for full horizontal scan of a 12 $\frac{1}{2}$ " tube such as the 12LP4. Also used for conversion to a 10" picture, using the 16AP4 and similar tubes at a slightly reduced brightness. Mounting identical with RCA type 211T1.	4 $\frac{11}{16}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	HT	9.50
A-8119	Replacement for RCA Type 211T5. For use in pulse-operated power supply requiring two rectifiers in a voltage-doubling circuit to deliver 13,000 to 14,000 volts to the anode of a kinescope such as the 16AP4.	4 $\frac{11}{16}$ "	3 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	HT	9.50

### DEFLECTION YOKE

Stancor No.	Application	Mtg. Type	List Price
DY-1	Designed for use with direct viewing kinescopes requiring up to 50° magnetic deflection. Replacement for RCA Type 201D1.	DY	\$7.50

### FOCUS COIL

Stancor No.	Application	Mtg. Type	List Price
FC-10	Designed for use with direct viewing kinescopes requiring up to 50° magnetic deflection. Replacement for RCA Type 202D1.	FC	\$7.50





# TRANSFORMERS

REACTORS

POWER PACKS

TRANSMITTERS

Stancor's Universal Power Transformers represent the last word in efficient transformer construction. They are designed for compactness without sacrificing efficiency.

Four universal brackets permit their being mounted in either vertical or horizontal position. Transformers equipped with 8" flexible RMA color coded leads and static shields.

## Power Transformers—Universal Type

Stancor Number	No. of Tubes	Plate		Fil. No. 1		Fil. No. 2		Fil. No. 3		Mtg. Type	Mtg. Area	Mtg. Ctrs.	Wgt. in Ctn.	List Price
		V.C.T.	Ma.	V.	A.	V.	A.	V.	A.					
<b>UNIVERSAL TYPE—2.5 VOLT</b>														
P-6001	4-5	650	40	5.0-C.T.	2.0	2.5-C.T.	4.0	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.3	\$6.00
P-6002	5-6	700	50	5.0-C.T.	2.0	2.5-C.T.	7.25	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.3	7.00
P-6009	6-7	550	70	5.0-C.T.	2.0	5.0-C.T.	0.5	2.5-C.T.	10.5	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	4.2	9.00
P-6005	6-7	700	70	5.0-C.T.	2.0	2.5-C.T.	9.0	2.5-C.T.	3.5	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	5.4	7.75
P-6003	6-7	700	70	5.0-C.T.	2.0	2.5-C.T.	9.0	.....	.....	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	3.8	8.35
P-6004	8-9	700	90	5.0-C.T.	2.0	2.5-C.T.	12.5	.....	.....	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.4	7.75
P-6007	10-12	800	110	5.0-C.T.	3.0	2.5-C.T.	15.0	2.5-C.T.	3.5	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	6.3	10.25
P-6006	11-13	700	120	5.0-C.T.	3.0	2.5-C.T.	12.5	2.5-C.T.	3.5	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.9	10.60
<b>UNIVERSAL TYPE—6.3 VOLT</b>														
P-6289	6-5	420	40	5.0-C.T.	2.0	6.3-C.T.	2.0	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.1	\$7.00
P-6297	4-5	480	40	5.0-C.T.	2.0	6.3-C.T.	2.0	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.2	6.75
P-6010	4-5	650	40	5.0-C.T.	2.0	6.3-C.T.	2.0	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.3	5.75
P-6119	6-7	600	55	5.0-C.T.	2.0	6.3-C.T.	2.7	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.5	6.90
P-6120	7-9	630	70	5.0-C.T.	2.0	6.3-C.T.	3.5	.....	.....	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	5.2	7.70
P-6011	6-7	700	70	5.0-C.T.	2.0	6.3-C.T.	2.5	.....	.....	M	2 1/2" x 3"	2" x 2 1/2"	3.3	7.30
P-6312	7-8	580	90	5.0-C.T.	2.0	6.3-C.T.	2.8	.....	.....	M	3 1/8" x 2 1/8"	2 1/8" x 2 1/8"	5.4	8.40
P-6012	8-9	700	90	5.0-C.T.	2.0	6.3-C.T.	3.5	.....	.....	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	5.2	7.70
P-6013	11-13	700	120	5.0-C.T.	3.0	6.3-C.T.	4.7	.....	.....	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.3	8.55
P-6313	11-13	580	125	5.0-C.T.	3.0	6.3-C.T.	4.5	.....	.....	M	4 1/8" x 3 1/8"	3 1/8" x 2 3/8"	6.4	9.50
P-6014	13-15	750	150	5.0-C.T.	3.0	6.3-C.T.	5.0	.....	.....	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.8	10.50
P-6165	14-16	800	200	5.0-C.T.	4.0	6.3-C.T.	5.5	.....	.....	M	3 3/4" x 4 1/2"	3" x 3 3/4"	6.5	12.55
P-6314	14-16	700	200	5.0-C.T.	3.0	6.3-C.T.	5.5	.....	.....	M	4 1/8" x 3 3/8"	3 3/8" x 3"	7.7	12.30
P-6315	16-18	740	275	5.0-C.T.	3.0	6.3-C.T.	7.0	.....	.....	M	4 1/2" x 3 3/8"	3 3/8" x 3"	8.5	16.00
<b>UNIVERSAL TYPE—6.3 AND 2.5 VOLT COMBINATION</b>														
P-6293	6-7	600	60	5.0-C.T.	2.0	6.3-C.T.	2.5	2.5-C.T.	7.5	M	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	4.0	\$8.25
P-6295	8-9	700	90	5.0-C.T.	2.0	6.3, 2.5 C.T.	3.5	2.5-C.T.	9.0	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.7	10.25
P-6234	11-13	660	90	5.0-C.T.	2.0	2.5-C.T.	12.0	6.3, 5.0, 2.5-C.T.	4.0	M	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	5.9	12.50
Has an additional 2.5 V. at 1.75 A.C.T. winding														
P-6008	14-16	750	180	5.0-C.T.	3.0	6.3-C.T.	3.3	2.5-C.T.	6.0	M	3 1/8" x 4 1/8"	2 1/2" x 3 1/8"	6.5	11.65
<b>UNIVERSAL TYPE—WITH MOTOR TUNING WINDINGS</b>														
P-6290	11-13	700	120	5.0-C.T.	3.0	6.3-C.T.	4.7	50-24-18		M	3 3/4" x 3 1/4"	2 1/2" x 3 1/4"	5.4	\$10.75
P-6291	13-15	750	150	5.0-C.T.	3.0	6.3-C.T.	5.0	50-24-18		M	3 3/4" x 3 1/4"	3 1/8" x 2 1/2"	5.9	11.60

## Power Transformers—Half Shell Type

Stancor No.	No. of Tubes	Plate		Filament 1		Filament 2		Filament 3		Mounting Type	Mounting Area	Mtg. Ctrs.	Wgt. in Ctn.	List Price
		V.C.T.	Ma.	V.	A.	V.	A.	V.	A.					
<b>HALF SHELL WITH LUGS—2.5 VOLTS</b>														
P-2770	4-5	650	40	5.0	2.0	2.5-C.T.	4.5	.....	.....	G	2 1/2" x 3"	2" x 2 1/2"	2.5	\$7.25
P-2860	8-9	700	90	5.0	2.0	2.5-C.T.	3.5	2.5	9.0	G	3 1/8" x 4 1/8"	2 3/8" x 3 1/8"	5.2	10.00
<b>HALF SHELL WITH LUGS—6.3 VOLTS</b>														
P-2751	4	650	40	5.0	2.0	6.3-C.T.	1.6	.....	.....	G	2 1/2" x 3"	2" x 2 1/2"	2.2	\$7.00
P-2771	4-5	650	40	5.0	2.0	6.3-C.T.	2.0	.....	.....	G	2 1/2" x 3"	2" x 2 1/2"	2.5	7.00
P-947	4-5	700	50	5.0	2.0	6.3-C.T.	2.0	.....	.....	G	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	3.3	6.35
P-948	5-6	675	70	5.0	2.0	6.3-C.T.	2.5	.....	.....	G	3 1/8" x 3 3/8"	2 1/2" x 3 1/8"	4.7	7.85
P-949	7-10	700	120	5.0	3.0	6.3-C.T.	3.0	.....	.....	G	3 1/8" x 4 1/8"	2 3/8" x 3 1/8"	5.5	9.00
P-6336	6-8	600	150	5.0	3.0	6.3-C.T.	3.0	.....	.....	G	2 1/2" x 3 3/8"	2 1/2" x 2 1/8"	4.2	9.50
P-955	11-14	800	160	5.0	3.0	6.3-C.T.	4.5	.....	.....	G	3 3/4" x 4 1/2"	3" x 3 3/4"	6.5	10.75

All of the above transformers are for operation on 117 volts, 60 cycles.  
Other voltage and frequency combinations available on special order. Write for quotations.

## Tube Checker Transformer

Especially designed for use in modernizing older types of tube checkers. Ideal for other testing equipment and laboratory.

Stancor No.	Primary		Secondary Volts						Type Mounting	Dimensions			Weight in Carton	List Price
	Volts	Cycles	1.1	1.4	1.5	2.0	2.5	3.0		3.3	5.0	6.3		
P-1834-3	105, 115, 125	50-60	1.1, 1.4, 1.5, 2.0, 2.5, 3.0, 3.3, 5.0, 6.3, 7.0, 7.5, 12, 25, 30, 35, 50, 70, 85, 110, 117	A	2 3/8"	4 1/8"	2"	2.6	\$12.00					

All of the above power transformers are for operation on 117 volts, 60 cycles.  
Other voltage and frequency combinations available on special order. Write for quotations.



# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## Power Transformers—Fully Cased

Stancor No.	No. of Tubes	Plate		Fil. No. 1		Fil. No. 2		Fil. No. 3		Mtg. Type	Mtg. Area	Mtg. Ctrs.	Wgt. in Ctn.	List Price
		V.C.T.	Ma.	V.C.T.	A.	V.C.T.	A.	V.C.T.	A.					
<b>FULLY SHIELDED WITH LEADS—2.5 VOLTS</b>														
P-4842	6-7	700	70	5.0	2.0	2.5-C.T.	3.5	2.5	7.5	C	3 1/2" x 3"	2 1/2" x 1 1/2"	3.7	\$8.75
P-4943	8-9	700	90	5.0	2.0	2.5-C.T.	3.5	2.5	9.0	C	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	4.5	10.00
P-4844	10-12	700	110	5.0	3.0	2.5-C.T.	3.5	2.5	14.0	C	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	4.7	11.00
<b>FULLY SHIELDED WITH LEADS—6.3 VOLTS</b>														
P-4076	4-5	650	40	5.0	2.0	6.3-C.T.	2.0	.....	...	C	2 1/2" x 2 1/2"	2 1/2" x 1 1/2"	2.7	\$6.57
P-4877	5-6	700	50	5.0	2.0	6.3-C.T.	2.6	.....	...	C	3" x 2 1/2"	2 1/2" x 1 1/2"	3.2	7.50
P-4878	6-7	700	70	5.0	2.0	6.3-C.T.	3.0	.....	...	C	3 1/2" x 3"	2 1/2" x 1 1/2"	4.0	8.50
P-4079	8-9	700	90	5.0	2.0	6.3-C.T.	3.5	.....	...	C	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	4.9	9.50
P-4080	10-12	700	110	5.0	3.0	6.3-C.T.	4.5	.....	...	C	3 1/2" x 3 1/2"	3" x 2 1/2"	5.4	10.00
P-6143	8-9	880	130	5.0	3.0	6.3-C.T.	3.5	.....	...	C	3 1/2" x 4"	2 1/2" x 3"	5.0	12.25
P-4081	11-14	800	160	5.0	3.0	6.3-C.T.	4.5	.....	...	C	3 1/2" x 3 1/2"	3" x 2 1/2"	5.0	12.00
P-4004*	11-14	800	175	5.0	3.0	6.3-C.T.	2.5	6.3-C.T.	2.5	C	3 1/2" x 4 1/2"	3" x 2 1/2"	11.0	13.50
P-5089	11-14	675	200	5.0	3.0	6.3-C.T.	5.0	.....	...	C	3 1/2" x 4 1/2"	3" x 3 1/2"	10.0	13.75
P-6170	....	1200	200	5.0	3.0	6.3-C.T.	3.0	6.3-C.T.	4.0	C	3 1/2" x 4 1/2"	3" x 3 1/2"	13.3	13.50
<b>FULLY SHIELDED WITH LEADS—2.5 AND 6.3 OR 7.5 VOLT COMBINATION</b>														
P-4047	6-7	700	70	5.0	2.0	2.5-C.T.	9.0	6.3	3.0	C	3 1/2" x 3"	2 1/2" x 1 1/2"	3.7	\$9.00
P-4048	8-9	700	90	5.0	2.0	2.5-C.T.	10.0	6.3	3.5	C	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	5.0	10.50
P-4049	10-12	700	110	5.0	3.0	2.5-C.T.	14.0	6.3	4.5	C	3 1/2" x 3 1/2"	3" x 2 1/2"	5.3	11.75
P-3085†	10-12	720	125	5.0	3.0	2.5-C.T.	10.0	6.3-C.T.	4.0	C	3 1/2" x 3 1/2"	3" x 2 1/2"	5.5	13.50
P-4050*	11-14	800	160	5.0	3.0	2.5-C.T.	14.0	6.3	4.5	C	3 1/2" x 3 1/2"	3" x 2 1/2"	6.2	13.75

\* Has 80 V. bias tap and extra 2.5 V. 1.75A filament. † Has 80 V. bias tap and extra 5 V. 2A filament.

## FULLY SHIELDED WITH LEADS—1.5, 2.5 AND 5 VOLT COMBINATION

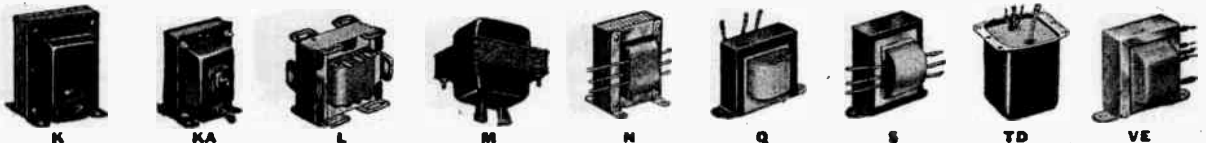
Stancor No.	Plate		Rectifier Filament		Filaments No. 1, 2		Filaments No. 3, 4		Mounting Type	Mounting Area	Mounting Ctrs.	Wgt. in Ctn.	List Price
	V.C.T.	Ma.	V.	A.	V.	A.	V.	A.					
P-1561	600	60	5.0	2.0	1.5-C.T.	1.0	1.5	4	C	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	5.0	\$10.50
P-1563	700	120	5.0	3.0	1.5-C.T.	1.0	1.5	5	C	4" x 3 1/2"	3 1/2" x 3 1/2"	7.5	13.75
P-1565	700	120	5.0	3.0	2.5-C.T.	4.0	2.5-C.T.	3.5	C	4" x 3 1/2"	3" x 3"	7.5	13.50

## Vibrator Transformers—Six Volt Universal

Stancor No.	Secondary		Type Mounting	Dimensions			Weight in Carton	List Price
	D.C. Volts to Filter Ma.			H	W	D		
P-6301	150	40	S	2 1/2"	2 1/2"	1 1/2"	1.3	\$4.50
P-4060	225	40	N	3 1/2"	2 1/2"	3"	2.2	4.90
P-4061	250	50	N	3 1/2"	2 1/2"	3"	2.3	5.25
P-4062	260	65	N	3 1/2"	2 1/2"	3"	2.6	5.75
P-4063	285	75	N	3 1/2"	2 1/2"	3 1/2"	3.0	6.50
P-6131	330	100	N	3 1/2"	2 1/2"	3 1/2"	3.5	7.00
P-6166	350 V @ 135 Ma. Fil. 6.3 V.C.T. @ 2.25 A		C	4 1/2"	3 1/2"	4"	9.0	12.65

## Automobile Radio Vibrator Transformers—Exact Duplicate Replacements

Stancor No.	Trade Name	Manufacturers Part Number	Manufacturers Service Number	Description	Year	List Price
P-4064	United Motors (Delco)	7240519	.....	Buick	1946-47	\$9.00
P-4065	United Motors (Delco)	7255881	.....	Cadillac, Chev., Olds., Pontiac	1946-47	8.50
P-6470	Regal (5-tube Univ. Series)	140-111	.....	140 V. @ 50 Ma. 2 1/2" H. x 2 1/2" W. x 2 1/2" D.	1946-47	6.00
P-6471	Motorola (408, 508, 608)	25B472533	.....	6 tube Ford	1946-47	6.25
P-6472	Colonial-Detrola #8072	D 71014	G 141-0004	Ford 8A-18805-A	1947-48	6.25
	Colonial-Bendix M1	C 217020	H 141-0004	Ford 8A-18805-A	1947-48	
	Colonial-Motorola	C 71014	J 141-0004	Ford-FD6, Nash	1947-48	
	Motorola 405, 505, 605, 705	25B70950	.....	Standard	1947-48	
P-6473	Zenith	95-1073	.....	Ford, Mercury, Lincoln 8-tube	1947-48	7.00
P-6474	Zenith	95-1066	.....	Hud-on	1947-48	7.00
P-6476	Colonial-Detrola #7070	D 70267	G 141-0001	Ford #51A-18805-B2	1947-48	6.25
	Colonial-Motorola—Detrola #8030	C 70267	J 141-0001	Whlys #67077	1947-48	







# TRANSFORMERS

REACTORS

POWER PACKS

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## Universal Output Transformers

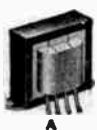
Stancor No.	Output Tubes	Impedance		D.C. Pri. M.A.	Max. Audio Watts	Type Mounting	Dimensions			Weight in Carton	List Price
		Primary	Sec.				H	W	D		
A-3856	Single or P.P. Plates	2,000, 4,000, 5,000, 6,000, 8,000, 10,000 C.T.	4, 8, 15	35	..	Q	1 1/8"	2 3/8"	1 3/8"	0.6	\$2.60
A-3849	Universal Single Plate	1,500, 2,000, 4,000, 5,000, 7,000, 10,000	4, 8, 15	55	10	Q	1 5/8"	2 3/8"	1 1/2"	0.7	2.60
A-3823	Single or P.P. Plates	2,000, 4,000, 5,000, 6,000, 8,000, 10,000 C.T.	4, 8, 15	40	8	Q	2"	2 13/16"	1 1/2"	0.7	2.75
A-3850	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	40	8	J	2"	2 3/8"	1 1/2"	0.7	2.95
A-3852	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	40	18	J	2 5/16"	2 3/8"	2"	1.6	3.55
A-3870	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	50	18	Q	2 3/8"	3 1/4"	2"	1.6	3.75
A-3880	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	40	15	Q	2 1/4"	3 3/4"	2 1/4"	1.7	4.90
A-3830	Single or P.P. Plates	2,000, 4,000, 5,000, 6,000, 8,000, 10,000 C.T.	4, 8, 15	60	20	Q	2 11/16"	3 5/16"	2 1/4"	3.0	4.90
A-3890	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	50	15	TD	2 11/16"	2 3/4"	2 3/8"	1.3	6.50
A-2855	Single or P.P. Plates	4,000, 7,000, 8,000, 10,000, 14,000 C.T.	4, 8, 15	50	15	L	2 3/8"	2 1/8"	1 3/4"	1.3	4.20
A-3841	Universal Single Plate	2,500, 4,000, 5,000, 6,000, 7,000	500	60	10	J	2 11/16"	3 5/16"	2 1/4"	1.8	6.25
A-3842	Universal P.P. Plates	8,000, 10,000, 12,000, 14,000 C.T.	500	55	10	J	2 11/16"	3 5/16"	2 1/4"	1.8	6.55

## Crystal Recorder Output Transformers

Stancor No.	Output Tubes	Impedance in Ohms		Core Size	Max. Watts Level	Type Mtg.	Dimensions			Mtg. Ctrs.	Wgt. in Ctn.	List Price
		Primary	Secondary				H	W	D			
A-3853	Sgl. 2A5, 6AC5, 6B5, 7B5, 6F6, 6K6, 6N6, 42	7,000	70,000 or 4-6	3/8" x 3/4"	5	A	2"	3 1/4"	1 3/4"	2 11/16"	1.0	\$4.50
A-3854	Sgl. 2A5, 6AC5, 6B5, 7B5, 6F6, 6K6, 6N6, 42	7,000	70,000 and 4-6	1/8" x 1/8"	10	A	2 1/4"	3 3/4"	2 1/4"	3 1/8"	1.5	4.75
A-3859	P.P. 6AC5, 6B5, 7B5, 6F6, 6K6, 6N6, 42	10,000	70,000 or 4-6	3/8" x 3/4"	5	A	2"	3 1/4"	1 3/4"	2 11/16"	1.0	4.50
A-3860	P.P. 6AC5, 6B5, 7B5, 6F6, 6K6, 6N6, 42	10,000	70,000 and 4-6	1/8" x 7/8"	10	A	2 1/4" x	3 3/4" x	2 1/4"	3 1/8"	1.5	5.50
A-3897	500 Ohm Line	500	70,000	1/8" x 7/8"	10	W2	3 1/2" x	2 7/8" x	3 1/8"	....	3.0	16.80

## Tube to Line Transformers—Universal

Stancor No.	From	To	Impedance		D.C. Pri. Ma.	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
			Primary	Secondary			H	W	D		
A-3250	Sgl. or P.P. 27, 30, 12A, 37, 55, 56, 76, 6C5, 6C6	Line	10,000 or 20,000	50, 125, 200, 333, 500	10	Q	2"	3 1/4"	1 3/4"	1.2	\$4.50
A-3315	Sgl. or P.P. 27, 30, 37, 55, 56, 76, 12A, 6C5, 6C6	Line	10,000 or 20,000	50, 125, 200, 333, 500	35	D	3 1/8"	2 3/8"	3 3/8"	2.6	10.00
A-4770	Univ. Single Tube	Line	2,500, 4,000, 5,000, 6,000, 7,000	500	60	J	3 3/8"	2 3/8"	2 3/8"	2.3	6.00
A-4771	Univ. P.P. Tubes	Line	8,000, 10,000, 12,000, 14,000 C.T.	500	55	A	2 3/8"	4"	2 3/8"	2.3	6.30



A



B



C



D



FA-FB



FK



FS



G



J

# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## Replacement Output Transformers

Stancor No.	Output Tubes	Class	Impedance in Ohms		D.C. Pri. Ma.	Max. Audio Watts	Type Mtg.	Dimensions			Wgt. In Ctn.	List Price
			Primary	Secondary				H	W	D		
A-3865	Sgl. 48, 25B6, 25L6, 50L6	A	1,500	2, 4, 6	55	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	\$2.35
A-3876	Sgl. 2A3, 6A3, 6B4, 6W6, 6Y6, 25AC5, 25B5, 25B6, 25L6, 35A5, 35L6, 50L6	A	2,000	4	60	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	1.75
A-3825	Sgl. 2A3, 6A3, 6B4, 6L6, 6W6, 6Y6, 25AC5, 25B5, 25L6, 25N6, 35N6, 35L6, 50L6	A	2,500	1, 2, 4	75	8	Q	2"	3 1/4"	1 3/4"	1.0	3.25
A-2203	Sgl. 12A5, 25A6, 31, 43, 45, 71, 48	A	4,000	8	40	5	A	1 5/8"	2 7/8"	1 5/8"	0.7	2.55
A-3877	Sgl. 2B6, 6V6, 7C5, 12A, 25A6, 31, 43, 59	A	5,000	4	40	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	1.85
A-3822	Sgl. 2A5, 5AC5, 6B5, 6F6, 6K6, 6N6, 7B5, 38, 41, 42, 47, 59, 89	A	7,000 10,000	0.7, 1, 1.4 2, 2.8, 4	45	5	Q	1 3/8"	2 3/8"	1 3/8"	0.5	2.20
A-3878	Sgl. 2A5, 6AC5, 6B5, 7B5, 6F6, 6K6, 6N6, 20, 31, 33, 42	A	7,000	4	30	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	1.80
A-2313	Sgl. 2A5, 6AC5, 6F6, 6K6, 6N6, 7B5, 33, 41, 42, 47, 59, 89	A	7,000	8	40	10	A	2"	3 1/4"	1 3/4"	1.1	2.70
A-2201	Sgl. 6A6, 53; P.P. 25A6, 43, 45, 48, 71	A	8,000	6	40	10	A	2"	3 1/4"	1 3/4"	1.0	3.10
A-3824	Sgl. 6A6, 6N7, 53; P.P. 46	B	8,000	1, 2, 4	75	8	Q	1 1/2"	3 1/4"	2"	1.4	4.10
A-3879	Sgl. 1J6, 6C5, 6A4, 6G6, 6N7, 6R7, 12A, 38	A	10,000	4	30	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	1.75
A-3831	Sgl. 1G6, 1J6, 19, 6E6; P.P. 30, 49	B	10,000	2, 4, 8	40	5	A	1 3/8"	2 1/4"	1 3/8"	2.6	2.70
A-3496	P.P. 2A5, 6F6, 6K6, 7B5, 33, 41, 42, 47, 49	A	14,000	4	45	5	A	1 3/8"	2 3/8"	1 3/8"	0.7	2.35
A-2312	P.P. 2A5, 6F6, 6K6, 7B5, 33, 41, 42, 47, 49	A	14,000	4	40	10	A	2"	3 1/4"	1 3/4"	1.1	2.80
A-3881	Sgl. 1D8, 1E7, 1F4, 1F5, 1T5, 6V7, 6Y7, 12A7	A	15,000	4	10	5	A	1 3/8"	2 3/8"	1 3/8"	0.5	1.75
A-3848	Sgl. 1D8, 1F4, 1F5, 1J5, 1T6, 6R7, 960	A	16,000	1, 2, 4	10	5	Q	1 3/8"	2 3/8"	1 3/8"	0.5	2.60
A-3887	Sgl. 1A5, 1E7, 1N6, 6V7; PP. 1F4, 1F5, 1J5, 1T5, 6G6	A	25,000	4	10	5	A	1 3/8"	2 1/8"	1 3/8"	0.7	2.25

## Heavy Duty Output Transformers to Line or Speaker—High Level

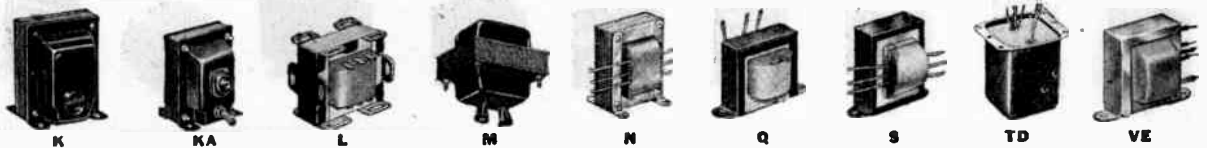
A-3306	P.P. PAR. 48, 25L6 P.P. PAR. 2A3, 45	A AB	2,500	4, 8, 15, 500	100	25	C	3 3/8"	3"	3 3/8"	3.6	\$8.00
A-3301	PP. 2A3, 6A3, 6B4 P.P. 48, 25L6	AB A	3,000	4, 8, 15, 500	55	30	C	3 3/8"	3"	3 3/8"	3.7	7.70
A-3802	P.P. PAR. 6L6 PP. 45, 6L6	AB1 AB2	3,300 3,800	4, 8, 250, 500	250	75	C	4 5/8"	3 7/8"	3 7/8"	8.3	11.50
A-5528	P.P. 6Y6, 25L6	A	4,000	4, 8, 15, 500	65	8	C	3 3/8"	2 5/8"	2 3/8"	2.4	6.60
A-3851	P.P. 6L6*	AB1	4,400	4, 8, 15, 250, 500	70	30	C	3 3/8"	3"	3 3/8"	3.6	8.90
A-3872	P.P. 6L6; P.P. 2A3, 6A3, 45	A	5,000	4, 8, 15	150	18	TD	2 1/8"	2 3/4"	2 1/8"	1.8	6.00
A-3310	Sgl. 45, 2B6, 6L6, 6V6, 25A6, 25A7	A	5,000	4, 8, 15, 500	55	20	C	3 3/8"	2 5/8"	2 5/8"	2.5	6.95
A-3800	P.P. 6L6 P.P. 2A3, 6A3, 45	AB A	5,000	4, 8, 15, 250, 500	80	30	C	3 3/8"	3"	3 3/8"	3.7	7.90
A-3307	P.P. 2A5, 6F6, 42 P.P. 46, 59; P.P. PAR. 6A6, 6N7, 53	AB2 B	6,000	4, 8, 15, 500	100	30	C	3 3/8"	3"	3 3/8"	3.6	8.40
A-3801	P.P. 6L6	AB1	6,600	4, 8, 15, 250, 500	150	35	C	3 7/8"	3 1/4"	3 3/8"	5.0	9.20
A-3856	Sgl. 2A5, 6AC5, 6F6, 6K6, 6N6, 7B5, 33, 41, 42, 47, 59, 89; P.P. 12A5, 45	A	7,000	10, 2,000	40	5	TD	2 1/8"	2 3/4"	2 1/8"	1.7	5.65
A-3885	P.P. 6L6	AB1	9,000	4, 8, 15, 250, 500	150	35	C	3 3/8"	3 1/4"	3 3/8"	5.0	9.20
A-3304	Sgl. 6A4, 6B5, 6N6; PP. 6V6, 45 Sgl. 6A6, 6N7, 53; P.P. 6AC5	A B	7,000, 7,000 10,000	4, 8, 15, 500	60	25	C	3 3/8"	2 5/8"	2 5/8"	2.6	7.20
A-3839	Sgl. 1G6, 1J6, 19; PP. 1H4, 30, 49 Sgl. 1G5, 3C5, 6G6, 6R7, 12A	B A	10,000	4, 8, 15, 2000	30	10	TD	2 1/8"	2 3/4"	2 3/8"	1.7	6.00
A-3311	Sgl. 6A6, 6N7, 53; P.P. 6B5, 6N6 P.P. 6F6, 6V6	B AB	10,000	4, 8, 15, 500	70	25	C	3 3/8"	3"	3 3/8"	3.8	7.50
A-3303	Sgl. 6Y7, 6Z7, 79 P.P. 2A5, 6F6, 6K6, 7B5, 41, 42, 47, 59, 89	B A	14,000	4, 8, 15, 500	55	20	C	3 3/8"	2 5/8"	2 5/8"	2.6	7.00

\* 10% Inverse Feedback Winding Used. NOTE: All transformers shown for P.P. operation have C.T.

## High Fidelity Output Transformers

Part No.	Pri. Z C.T. Ohms	Sec. Z in Ohms*	Type of Tubes	Class of Operation	Max. Pri. D.C. per Side	Max. Audio Watts	Type of Mounting	Weight in Carton	List Price
A-8050	1500	8, 16	P.P. PAR. 2A3's	AB	80	50	C	6.5	\$14.20
A-8051	2500	8, 16	P.P. PAR. 6L6's	A	150	50	C	6.5	14.20
A-8052	3000	8, 16	P.P. 2A3's	AB	75	25	C	6.5	12.80
A-8053	5000	8, 16	P.P. 6L6's or P.P. 2A3's	A	75	25	C	6.5	12.80
A-8054	9000	8, 16	P.P. 6L6's	AB1	75	25	C	6.5	12.80
A-8060	1500	500	P.P. PAR. 2A3's	AB	80	50	C	6.5	14.20
A-8061	2500	500	P.P. PAR. 6L6's	A	150	50	C	6.5	14.20
A-8062	3000	500	P.P. 2A3's	AB	75	25	C	6.5	12.80
A-8063	5000	500	P.P. 6L6's or P.P. 2A3's	A	75	25	C	6.5	12.80
A-8064	9000	500	P.P. 6L6's	AB1	75	25	C	6.5	12.80

\* Where more than one secondary impedance is shown only one value is to be used at any time.





# TRANSFORMERS

REACTORS      POWER PACKS      TRANSMITTERS

## Interstage Transformers

Stancor No.	From	To	Impedance		Turns Ratio Sec. to Pri.	D.C. Pri. Ma.	Type Mtg.	Mounting Dimensions			Wgt. in Ctn.	List Price
			Pri.	Sec.				H	W	D		
A-4205	20,000 ohm plate	Grid	20,000	115,000	2.4:1	15	C	3 3/8"	2 3/8"	2 3/8"	2.5	\$7.50
A-53C	10,000 ohm plate	Grid	10,000	90,000	3:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.5	2.45
A-63C	10,000 ohm plate	Grid	10,000	90,000	3:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.75	2.65
A-73C	10,000 ohm plate	Grid	10,000	90,000	3:1	10	A	2"	3 3/8"	1 3/8"	1.0	3.20
A-2132	Screen Grid Tube For coupling screen grid or power detector.	P.P. Grids	10,000	10,000	1:1	10	S	3 3/8"	3 3/8"	2 3/8"	2.4	6.55
A-62C	10,000 ohm plate	P.P. Grids	10,000	40,000	2:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.5	2.45
A-62C	10,000 ohm plate	P.P. Grids	10,000	40,000	2:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.75	2.65
A-4741	10,000 ohm plate	P.P. Grids	10,000	40,000	2:1	10	S	2"	2 3/8"	1 3/8"	0.8	2.80
A-4745	10,000 ohm plate For super-regenerative detector, static shield between windings.	P.P. Grids	10,000	40,000	2:1	10	TD	2 11/16"	2 3/8"	2 3/8"	1.5	6.35
A-53C	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.5	2.45
A-63C	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.75	2.65
A-73C	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	A	2"	3 3/8"	1 3/8"	1.0	3.20
A-103C	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	A	2 3/8"	4"	2 3/8"	2.2	6.45
A-4155	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	L	2 3/8"	2 3/8"	1 3/8"	1.2	4.75
A-4719	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	TD	2 11/16"	2 3/8"	2 3/8"	1.5	5.85
A-4750	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	S	2 3/8"	2 3/8"	1 3/8"	1.0	3.50
A-4740	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	S	2"	2 3/8"	1 3/8"	0.75	3.00
A-83C	10,000 ohm plate	P.P. Grids	10,000	90,000	3:1	10	A	2 3/8"	3 3/8"	2 3/8"	1.5	4.90
A-4206*	20,000 ohm plate	P.P. Grids	20,000	180,000	3.25:1	15	C	3 3/8"	2 3/8"	2 3/8"	2.5	7.50
A-64C	10,000 ohm plate	P.P. Grids	10,000	160,000	4:1	10	S	2"	2 3/8"	1 3/8"	0.75	3.00

\* Split Secondary.

A-4206*	P.P. Plates	P.P. Grids	25,000	13,000	1:1.39	15	C	3 3/8"	2 3/8"	2 3/8"	2.5	\$6.00
A-4711	P.P. Plates	P.P. Grids	20,000	20,000	1:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.8	3.10
A-4777*	P.P. Plates	P.P. Grids	20,000	45,000	1.5:1	10	C	3 3/8"	2 3/8"	2 3/8"	2.5	6.50
A-4155	P.P. Plates	P.P. Grids	10,000	90,000	3:1	10	L	2 3/8"	2 3/8"	1 3/8"	1.2	4.75

\* Split Secondary.

## Universal Interstage Transformers—Split Secondaries

Stancor No.	Application	Turns Ratio	D.C. Pri. Ma.	Type Mtg.	Dimensions			Mtg. Ctrs.	Wgt. in Ctn.	List Price
					H	W	D			
A-4773	Universal	3:1	10	TD	2 11/16"	2 3/8"	2 3/8"	2 3/8"	1.5	\$6.00
A-4774	Universal	3:1	10	S	2 3/8"	2 3/8"	1 3/8"	2 3/8"	1.5	4.05

May be used as plate to grid; push pull input or push-pull interstage replacement transformers. Have 3:1 over all ratio, however, primary is center-tapped and secondary has split winding, thus permitting

ratios of 1:1, 3:1 and 6:1. Transformers may be used in either step-up or step-down applications.

## Driver Transformers

Stancor No.	From	To	Class	Pri. Impedance	1/2 Sec. Impedance	Turns Ratio Pri. to 1/2 Sec.	D.C. Pri. Ma.	Type Mtg.	Mounting Dimensions			Wgt. in Ctn.	List Price
									H	W	D		
A-4722	1-42, 47 2A5, 6K6	P.P. 42, 2A5, 6F6, 6K6	AB	10,000	2,500	2:1	30	TD	2 11/16"	2 3/8"	2 3/8"	1.5	\$5.40
A-4762	1-6G6G, 6F6, 42, 2A5, as Triodes	P.P. Grids 6V6, 6Y6, 6F6, 6L6, 6Z7	AB	10,000	2,500 4,400 10,000	2:1 1.5:1 1:1	35	A	2"	3 3/8"	1 3/8"	1.5	4.00
A-4713	1-46, 45, 2A5, 6F6	P.P. Grids 79, 2A5, 6A6, 6F6	AB	10,000	2,500	2:1	30	A	1 3/8"	2 3/8"	1 3/8"	0.7	2.60
A-4292	1-6C5, 30, 49	1-1J6, 19, 2-30, 2-49	B	10,000	1,600	2.5:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.7	2.60
A-4734	1-30, 2A5, 6A6, 1G5, 6F6, 6K6	P.P. Grids 19, 2A5, 6A6, 1J6	B	10,000	1,600	2.5:1	15	S	2 3/8"	2 3/8"	1 3/8"	1.4	3.40
A-4723	1-30, 2A5, 6A6, 1G5, 6K6, etc.	P.P. Grids 19, 79, 2A5, 6A6, 6F6, 1J6, 6K6	B	10,000	1,100	3:1	30	A	1 3/8"	2 3/8"	1 3/8"	0.7	2.60
A-4712	P.P. 27, 30, 37, 56, 76, 6C5, 1H4, 6J5	P.P. 19, 53, 6A6, 1J6, 6N7	B	20,000	2,200	3:1	10	A	1 3/8"	2 3/8"	1 3/8"	0.7	2.90



# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## Microphone Pickup or Line to Grid Transformers

Stancor No.	From	To	Impedance		Ratio Overall	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
			Primary	Secondary			H	W	D		
A-4742	S.B. Microphone	Sgl. or P.P. Grids	100	400,000 C.T.	1:64	S	2 3/8"	2 3/8"	1 3/4"	1.0	\$3.95
A-4743	S.B. Microphone Has shield cover which encloses entire coil.	Sgl. or P.P. Grids	100	400,000 C.T.	1:64	S	2 3/8"	2 3/8"	2 1/8"	1.1	4.30
A-4707	S.B. Microphone	Single Grid	100	58,500	1:24.2	J	2"	2 3/8"	1 3/8"	0.8	3.20
A-4706	S.B. Microphone	Single Grid	100	60,000	1:24.6	A	1 3/8"	2 3/8"	1 1/2"	0.6	2.40
A-4708	D.B. Microphone	Single Grid	200 C.T.	57,000	1:17	J	2"	2 3/8"	1 3/8"	0.8	3.55
A-4709	Dynamic or Pickup	Single Grid	4, 8, 15, 30	106,000	1:60	TD	2 1/8"	2 3/8"	2 3/8"	1.8	6.40
A-4351	S.B. or D.B. Microphone or line	Single Grid	50, 125, 200, 333, 500	89,000	1:13.3	TD	2 1/8"	2 3/8"	2 3/8"	1.0	5.90
A-4408	S.B. or D.B. Microphone or line	Single Grid	50, 125, 200, 333, 500	80,000	1:12.5	D	3 1/8"	2 3/8"	3 1/8"	2.6	9.10
A-4726	D.B. Microphone and 200 ohm line	P.P. Grids	200 C.T.	100,000	1:22.3	TD	2 1/8"	2 3/8"	2 3/8"	1.8	6.40
A-4382	S.B. or D.B. Microphone or line	P.P. Grids	50, 125, 200, 333, 500	89,000	1:13.3	Q	2"	3 1/8"	1 3/8"	1.0	5.20
A-4409	S.B. or D.B. Microphone or line	P.P. Grids	50, 125, 200, 333, 500	157,000	1:17.7	D	3 1/8"	2 3/8"	3 1/8"	2.6	9.50
A-4705	S.B. Microphone	Single Grid	200 or 70	80,000	1:20	A	1 3/8"	2 3/8"	1 3/8"	0.5	2.35
A-4728	1, 2, 3, or 4 Circuit Mixer	Single Grid	50, 100, 150, 200	100,000	1:22.2	TD	2 1/8"	2 3/8"	2 3/8"	1.8	6.95

## Microphone or Line to Line Transformers

A-4350	Sgl. or D.B. microphone	Line	50, 125, 200, 333, 500	50, 125, 200, 333, 500	Q	2"	3 1/8"	1 3/8"	1.0	\$5.60
A-4407	Sgl. or D.B. microphone	Line	50, 125, 200, 333, 500	50, 125, 200, 333, 500	D	3 1/8"	2 3/8"	3 1/8"	2.6	9.60

## Line to Voice Coil Transformers

Stancor No.	For Coupling	Primary Impedance	Secondary Impedance	Max. Audio Watts	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
						H	W	D		
A-8101	Line to voice coil	500	8.2, 6-8 ohms	5	Q	1 3/8"	2 3/8"	1 3/8"	0.4	\$1.95
A-7947	Line to voice coil	500, 1,000, 1,500, 2,000	6 ohms	8	Q	1 3/8"	2 1/8"	1 3/8"	0.8	2.90
A-7949	Line to voice coil	500, 1,000, 1,500, 2,000	6-8 ohms	12	J	2 3/8"	2 3/8"	1 3/8"	0.9	3.45
A-3882	Line to voice coil	250, 333, 500	4, 8, 15	25	D	3 3/8"	2 3/8"	3 1/8"	2.6	7.25
A-3883	Line to voice coil	500	4, 6, 8, 15	25	J	2 3/8"	2 3/8"	1 3/8"	1.5	3.90
A-3818	Line to voice coil	500, 1,000, 1,500	4, 8, 15	25	J	3 1/8"	3 3/8"	2 1/8"	2.6	4.75
A-3820	Line to voice coil	500, 1,000, 1,500, 2,000	4, 8, 15	40	D	4 3/8"	3 3/8"	4 1/8"	5.8	9.95
A-3838	Line to speakers autoformer	500	250, 166, 125, 100, 84	30	B	3 1/8"	2 1/2"	2 1/4"	2.6	5.75
A-3837	Line to voice coil. 1 to 6 can be paralleled across 500 ohm line	500, 1,000, 1,500, 2,000, 2,500, 3,000	.06 to 8 ohm from primary of 500 ohms—12 to 16 from 1,000, etc.	15	J	2 3/8"	2 3/8"	2"	2.0	5.00

## Line to Voice Coil, Outdoor Type

Stancor No.	Primary Impedance	Secondary Impedance	Rated Watts	Mtg. Type	Dimensions with Brkt.			Mtg. Centers Can or Bracket	Wgt. in Ctn.	List Price
					H	W	D			
A-3333	3,000, 2,000, 1,500, 1,000, 500	16, 8, 4 ohms	14	TW	3 1/2"	3 1/2"	3"	2" x 3 1/2"	3.4	\$10.95
A-3334	3,000, 2,000, 1,500, 1,000, 500	16, 8, 4 ohms	25	TW	3 1/2"	3 1/2"	3"	2" x 3 1/2"	3.5	13.95

\*Not illustrated.  
Can type with mounting bracket.

## Input Transformer—Intercommunication

Stancor No.	From	To	Impedance in Ohms		Core Size	Type Mtg.	Dimensions			Mtg. Ctrs.	Wgt. in Ctn.	List Price
			Pri.	Sec.			H	W	D			
A-4744	Voice Coil	Sgl. Grid	4	25,000	1/2" x 3/8"	VE	1 3/8"	2 3/8"	1 1/2"	2 3/8"	0.5	\$2.45

## Transceiver Transformers

Stancor No.	Application	Impedance in Ohms		Max. Pri. Ma. D.C.	Max. Audio Watts	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
		Pri.	Sec.				H	W	D		
A-3833	Sgl. Button Micro. and Plate to Single Grid.	5,000 200	60,000	60	5	A	1 3/8"	2 3/8"	1 1/2"	0.7	\$3.40
A-4413	Sgl. Button Micro. and Plate to Single Grid.	10,000 200	90,000	45	10	J	2 3/8"	2 3/8"	1 3/8"	1.5	4.75
A-3836	Pentode Plate to Low or High Impedance Phone or Oscillator	10,000	2,000 50	30	5	A	1 3/8"	2 3/8"	1 1/2"	0.7	3.30

## Tone Control Unit

The necessary components for a dual tone control circuit to provide both bass and treble attenuation when used in conjunction with two dual 250,000 ohm potentiometers. Contained in Hi-Fi-type W-1 cast

case for shielding against hum pickup and provided with 12 Flexible Coded Leads for direct connection in the circuit. Dimensions H.3 1/2" x W.2 3/4" x L.3 1/8".

STANCOR No. C-2332-1.....

List \$8.80



K



KA



L



M



N



Q



S



TD



VE



# TRANSFORMERS

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## Testing Autoformer

Incorporates a convenient tap switch to permit variable voltages from 90 to 150 volts. Primary equipped with 5 ft. approved cord and plug.

Secondary connected to female receptacle. Locking screw mounted on switch.

Stancor No.	Secondary Voltage	Primary Voltage	Output Watts	Type Mounting	Dimensions			Wgt. in Ctn.	List Price
					H	W	D		
P-6299	90, 100, 110, 120, 130, 140, 150, @ 50-60 cy.	115V	150	KA	3 $\frac{7}{8}$ "	3 $\frac{1}{4}$ "	4 $\frac{3}{4}$ "	8.0	\$14.95

## Step-Down Autoformers

These transformers are excellent units to be used with standard apparatus on 220-250 volt lines. May also be wired to step up 110-125

volts to 220-250 volts for test purposes or other applications.

Stancor No.	Primary		Secondary Volts	Output Watts	Type Mounting	Mounting Dimensions			Wgt. in Ctn.	List Price
	Volts	Cycles				H	W	D		
P-6287	220-250	50-60	110-125	40	*	4 $\frac{1}{4}$ "	3"	3"	2.5	\$7.00
P-5062	220-250	50-60	110-125	80	K	3 $\frac{5}{8}$ "	2 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "	4.5	8.40
P-5063	220-250	50-60	110-125	100	K	3 $\frac{7}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	5.2	9.65
P-5064	220-250	50-60	110-125	150	K	4 $\frac{1}{4}$ "	3 $\frac{1}{2}$ "	3 $\frac{5}{8}$ "	6.6	11.00
P-5065	220-250	50-60	110-125	250-300	K	4 $\frac{5}{8}$ "	3 $\frac{3}{8}$ "	4 $\frac{1}{2}$ "	9.8	13.90
P-6141	220-250	50-60	110-125	500	K	4 $\frac{5}{8}$ "	3 $\frac{3}{8}$ "	5 $\frac{1}{2}$ "	14.5	21.00
P-6124	220-250	50-60	110-125	1000	F	7 $\frac{3}{8}$ "	6"	6 $\frac{1}{8}$ "	30.0	40.00

\* Mounted in special can and equipped with cord, plug and receptacle.

## Isolation Transformers

These transformers are designed with an electrostatic shield to isolate line noises and interference from the apparatus being used. They are suitable for screen test booths, electrical therapeutic machines, medical instruments, beauty parlor equipment, electric furnaces, amateur

transmitters, etc. Each unit complete with a 6 ft. cord and plug and a female receptacle. Units in first group are straight isolation types; second group are step-down isolation units. Tap switch controls primary voltage, except on Nos. P-6123, P-6125, P-6389 and P-6390.

Stancor No.	Watts	Primary	Secondary	Type Mounting	Mounting Dimensions			Weight in Carton	List Price
					H	W	D		
P-6160	100	125/115/105	115	KA	4 $\frac{5}{8}$ "	3 $\frac{3}{8}$ "	3 $\frac{5}{8}$ "	5.5 lbs.	\$17.25
P-6161	250	125/115/105	115	KA	4 $\frac{5}{8}$ "	3 $\frac{3}{8}$ "	5 $\frac{1}{8}$ "	14.0 lbs.	34.00
P-6298	500	125/115/105	115	FK	7 $\frac{3}{8}$ "	6"	6 $\frac{1}{2}$ "	37.0 lbs.	49.50
P-6125	1000	125/115/105	115	FK	7 $\frac{1}{2}$ "	7 $\frac{1}{8}$ "	6 $\frac{1}{2}$ "	50.0 lbs.	60.90
P-6123	1500	125/115/105	115	FK	7 $\frac{1}{2}$ "	7 $\frac{1}{8}$ "	7 $\frac{1}{2}$ "	60.0 lbs.	76.70
P-6383	100	250/230/210	115	KA	4 $\frac{3}{4}$ "	4"	3 $\frac{5}{8}$ "	7.3 lbs.	17.65
P-6385	250	250/230/210	115	KA	4 $\frac{3}{4}$ "	4"	5 $\frac{5}{8}$ "	14.2 lbs.	29.80
P-6387	500	250/230/210	115	FK	7 $\frac{5}{8}$ "	6 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	29.5 lbs.	45.95
P-6389	1000	250/230/210	115	FK	7 $\frac{3}{4}$ "	7 $\frac{3}{8}$ "	6 $\frac{3}{8}$ "	34.8 lbs.	60.90
P-6390	1500	250/230/210	115	FK	7 $\frac{3}{4}$ "	7 $\frac{3}{8}$ "	8 $\frac{1}{2}$ "	49.8 lbs.	76.70

## Universal Speaker Field Substitute Choke

Designed for the service department, to take the place of the speaker field on the test bench. Packed with full instructions.

Stancor No.	D.C. Resistance in Ohms	Resistance and Current Rating	Type Mounting	Dimensions			Weight in Ctn.	List Price
				H	W	D		
C-2302	3000 tapped at 2500, 1000 and 750	250, 750, 1000, 1750 ohms—60 Ma. cont. or 75 Ma. Int. Duty 500, 1500, 2000, 2250, 2500, 3000 ohms—40 Ma. cont. or 55 Ma. Int. Duty	B	3 $\frac{5}{8}$ "	2 $\frac{3}{8}$ "	3"	2.6	\$7.50



# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## Filter Chokes—Replacement Types

Stancor No.	Rated Inductance in Henries	Maximum Current in Ma.	D.C. Resistance in Ohms	Volts Insulation	Type Mounting	Mounting Dimensions			Weight in Ctn.	List Price
						H	W	D		
C-1515	20	15	900	1650	A	1 1/8"	2 1/8"	1 3/4"	0.7	\$1.80
C-1706	4.5	50	300	1650	A	1 3/8"	2 3/8"	1 5/8"	0.5	1.60
C-1707	7	50	500	1650	A	1 3/8"	2 3/8"	1 5/8"	0.5	1.60
C-1003	16	50	580	1650	A	1 7/8"	3 1/8"	1 5/8"	1.4	2.15
C-1708	13	65	460	1650	A	1 7/8"	3 1/8"	2 13/16"	1.1	2.35
C-1355	8	75	275	1650	L	2 1/4"	2 3/8"	1 5/4"	1.2	2.50
C-1002	15	75	400	1650	A	2 1/4"	3 11/16"	1 7/8"	1.7	2.95
C-1420	16	80	350	2000	C	3 1/16"	2 3/8"	2 1/2"	2.6	4.30
C-1709	8	85	250	1650	A	1 7/8"	3 1/4"	2 13/16"	1.5	2.75
C-2305	5	100	275	2000	TD	2 11/16"	2 3/4"	2 3/16"	1.7	4.00
C-1001	10.5	110	200	3000	A	2 1/2"	4"	2"	2.4	3.70
C-2303	2.5	130	100	2000	A	2"	3 3/8"	1 5/8"	1.4	2.50
C-1421	7	140	160	3000	C	3 1/16"	2 3/8"	2 1/2"	2.7	5.30
C-2304	2.3	150	65	2000	A	2"	3 3/8"	1 5/8"	1.4	2.60
C-2309	3	150	90	2000	A	2 1/4"	3 11/16"	1 7/8"	1.5	2.80
C-1710	7	150	200	1650	A	2 1/2"	4"	2 1/16"	2.3	3.50

## Filter Chokes—Heavy Duty Types

C-1410	4.0	175	100	3000	C	3 1/16"	2 3/8"	2 1/2"	2.7	\$5.10
C-1646	5.0	200	70	5000	C	4"	3 1/4"	3 3/8"	4.7	7.30
C-1411	4.5	200	80	3000	C	3 3/8"	2 13/16"	3 1/4"	4.0	6.30
C-1721	8.5	200	120	3000	N	4"	3 3/8"	3 1/4"	4.5	6.30
C-1703	4.0	250	60	3000	B	3 1/2"	2 13/16"	3 1/2"	3.9	6.95
C-1412	4.0	250	60	3000	C	3 3/8"	2 13/16"	3 1/4"	4.8	7.70
C-1722	8.0	300	80	3000	N	4 1/2"	3 3/8"	3 1/2"	8.5	8.50
C-2308	8.0	300	80	3000	C	4 5/8"	3 7/8"	3 7/8"	9.0	9.90
C-1413	8.0	300	80	5000	D	4 5/8"	3 7/8"	3 7/8"	8.5	11.50
C-1414	7.5	400	60	5000	D	4 5/8"	3 7/8"	4 7/8"	13.5	15.85
C-1415	6.0	500	70	7500	FS	8 3/16"	6"	5 3/4"	17.0	32.80

## Swinging Chokes

C-1718	13.5-3.5	150	130	2000	C	3 1/16"	2 3/8"	2 1/2"	2.5	\$5.00
C-1400	12-2	175	100	3000	C	3 1/16"	2 3/8"	2 1/2"	2.7	5.30
C-1401	12-2	200	80	3000	C	3 3/8"	2 13/16"	3 1/4"	3.5	6.50
C-1645	12-2	200	90	5000	C	3 7/8"	3 1/4"	3 3/8"	4.7	7.30
C-1719	18-3	200	120	3000	N	3 3/4"	3 3/8"	3 1/4"	5.0	6.95
C-1702	12-2	250	60	3000	B	3 1/2"	2 13/16"	3"	3.9	6.95
C-1402	12-2	250	60	3000	C	3 3/8"	2 13/16"	3 3/8"	4.6	7.70
C-1720	20-4	300	80	3000	N	4 1/2"	3 3/8"	3 1/2"	8.5	8.80
C-2307	20-4	300	80	3000	C	4 5/8"	3 7/8"	3 7/8"	9.0	9.90
C-1403	20-4	300	80	5000	D	4 5/8"	3 7/8"	3 7/8"	8.4	11.25
C-1404	17-3	400	60	5000	D	4 5/8"	3 7/8"	4 7/8"	12.3	15.85
C-1405	16-4	500	75	7500	FS	8 3/16"	6"	5 3/4"	17.0	32.80

## A.C.-D.C. Chokes

C-1711	4.5	50	325	1500	Q	1 3/8"	2 3/8"	1 3/8"	0.5	\$1.75
C-1723	4.5	50	325	1500	A	1 3/8"	1 3/8"	1 3/8"	0.5	1.70
C-1080	3.5	50	200	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.70
C-1325	5.0	50	250	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.75
C-1277	7.0	50	300	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.75
C-1227	7.0	50	350	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.75
C-1279	8.5	50	400	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.75
C-1333	8.0	50	450	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.80
C-1215	9.0	50	500	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.75
C-1362	9.5	50	550	1500	A	1 3/8"	2 3/8"	1 3/4"	0.6	1.80

## Output Chokes

C-1003	16.0	50	550	1500	A	2"	3 1/4"	1 3/4"	1.4	\$2.15
C-1034*	8.0	30	1365	1500	A	2"	3 1/4"	1 3/4"	1.3	2.65

## Audio Reactor

Stancor No.	Rated Inductance in Henries	Inductance Measured at Ma.	Maximum Current Ma.	D.C. Res. Ohms	Volts Insulation	Type Mounting	Mounting Dimensions			Weight in Ctn.	List Price
							H	W	D		
C-2301	135.0	5	10	6500	1500	TD	2 11/16"	2 3/4"	2 3/8"	1.8	\$5.20





# TRANSFORMERS

REACTORS

POWER PACKS

TRANSMITTERS

## Plate Transformers

This group of transformers is designed primarily to deliver the rated D.C. voltage and current outputs when used with full-wave mercury vapor rectifier tubes in conjunction with a two section filter employing choke input and two 2 mfd. condensers working into a resistive load.

Generous coil and core design result in a transformer with above average regulation and efficiency. Phenolic terminal boards and heavy duty ceramic insulators assure protection from voltage breakdown.

Stancor No.	Primary Voltage	D.C. Voltage After Filter	Taps	MA. D.C.		Type Mounting	Mounting Dimensions			Weight in Ctn.	List Price
				I C A S	C C S		H	W	D		
P-8040	115	400	40	375	300	C	4 3/4"	4"	4 1/2"	12.3	\$14.25
P-8041	115	500	400-40	310	250	C	4 3/4"	4"	5 1/2"	9.0	17.50
P-8042	115	600	400-40	375	300	C	4 3/4"	4"	6 1/2"	16.5	23.50
P-8043	115	750	600-40	375	300	FS	7 1/2"	6 1/2"	8"	27.2	43.50
P-8044*	115	1000	400	190-190	150-150	FS	7 1/2"	6 1/2"	8 1/4"	28.0	45.50
P-8045	115	1000	750	310	250	FS	7 1/2"	6 1/2"	8"	27.2	43.50
P-8025	115	1000	750	500	400	FS	7 1/2"	6 1/2"	8 1/4"	35.5	45.80
P-8026	115	1250	1000	375	300	FS	7 3/8"	7 3/8"	8 1/4"	36.0	54.00
P-8027	115	1250	1000	625	500	FS	7 3/8"	7 3/8"	9"	40.0	58.80
P-8028	115	1500	1250	375	300	FS	7 3/8"	7 3/8"	8 1/2"	38.0	56.00
P-8029	115-230	1500	1250	625	500	FS	11 1/4"	7 3/8"	8 3/4"	52.0	74.00
P-8030	115	1750	1500	375	300	FS	7 3/8"	7 3/8"	9"	40.0	62.00
P-8031	115-230	1750	1500	625	500	FS	11 1/4"	7 3/8"	8 3/4"	52.0	88.50
P-8032	115	2000	1750	375	300	FS	7 3/8"	7 3/8"	9 1/4"	45.0	71.00
P-8033	115-230	2000	1750	625	500	FS	11 1/4"	7 3/8"	9 1/2"	57.0	102.00
P-8034	115-230	2500	2000	375	300	FS	11 1/4"	7 3/8"	8 3/4"	52.0	86.80
P-8035	115-230	2500	2000	575	500	FS	11 1/4"	7 3/8"	9 3/4"	60.0	112.00

\* Secondary with taps suitable for dual rectifier supply. Each output available at rated current.

NOTE: Transformers with more than one high voltage output have secondary with taps suitable for dual rectifier supply. Total current should not exceed rating.

## Bias Transformers

Stancor No.	D.C. Output		Filament		Primary Volts	Type Mounting	Dimensions			Weight in Ctn.	List Price
	Volts	Ma.	Volts	Amps.			H	W	D		
P-6317	90-130-170-200	200	5 C.T.	3	115	CD	3 1/2"	3 1/4"	3 3/4"	4.9	\$14.00
P-6318	250-350-400-450	200	5 C.T.	-3	115	CD	4 1/2"	3 5/8"	4 1/4"	7.0	16.00

Above plate and bias transformers are for listed voltage 60 cycle operation.

Other voltage and frequency combinations available on special order. Write for quotations.

## STANCOR MODEL 752 MASTER PACK



The Stancor Model 752 Master Pack meets the demand of the value-wise service technician for dependable equipment. No detail has been passed over, no feature has been slighted. For performance, durability and convenience, the Stancor 752 is the outstanding power supply for the service bench.

**HONEST OUTPUT RATING.** Conservatively rated to provide 6 volts at 12.5 amperes, DC, continuously and 25 amperes instantaneously from 115 volts, 50-60 cycle source. Extra power permits simultaneous operation of two or more receivers.

**TWO METERS.** Separate voltmeter and ammeter give continuous visual check of voltage and current delivered to load.

**LINE FUSE.** Positive protection against damage from excessive overloads.

**SELENIUM RECTIFIER.** For acknowledged dependability. Specified in critical military equipment where cost is of secondary importance.

**CHOKE-CONDENSER FILTER.** Allows use in applications where hum from poorly filtered power supply cannot be tolerated. Less than 3% ripple in output.

Attractive, durable gray hammerloid finish. Size overall, only 9 1/2" high, 7 3/8" wide, 12" long. Weight in carton, 30 pounds.

USER'S NET \$43.90



# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

## Filament Transformers—Single Secondary

This group of filament transformers represents a complete listing of all commonly used electrical and physical specifications for units of this type. All transformers except those especially indicated have center taps. They are designed to provide accurate voltage output

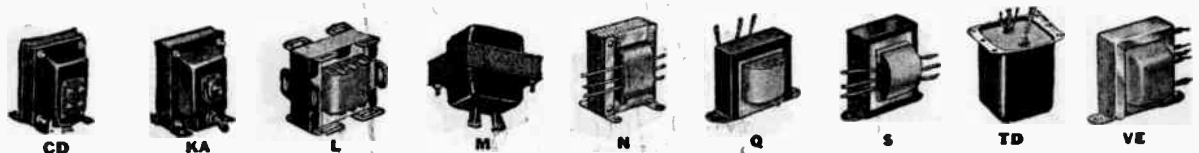
at rated loads with good regulation. Generous insulation provides a safety factor over and above the test voltage as indicated. Each group of transformers by voltage ratings is available in several convenient mounting styles which lend themselves to most applications.

Stancor No.	Primary Voltage	Secondary		Type Mounting	Mounting Dimensions			Sec. Volts Insulation	Weight in Ctn.	List Price
		Volts	Amperes		H	W	D			
P-4026	115	2.5 C.T.	1.5	A	1 1/4"	1 1/4"	2 1/4"	2,500	0.5	\$3.00
P-4082	105-115	2.5 C.T.	2.5	TD	2 1/8"	2 1/4"	2 1/8"	2,500	1.4	6.00
P-6133	115	2.5 C.T.	5	S	2 1/8"	2 1/2"	2 1/4"	7,500	2.7	4.50
P-4083	105-115	2.5 C.T.	6	C	3 1/4"	2 1/4"	2 1/4"	2,500	2.2	6.50
P-3024	105-115	2.5 C.T.	10	C	3 1/4"	2 1/4"	2 1/4"	2,500	2.7	6.25
P-3060	115	2.5 C.T.	10	B	3 1/4"	2 1/4"	2 1/4"	10,000	3.0	5.70
P-3025	105-115	2.5 C.T.	10	FA	5"	4 1/4"	8 1/2"	10,000	5.3	16.50
P-3026	105-115	5.0 C.T.	3	C	3 1/4"	2 1/4"	2 1/4"	2,500	2.5	6.00
P-4084	115	5.0 C.T.	3	B	3 1/4"	2 1/4"	2 1/4"	2,500	2.0	4.80
P-3052	115	5.0 C.T.	6	B	3 1/4"	2 1/4"	2 1/4"	2,500	2.5	5.50
P-5000	105-115	5.0 C.T.	6	C	3 1/4"	2 1/4"	2 1/4"	2,500	3.2	6.50
P-6135	115	5.0 C.T.	10	N	3 1/4"	2 1/4"	3 1/4"	2,500	3.1	6.00
P-4086	105-115	5.0 C.T.	14	FA	5"	4 1/4"	8 1/2"	10,000	9.4	19.50
P-6302	105-115	5.0 C.T.	22	FA	5"	4 1/4"	8 1/2"	10,000	12.0	21.10
P-6305	105-115	5.0 C.T.	30	FB	5"	4 1/4"	10"	10,000	17.1	22.00
P-6137	115	5.25 C.T.	13	N	3 1/2"	3 1/4"	3 1/2"	2,500	4.2	7.60
P-6134	115	6.3 C.T.	1.2	A	1 1/4"	2 1/8"	1 1/2"	2,500	0.6	2.65
P-5014	115	6.3 C.T.	3	B	3 1/4"	2 1/4"	2 1/4"	2,500	2.0	4.50
P-4019	105-115	6.3 C.T.	4	C	3 1/4"	2 1/4"	2 1/4"	2,500	2.8	5.75
P-3064	115	6.3 C.T.	6	B	3 1/4"	2 1/4"	2 1/4"	2,500	2.4	5.50
P-4085	105-115	6.3 C.T.	6	C	3 1/4"	2 1/4"	2 1/4"	2,500	3.7	6.50
P-6308	105-115	6.3 C.T.	10	N	3 1/2"	2 1/8"	3 1/4"	2,500	4.0	6.40
P-6309	115	6.3 C.T.	20	N	4 1/2"	3 1/2"	3 1/2"	2,500	7.5	12.50
P-6015	115	7.5 C.T.	4	B	3 1/4"	2 1/4"	2 1/4"	2,500	2.5	4.50
P-4091	105-115	7.5 C.T.	5	C	3 1/4"	2 1/4"	2 1/4"	2,500	4.0	7.75
P-6138	115	7.5 C.T.	8	N	3 1/4"	3 1/4"	3 1/4"	2,500	4.1	7.60
P-4092	105-115	7.5 C.T.	8	C	3 1/4"	3 1/4"	3 1/4"	2,500	5.6	8.00
P-5016	115	10.0 C.T.	4	B	3 1/2"	3"	2 1/2"	2,500	3.0	6.00
P-4096	105-115	10.0 C.T.	5	C	3 1/4"	3 1/4"	3 1/4"	2,500	4.6	8.25
P-6139	115	10.0 C.T.	8	N	3 1/2"	3 1/4"	3 1/2"	2,500	4.1	7.45
P-4097	105-115	10.0 C.T.	8	C	3 1/4"	3 1/4"	3 1/4"	2,500	5.8	8.50
P-5002	105-115	10.0 C.T.	12	FA	5"	4 1/4"	8 1/2"	7,500	11.6	20.00
P-3020	105-115	11.0 C.T.	10	C	4 1/4"	3 1/4"	3 1/4"	2,500	7.8	12.50
P-6164	115	*6.3, 5, 2.5	2.5	B	2 1/4"	2 1/4"	2 1/4"	2,500	1.8	4.50

## Multiple Secondary

P-5009	105-115	5.0 C.T. 6.3 C.T.	3.0 6.0	C	3 1/2"	3 1/4"	3 1/2"	2,500	4.7	\$10.65
P-5008	105-115	5.0 C.T. 6.3 C.T.	4.0 3.6	A	3 1/2"	2 1/8"	3 1/4"	2,500	4.0	9.30
P-4022	105-115	5.0 C.T. 6.3 C.T.	6.0 6.0	C	3 1/2"	3 1/4"	3 1/2"	2,500	5.0	10.50
P-4090	115	6.3 C.T. 7.5 C.T.	3.0 4.0	B	3 1/2"	2 1/4"	3"	2,500	3.7	7.50
P-6144	115	2.5 C.T. 5.0 C.T. 6.3 C.T.	3.5 3.0 3.0	C	3 1/2"	2 1/8"	3 1/4"	2,500	4.0	9.70
P-6333	115	7.5, 6.3 C.T. *5.0 *5.0 *6.3	3.0 3.0 3.0 4.0	B	2 1/4"	3 1/2"	2 1/4"	2,500	4.6	10.25
P-6338	115	6.3 *2.5, *5.0 5.0 C.T.	3.0 2.0	N	3 1/2"	2 1/2"	2 1/4"	2,500	4.0	9.10

\* Windings not center tapped. Other voltage and frequency combinations available on special order. Write for quotations.







# TRANSFORMERS

REACTORS . . . POWER PACKS . . . TRANSMITTERS

Listings cover two distinct groups of transformers, universal or Poly-pedance and specific types. The latter group covers the most frequently used ratios, core sizes and mounting styles. They should be used in permanent installations whenever possible since their design permits the best efficiency and fidelity for units of this type. Poly-pedance

transformers are ideally suited for use in experimental or temporary equipment, such as schools, laboratories, etc., since they are provided with a large number of taps to permit the user to secure the widest practical range of impedance match. All units represent outstanding values.

## Modulation Transformers—Poly-Pedance

Stancor No.	Max. Aud. Watts	Pri. Ma. Per Side	Secondary Ma.		Type Mounting	Dimensions			Weight in Ctn.	List Price
			Series	Parallel		H	W	D		
A-3891	15	45	45	90	D	3 $\frac{3}{8}$ "	2 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "	2.5	<b>\$12.00</b>
A-3892	30	80	80	160	D	3 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{3}{8}$ "	6.0	<b>12.00</b>
A-3893	60	125	125	250	D	3 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "	4 $\frac{3}{8}$ "	7.3	<b>14.00</b>
A-3894	125	150	150	300	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	5"	12.0	<b>18.45</b>
A-3898	300	260	260	520	FS	7 $\frac{1}{8}$ "	7 $\frac{1}{8}$ "	9"	40.0	<b>57.85</b>
A-3899	600	350	350	700	FS	11 $\frac{1}{4}$ "	7 $\frac{1}{8}$ "	9"	75.0	<b>119.35</b>

## Plate Modulation Transformers

Stancor No.	Output Tubes	Class	Impedance		D.C. Pri. Ma.	D.C. Sec. Ma.	Max. Audio Watts	Type Mtg.	Dimensions			Wght. in Ctn.	List Price
			Pri.	Sec.					H	W	D		
A-3812	1-1G6, 1J6, 19, 6E6, 6G6, 6Z7; P.P. 1H4, 30, 49, 1-1G5, 6K6, 37, 38, 41	B A	10,000	4,000	32	50	5	A	1 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	0.7	<b>\$2.90</b>
A-3871	1-6B5*, 6F6*, 6L6, 6N6*, HY69	A1	4,500	8,500	60	50	10	TD	2 $\frac{1}{4}$ "	2 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	1.8	<b>\$5.75</b>
A-3873	P.P. 6L6, RK56, HY60	AB1	8,500	8,000	100	100	25	C	3 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	3 $\frac{3}{8}$ "	6.1	<b>8.80</b>
A-3845	1-6A6, 6N7, 53, 79, 6V7 P.P. 6F6, 6V6, 2A5, 42	B AB2	10,000	3,000, 5,000 6,500, 8,000	100	100	25	C	3 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "	3.5	<b>6.15</b>
A-3835	P.P. 2A3, 6A3, 45, 6A5, 6B4, 50; P.P. 6L6	AB A1	3,000 5,000	5,350, 8,350 10,000	80	100	25	C	3 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "	3 $\frac{1}{4}$ "	5.2	<b>7.90</b>
A-3868	P.P. 6L6	AB1	6,600	10,000, 12,000	100	70	35	C	3 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	3 $\frac{3}{8}$ "	6.1	<b>8.40</b>
A-3808	P.P. 6L6, 807, HY61, RK41 P.P. PAR. 6L6	AB2 AB1	3,800 3,300	4,000, 5,000 7,500, 10,000	260	170	60	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	4 $\frac{1}{4}$ "	7.7	<b>13.25</b>
A-2987	P.P. 10, T20, TZ20, HY25, 46, 801, 825, 841	B	8,000	3,300, 5,000 6,800, 9,000 12,500	200	150	90	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	5 $\frac{1}{4}$ "	10.2	<b>14.55</b>
A-2908	P.P. RK18, T20, TZ20, HY25, RK31, 35T, 50T, 800, 801, 830B, 1623	B	7,200 12,000	3,000, 4,500 5,350, 6,250	260	220	120	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	5 $\frac{3}{8}$ "	10.4	<b>15.35</b>
A-3829	P.P. RK12, HY25, 35T, HY40Z, T40, TZ40, 100TL, HK354, 756, 809, 830B	B	6,900 9,000	3,300, 4,000 5,000, 6,250	250	300	175	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	6 $\frac{1}{8}$ "	11.8	<b>16.55</b>

\* Secondary winding used as primary.

## Cathode Modulation Transformers

Stancor	Impedance		D.C. Pri. Ma.	D.C. Sec. Ma.	Max. Audio Watts	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
	Primary	Secondary					H	W	D		
A-3889	4000, 6000, C.T.	150, 250, 500, 750, 1000, 1500, 2000, 2500	125	450-250	60	D	3 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	4.8	<b>\$12.55</b>

## Line to R.F. Load Modulation Transformer

Stancor No.	Ohms Impedance		D.C. Sec. Ma.	Max. Audio Watts	Type Mtg.	Dimensions			Wgt. in Ctn.	List Price
	Primary	Secondary Load				H	W	D		
A-3866	500,200	5,000, 6,000, 7,000, 8,000, 9,000, 10,000	150	30	D	4 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "	6.5	<b>\$12.15</b>



# TRANSFORMERS



REACTORS

POWER PACKS

TRANSMITTERS

Two distinct groups of driver transformers are shown. Tapped or Poly-pedance and specific or fixed ratio types. Poly-pedance units are especially designed for experimental and laboratory work where it is desirable to change the turns ratio to optimum value. Two power ratings one of which is applicable to circuits employing inverse

feedback and two line drivers are available. Specific types are listed in the most frequently used ratios, core sizes and mounting styles. They should be used wherever possible in permanent installations because their design permits the best efficiency and fidelity for units of this type.

## Poly-Pedance Driver Transformers

Stancor No.	Capacity in Watts	Primary Ma. per Side	Ratio Primary to 1/2 Secondary	Type Mtg.	Dimensions			Weight in Ctn.	List Price
					H	W	D		
A-4761	15	60	1.25:1, 1.4:1, 1.6:1, 1.8:1, 2:1, 2.2:1, 2.4:1	CD	3 3/8"	2 3/8"	3 3/8"	3.0	\$13.00
A-4762	15	60	2.6:1, 3:1, 3.2:1, 3.4:1, 4:1, 4.5:1, 5:1	CD	3 3/8"	2 3/8"	3 3/8"	2.8	\$12.10
A-4763	30	120	1.25:1, 1.5:1, 1.75:1, 2:1, 2.25:1, 3.2:1	CD	3 3/8"	3"	4"	4.3	\$13.95

## Poly-Pedance Line Driver Transformers

Stancor No.	Capacity in Watts	Ratio Primary to 1/2 Secondary	Dimensions			Type Mtg.	Weight in Ctn.	List Price
			H	W	D			
A-4765	15	1:0.75, 1:0.85, 1:1, 1:1.25, 1:1.45, 1:1.75, 1:2, 1:2.25, 1:2.5, 1:2.75, 1:3.15	3 3/8"	2 3/8"	3 3/8"	CD	3.0	\$13.50
A-4766	30	1:0.75, 1:0.85, 1:1, 1:1.25, 1:1.45, 1:1.75, 1:2, 1:2.25, 1:2.5, 1:2.75, 1:3.15	3 3/8"	3"	3 3/8"	CD	4.0	\$14.85

## Driver Transformers

Stancor No.	From	To	Class	Impedance		Ratio Pri. to 1/2 Sec.	D.C. Pri. Ma.	Type Mtg.	Mounting Dimensions			Wgt. in Ctn.	List Price
				Pri.	1/2 Sec.				H	W	D		
A-4752†	P.P. or Sgl. 45, 6F6, 2A5, 42, 6K6, 6N7, 6C5	P.P. 6K6, 2A5, 42, 6F6, 6L6, 6V6, 6V6, 6Z7	AB	10,000	10,000 4,400 2,500	1:1 1.5:1 2:1	35	S	2 1/4"	2 3/8"	1 3/8"	1.5	\$4.00
A-4405	Sgl. 45, 6F6, 42, 2A5, 6K6, 41	PP. 42, 89, 2A5, 6F6, 6V6, 6Z7	B	10,000	6,400	1.24:1	40	C	3 3/8"	2 3/8"	2 3/8"	2.7	6.60
A-4721	Sgl. 2A3, 6A3, 45, 46, 59, 42, 6F6, 2A5, 89, 53, 6A6, 6N7, 6C5, 37, 30, 1H4	P.P. 1J6, 19, 79, 6Z7, 53, 6N7, 42, 45, 6F6, 46, 49, 2A5, 59, 89, 6K6, TZ20	B	10,000 22,500	2,500	2:1 3:1	30	TD	2 1/8"	2 3/4"	2 1/8"	1.5	5.70
A-4404	P.P. 2A3, 6A3, 45, 6L6, 6V6 P.P. PAR. 2A3 6F6, 50, 42, 59	P.P. 849 P.P. 800, 830B 10, RK18, HF100, 811 P.P. 154, 812, 203A, 838, 211, 203Z, RK38, HF100, 100TL, HF200, 822, HD203A, 354, 150T	A B	14,000	3,500	2:1	90	C	3 3/8"	3"	3 3/8"	3.7	7.30
A-4292	Sgl. 6C5, 6J5, 30, 1H4, 49	P.P. 1J6, 19, 79, 6Z7, 30, 1H4, 49	B	10,000	1,600	2.5:1	10	A	1 3/4"	2 13/16"	1 1/2"	0.7	2.60
A-4208†	P.P. 6C5, 6J5, 6N7, 6L5, 56, 27, 76, 55, 85, 6R7	P.P. 2A3, 2A5, 6A3, 6F6, 6L6, 6V6, 42, 45, 50, 59, 89	AB	25,000	3,200	2.79:1	15	C	3 3/8"	2 3/8"	2 3/8"	2.5	6.00
A-4210	Sgl. 2A3, 6A3, 45, 46, 59, 2A5, 6F6, 42, 89, 6C5, 6N7, 76	P.P. 2A3, 6A3, 46, 59 P.P. 2A5, 42, 45, 6F6, 6L6, 807	B AB	22,500	2,500	3:1	40	C	3 3/8"	2 3/8"	2 3/8"	2.6	5.50
A-4701†	P.P. 46, 89, 6C5, 6J5, 56, 37, 27, 76	P.P. 6L6, 6V6, 6V6, 42, 6F6, 45, 2A3, 6A3	AB1	20,000	2,200	3.1:1	25	C	3 3/8"	2 3/8"	2 3/8"	2.7	6.35
A-4212	P.P. 2A3, 6A3, 45, 6L6	P.P. 801, 830B 35T, 808, 838, RK57, HV40Z, 805, 828, 756, 100TL, 100TH, TZ20, T140, P.P. Par. 46, 59, PP. 807	B	25,600	2,500	3.2:1	50	C	3 3/8"	2 3/8"	2 3/8"	2.6	6.15
A-4216	Sgl. 53, 6A6, 6N7, 79, 6E6 P.P. 53, 6A6, 6N7	P.P. 53, 6A6, 6N7, 6E6, 6N6, 89 P.P. Par. 53, 6A6, 6N7	B	25,000	1,000	5:1	15	TD	2 1/8"	2 3/4"	2 1/8"	1.5	5.50
A-4416†	P.P. 2A3, 45, 46, 59, 6F6 P.P. 53, 6A6, 6N7	P.P. 6L6, 6V6, P.P. Par. 46, 59 P.P. Par. 53, 6A6, 6N7	AB2 B	30,000	1,200	5:1	40	C	3 3/8"	2 3/8"	2 3/8"	2.7	6.60
A-4702†	Sgl. 2A3, 45, 46, 89, 2A5, 6F6, 42	P.P. 6L6, 6V6, 6F6, 45 P.P. Par. 6L6	AB2 AB1	50,000	2,000	5:1	80	C	3 3/8"	2 3/8"	2 3/8"	2.7	5.80
A-4703†	P.P. 2A3, 45, 46, 6L6, 89, 6F6, 2A5, 42	P.P. 807, HV61 P.P. Par. 6L6	AB2	10,000	325	5.6:1	95	C	3 3/8"	3"	3 3/8"	3.8	7.50

† P.P. primary ratio is 2:1.

‡ Split Secondary.





# TRANSFORMERS

REACTORS

POWER PACKS

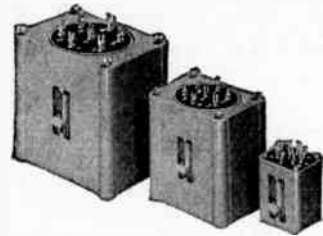
TRANSMITTERS

## HF AND WF SERIES HIGH FIDELITY AUDIO TRANSFORMERS

Wide range frequency response of these units will enhance the performance of the finest amplifier circuits, speakers, microphones and pickups.

Proper coil and core design reduces harmonic and intermodulation distortion to a negligible amount. Special coil construction reduces leakage inductance and distributed capacity, resulting in uniform high response. Balance hum-bucking construction and/or high permeability magnetic shielding minimize hum pickup. Nickel alloy laminations in the smaller units, where space is at a premium, result in improved low frequency response.

Vacuum impregnation and potted construction insure long life due to excellent protection against moisture. Sturdy cast cases are finished in flay gray enamel and contain four threaded holes at each end for flush mounting. Stud-type terminals are provided on a phenolic panel with all terminals plainly marked for easy identification.



### Low Impedance to Grid

Stancor No.	Application	Primary Impedance	Secondary Impedance	Response $\pm 1$ db from	Max. Pri. DC Ma. Unbalance	Max. Level in db	Hum Pickup Reduction	Mtg.	Wgt. Lbs.	List Price
HF-20	Low Imp. Mike, Pickup or Mult Line to Grid	50, 125, 200, 250, 333, 500/600	60,000 ohms overall, in two secs.	20 to 20,000 cps.	0.5	15	-74 db	HF-1	3	\$24.50
HF-20X	Low Imp. Mike, Pickup or Mult Line to Grid	50, 125, 200, 250, 333, 500/600	50,000 ohms	20 to 20,000 cps.	0.5	14	-92 db	HF-1	3	\$1.25
HF-22	Low Imp. Mike, Pickup or Mult Line to P.P. Grids	50, 125, 200, 250, 333, 500/600	120,000 ohms overall, in two secs.	20 to 20,000 cps.	0.5	15	-74 db	HF-1	3	\$27.50
HF-22X	Low Imp. Mike, Pickup or Line to P.P. Grids	50, 125, 200, 250, 333, 500/600	80,000 ohms overall, in two secs.	20 to 20,000 cps.	0.5	14	-92 dbQ	HF-1	3.0	\$4.25

### Interstage

HF-29	Sgl. Pl. to P.P. Grids—2A3, 6A3, 6B4-G, etc.	15,000 ohms	95,000 ohms overall	20 to 20,000 cps.	0.5	17	-50 db	HF-1	3	\$23.50
HF-31	Sgl. Pl. to P.P. Grids. Split pri. and sec.	15,000 ohms	135,000 Turns ratio 3:1 overall	20 to 20,000 cps.	....	14	-74 db	HF-1	3.0	\$4.00
HF-32	P.P. Plates to P.P. Grids. Split pri. and sec.	30,000 ohms-Plate to Plate	80,000 Turns ratio 1.6:1 overall	20 to 20,000 cps.	0.25	26	-50 db	HF-2	7.5	\$30.50

### Mixing

HF-40	Low Imp. Mixer, Mike, Pickup or Mult Line to Mult Line	50, 125, 200, 250, 333, 500/600 ohms	50, 125, 200, 250, 333, 500/600 ohms	20 to 20,000 cps.	0.5	17	-74 db	HF-1	3	\$24.50
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### Output

HF-65	P.P. 2A3, 6A3, 6B4-G, etc. to Line or VC	3,000 or 5,000 ohms Plate to Plate	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, or 500	25 to 20,000 cps.	0.5	20	—	HF-2	7.5	\$27.50
HF-67	P.P. 2A3's, 6A5-G's, 300A's, 275A's, 6A3's, 6L6's	3,000 or 5,000 Plate to Plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	20 to 20,000 cps.	0.5	20	....	HF-2	7.5	\$20.00
HF-68	P.P. Par. 2A3's, 6A5-G's, 300A's, 6A3's	1,500 or 2,500 Plate to Plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	20 to 20,000 cps.	....	40	....	HF-3	15.0	\$40.50

### Input

Stancor No.	Application	Primary Impedance	Secondary Impedance	Response $\pm 2$ db from	Mtg.	Wgt. Lbs.	List Price
WF-20	Low Imp. Mike, Pickup or Mult Line to Sgl. Grid	50, 125, 200/250, 333, 500/600	50,000 ohms	30-20,000	WF-6	.6	\$14.50
WF-21	Low Imp. Mike, Pickup or Mult Line to Sgl. or P.P. Grids	50, 200, 500	50,000 ohms	50-10,000 Multiple alloy shield for extremely low hum pickup	WF-6	.6	\$15.50
WF-22	Low Imp. Mike, Pickup or Line to P.P. Grids	50, 125/150, 200/250, 333, 500/600 ohms	80,000 ohms overall in two sections	30-20,000	WF-6	.6	\$14.50
WF-24	Dynamic Mike to 1 or 2 Grids	30 ohms	50,000 ohms in two sections	30-20,000	WF-6	.6	\$14.00

### Interstage

WF-26	Single Plate to Single Grid	15,000 ohms	60,000 ohms. 2:1 turns ratio	30-20,000	WF-6	.6	\$12.75
WF-28	Sgl. Pl. to 2 Grids. Can use split pri. for P.P. Pl.	15,000 ohms	80,000 ohms overall. 2.3:1 turns ratio overall	30-20,000	WF-6	.6	\$14.00

### Low Level Output

WF-34	Sgl. Pl. to Mult Line	15,000 ohms	50, 125, 200/250, 333, 500/600 ohms	30-20,000	WF-6	.6	\$14.50
WF-35	Single Plate to Multiple Line	15,000 ohms	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000	WF-6	.6	\$14.00
WF-36	P.P. Low Level Plates to Line	30,000 ohms Plate to Plate	50, 125/150, 200/250, 333, 500/600	30-20,000	WF-6	.6	\$15.00

### Mixing

WF-38	Low Imp. Mixer, Mike, Pickup or Mult Line to Mult Line	50, 125, 200/250, 333, 500/600 ohms	50, 125, 200/250, 333, 500/600 ohms	30-20,000	WF-6	.6	\$14.50
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Dimensions: HF-1 Case, 3 1/4" H x 3 1/4" W x 2 1/4" D. Mtg. ctrs., 1 1/4" x 2 1/8". HF-2 Case, 4 1/8" H x 4 1/8" W x 3 1/8" D. Mtg. ctrs., 2 1/4" x 3 1/4". HF-3 Case, 4 1/8" H x 5 1/8" W x 4 1/8" D. Mtg. ctrs., 4 1/8" x 5 1/8". WF-6 Case, 2" H x 1 1/2" W x 1 1/2" D. Mtg. ctrs., 1 1/8" x 1 1/8".



# "HS" (hermetically sealed) SERIES TRANSFORMERS

**D**URING World War II, it became apparent that even the best in pre-war transformer construction was not adequate protection against failure in the conditions prevalent in South Pacific combat areas. Hurried developments in sealing and fungicidal treatments achieved some data which was later amplified experimentally and codified under JAN-T-27 specifications and testing procedures. TRIAD hermetically sealed transformers of the "HS" Series come from a production line which has produced many thousands of transformers under these specifications. TRIAD "HS" Series Transformers feature:

**Wide range.** Frequency responses from 20-20,000 cycles within  $\pm 1$  db.

**Protection against stray fields.** The GP Series of drawn and annealed nickel-alloy cases, interlaced with high conductivity shading rings, reduce hum pickup by as much as 95 db.

**Small size.** High quality electronic equipment frequently must be portable, and not only in a truck. We call attention to the HS-11 and HS-1, affording 20-20,000 frequency range and adequate shielding in less than half the cubic volume of comparable pre-war transformer designs.

**Strong mechanical construction.** TRIAD's own hermetic seals, employing sturdy brass studs and low-loss molded plastics, minimize mechanical failure in production, service and storage.

**Attractive appearance.** Sturdy deep-drawn steel cases, of smoothly matching lines, and finished in attractive TRIAD gray, add much to the appearance of the equipment in which "HS" Series Transformers are used.

**Wide range power handling capacity.** TRIAD "HS" Series Output Transformers deliver their full power without distortion within  $\pm 3$  db. from 20-20,000 cycles. Low leakage reactance, low flux density, and ample quantities of the highest quality lamination alloy contribute to this result.

**Dependability.** Liberally designed and accurately wound transformers of low temperature rise; "Climatite" treated, poured with silica-filled asphalt of high heat conductivity, rigidly supported, and hermetically sealed, TRIAD leaves no step untaken to supply the best in quality transformers.

## "HS" Series Audio INPUT Transformers

Type No.	Application	Primary Impedance	Turn Ratio	Freq. Resp.	Max. Level VU Shielding	Case No.	List Price
HS-1	Univ. line or mike to grid.	600*/250*/150/62.5	1:11.4	20-20000	10 P-5	GP-4	\$32.50
HS-11	Same as above.				P-1	GP-2	22.50
HS-4	Univ. line or mike to p.p. class A grids.	600*/250*/150/62.5	1:4 over-all	20-20000	10 P-3	GP-4	34.00
HS-14	Same as above.				P-1	GP-3	24.00
HS-5	Dynamic mike to grid—Hi-gain.	30-50*	1:65.7	50-10000	0 P-5	GP-4	32.50
HS-8	Line to p.p. class A grids—Hi-level.	600*/250*/150/62.5	1:10 over-all	20-20000	26 P-1	GP-4	32.50

\*Balanced center tap available.



Only TRIAD transformers are

## "HS" Series Audio INTERSTAGE Transformers

Type No.	Application	Primary Impedance	Turn Ratio	Freq. Resp.	Max. Level Pri. Volts	Shielding	Case No.	List Price
HS-23	Single plate to single grid.	15000	1:3	20-20000	15 P-3	GP-4	\$22.50	
HS-25	Single plate to p.p. class A grids.	15000	1:2.72 over-all	20-20000	25 P-1	GP-4	24.00	
HS-35	Single plate to p.p. class A grids.	15000	2:2.72 over-all	20-20000	20 P-1	GP-2	18.00	
HS-27	P.p. plate to p.p. class A grids.	20000/5000	1:1.72 over-all	20-20000	50 P-1	G-P4	25.00	
HS-29	Bridgleg-line to 1 or 2 grids.	20000/5000	1:2 over-all	20-20000	20 P-5	GP-4	32.50	

**CLIMATITE TREATED**

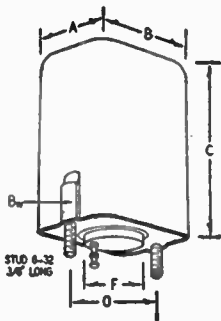
—the improved and exclusive vacuum impregnation process used on all TRIAD transformers.

# TRIAD TRANSFORMER MFG. CO.



# "HS" (hermetically sealed) SERIES TRANSFORMERS

## "HS" Series LOW LEVEL OUTPUT, MIXING, MATCHING and BRIDGING Transformers

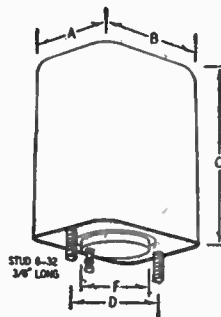


	GP-1	GP-2	GP-3
A	7/8	1 1/8	1 1/4
B	1 1/8	1 1/4	1 1/2
BW	1 1/8	1 3/8	1 5/8
C	1 1/4	2 1/4	2 3/4
D	1 1/8	1 1/8	1 1/2
F	3/4	3/4	7/8
Wt.	3 oz.	5 1/2 oz.	8 oz.

Type No.	Application	Impedance		Freq. Resp.	Max. Level-VU	Shielding	Case No.	List Price
		Primary	Secondary					
HS-50	Plate to universal line	15000	600*/250*/150/62.5	20-20000	26	P-1	GP-4	\$25.00
HS-60	Plate to universal line	15000	600*/250*/150/62.5	20-20000	10	P-1	GP-2	18.00
HS-62	P.p. plates to universal line.	20000/5000	600*/250*/150/62.5	20-20000	26	P-1	GP-4	27.50
HS-54	Bridging, single or p.p. plates, to univ. line.	20000/5000	600*/250*/150/62.5	20-20000	10	P-5	GP-4	32.50
HS-56	Universal line to universal line.	600*/250*/150/62.5	600*/250*/150/62.5	10-30000	20	P-3	GP-4	32.50
HS-66	Same as above.			10-30000	20	P-1	GP-3	22.50

\*Balanced center tap available.

## "HS" Series HIGH LEVEL OUTPUT Transformers Tube to Line — Tube to Voice Coil — Line to Voice Coil



	GP-4	GP-5
A	1 1/8	1 5/8
B	1 3/4	2
C	2 1/2	2 3/4
D	1 1/2	1 1/2
F	7/8	7/8
Wt.	12 oz.	17 oz.

Type No.	Application	Impedance		Freq. Resp.	Max. Level-Watts	Case No.	List Price
		Primary	Secondary				
HS-81	P.p. 6V6's to voice coil	8000/2000	16/8/4	20-20000	15	GP-9	\$27.50
HS-82	As above—to line.	8000/2000	500/250/125	20-20000	15	GP-9	27.50
HS-84	P.p. 2A3's, 6B4's, 6L6's, etc. to V.C.	5000/1250	16/8/4	20-20000	20	GP-9	27.50
HS-85	As above—to line.	5000/1250	500/250/125	20-20000	20	GP-9	27.50
HS-87	P.p. 6L6's, AB1 to V.C.	9000/2250	16/8/4	20-20000	25	GP-10	32.50
HS-88	As above—to line.	9000/2250	500/250/125	20-20000	25	GP-10	32.50
HS-91	P.p. par. 2A3's, 6L6's, etc. to V.C.	2500/625	16/8/4	20-20000	40	GP-11	45.00
HS-94	P.p. par. 6L6's to V.C.	4500/1125	16/8/4	20-20000	55	GP-12	55.00
HS-95	As above—to line.	4500/1125	500/250/125	20-20000	55	GP-12	55.00
HS-97	P.p. 845's AB1 to line.	6600/1650	500/250/125	20-20000	125	GP-14	105.00
HS-101	Line to par. line auto-former.	500	500/250/167/125/100/88/71	20-20000	30	GP-10	32.50
HS-103	Line to V.C. autoformer.	500	16/8/4	20-20000	30	GP-10	27.50

SHIELDING AGAINST STRAY FIELDS AVAILABLE IN "HS" Series

### AUDIO TRANSFORMERS

P-1 — One nickel-alloy high permeability shield — 45 db. reduction in pickup.

P-3 — Two nickel-alloy shields inter-leaved with one heavy copper shodding ring — 70 db. reduction in pickup.

P-5 — Three nickel-alloy shields inter-leaved with two heavy copper shodding rings—95 db. reduction in pickup.

## POWER Transformers, Combined Plate and Filament

Type No.	Plate Supply		Filaments	Case No.	List Price
	A.C. Volts	D.C. Mo.			
HS-201*	500 C.T.	20	6.3 C.T.— 2A	GP- 8	\$12.50
HS-205	700 C.T.	70	6.3 C.T.— 3A 5 — 3A	GP-10	21.60
HS-207	700 C.T.	120	6.3 C.T.— 5A 5 — 3A	GP-11	24.50
HS-211	700 C.T. 70 bias Tap	150	6.3 C.T.— 6A 5 — 3A 2.5 C.T.— 5A	GP-13	26.25
HS-215	800/700 C.T. 70 bias Tap	200	6.3 C.T.— 6A 5 — 6A 2.5 C.T.— 10A	GP-14	31.00
HS-217	800/700 C.T. 70 bias Tap	300	6.3 C.T.— 8A 5 — 6A 2.5 C.T.— 10A	GP-15	36.00

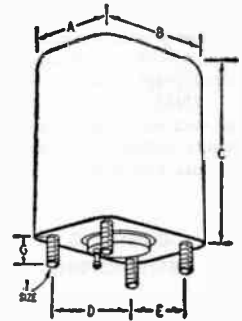
\*Low flux density—for pre-amplifier service.

... For HIGHEST QUALITY EQUIPMENT



## FILAMENT Transformers

Type No.	Primary Volts	Secondary Volts	Amps.	Insulation Test Voltage	Case No.	List Price
HS-225	105-115-125	6.3 C.T.	2	2500	GP- 6	\$7.50
HS-229	105-115-125	6.3 C.T.	8	2500	GP- 9	12.50
HS-231	105-115-125	5 C.T. 6.3 C.T.	3	2500	GP- 9	13.25
HS-235	105-115-125	2.5 C.T. 10 C.T.	10 10	7500 2500	GP-11	17.50



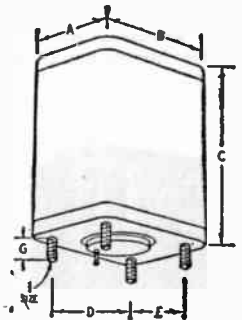
## Filter REACTORS

Type No.	Current D.C. Ma.	Inductance Henries	Resistance Ohms	Test Voltage	Case No.	List Price
HS-301	20	30	1000	1500	GP- 6	\$7.75
HS-305	70	15	300	2500	GP- 7	9.00
HS-307	120	15	185	2500	GP- 9	12.50
HS-309	150	9	115	2500	GP- 9	12.50
HS-315	200	10	100	2500	GP-10	15.00
HS-319	300	10	85	2500	GP-13	21.00

	GP-6	GP-7	GP-8	GP-9	GP-10
A	2	2 3/4	2 3/4	3	3 1/2
B	2 1/4	2 3/4	2 1/2	3 1/4	3 1/2
C	2 3/4	3	3 1/4	3 3/4	4 1/4
D	3 1/4	1 1/4	1 1/4	2 1/4	2 1/4
E	1 3/4	1 1/4	1 1/4	2 1/4	2 1/4
G	1/2	1/2	1/2	1/2	1/2
I	8-32	8-32	8-32	10-32	10-32
Wt.	1 1/4	1 1/4	2	4 1/2	6 1/2

## "TRIJETTS"- Midget Hermetically Sealed Transformers

"Trijets" are midget hermetically sealed transformers for use wherever good quality and portable operation must be combined. Originally, "Trijets" were designed to meet the requirements for "Miniaturization" developed by the Armed Service and have been used in many types of military equipment. "Trijets" are linear in frequency response from 50-10,000 cycles and will handle operating levels up to + 10 dbm. "Trijets" are 15/16" in diameter and mount on 2-56 studs spaced 9/16". Case JOA is 1-13/32" long, weighs 1 1/4 oz. Case JOB is 1-25/32" long, weighs 1 1/2 oz.



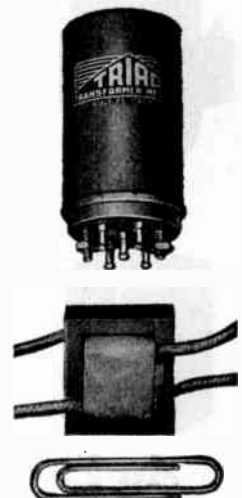
Type No.	Application	Impedance Primary	Secondary Impedance	Shielding	Case No.	List Price
JO-1	Line or mike to grid.	600/250/50	50000	P-1	JO-A	\$12.50
JO-3	Line or mike to p.p. grids.	600/250/50	60000 C.T.	P-1	JO-A	13.25
JO-5	Dyn. mike or speaker VC to grid.	30/12/4	50000	P-1	JO-B	12.50
JO-11	Plate to grid.	15000	50000	P-1	JO-B	11.75
JO-12	Plate to p.p. grids.	15000	60000 C.T.	P-1	JO-B	12.50
JO-21	Plate to line.	15000	600/250/50	P-1	JO-B	12.50
JO-23	P.p. plates to line.	20000 C.T.	600/250/50	P-1	JO-B	13.25
JO-31	Line to line.	600/250/50	600/250/50		JO-B	12.50
JO-101	Coupling Reactor.	50h @ 2ma.			JO-B	10.00

	GP-11	GP-12	GP-13	GP-14	GP-15
A	3 1/4	3 1/4	4 1/4	4 1/4	4 1/4
B	3 1/4	3 1/4	4 1/4	5	5 1/4
C	4 1/4	4 1/4	5 1/4	5 1/4	6 1/4
D	2 1/4	2 1/4	3 1/4	4	4 1/4
E	2 1/4	2 1/4	3 1/4	3 1/4	3 1/4
G	1/2	1/2	1/2	1/2	1/2
I	10-32	10-32	1/4-20	1/4-20	1/4-20
Wt.	7 1/2	9 1/2	12	16	22

## Uncased "TRIJETTS"

Uncased "Trijets" are 3/8" x 3/8" x 9/16". Weight less than 1/2 oz. Paper clip shows relative size.

Type No.	Application	Primary Impedance	Secondary Impedance	List Price
T-1	Line or mike to grid.	600/250/50	50000	\$4.25
T-5	Dynamic mike or speaker VC to grid.	30/12/4	50000	4.25
T-21	Plate to line.	30000	50	4.25
T-101	Coupling Reactor.	50 henries @ 1ma.		4.00





# TRANSFORMERS for REPLACEMENT . . .

**POWER COMPONENTS**—TRIAD is a major source of transformers for use in radio and television receivers. Selections from popular production designs, plus simplification and combination of their best design features, result in a group of transformers having maximum utility, although low in cost. These transformers are exact replacements for much commercial equipment and have great utility in industrial applications, for PA amplifiers, and for amateur gear.

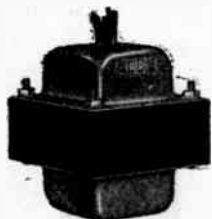
TRIAD transformers of this general purpose group are beautifully finished in gray enamel. All types are "Climate" treated, both coil and core, for protection against moisture and for elimination of lamination chatter. Although they are small in size, the high quality materials used keep losses to a minimum and hold temperature rise below 55°C. Only copper foil static shields, grounded to the case and core, are used. Leads are of a type approved by UL for high temperature operation.

## ORDERING INSTRUCTIONS

TRIAD transformer numbers are so arranged as to indicate the type of transformer and type of mounting. The prefix letter indicates the type of transformer. For example: A=Audia. Type of mounting is indicated by the suffix letter which refers to the illustration. For example: A-1X=Audia transformer in X case.



CASE A



CASE B



CASE K

## POWER Transformers, Combined Plate and Filament

Type No.	Plate Supply		Filament Amperes			Dim.—Inches			Wt. Lbs.	List Price
	Volts	DC Ma.	5V.	6.3V. C.T.	2.5V. C.T.	H	W	D		
*R-3A	500 C.T.	20		2		2 3/4	2 1/2	2 3/8	1 3/4	\$4.75
R-5A	600 C.T.	65		2.7		3 1/8	2 3/8	3	2 3/4	5.25
R-7A	600 C.T.	50	2	2		3 3/8	2 3/8	3	2 3/4	6.30
R-7B	600 C.T.	50	2	2		3 1/2	3	2 1/2	2 3/4	6.00
R-9A	600 C.T.	75	2	3		3 3/8	3	3 3/8	3 1/2	6.75
R-9B	600 C.T.	75	2	3		3 3/8	3 3/8	2 1/8	3 1/2	6.40
R-11A	700 C.T.	90	3	3.5		3 3/8	3	3 3/8	4	7.35
R-11B	700 C.T.	90	3	3.5		3 1/8	3 3/8	2 1/8	4	6.70
R-14A	700 C.T.	125	3	4.5		4	3 1/4	3 3/8	4 3/4	9.10
R-14B	700 C.T.	125	3	4.5		3 3/8	3 3/8	3 3/8	4 3/4	8.25
R-16A	700 C.T.	160	3	5		4	3 1/4	4 1/8	6	10.20
R-16B	700 C.T.	160	3	5		4 1/8	3 3/8	3 1/8	6	9.40
R-17A	750 C.T. (80v tap).	160	3	5	5	4 1/8	3 3/8	4 1/4	7 1/4	12.40
R-19A	750 C.T. (80v tap).	200	3	6	10	4 3/8	3 3/8	4 1/2	9 1/4	16.00
R-21A	800 C.T.	200	3	6		4 1/8	3 3/8	4 1/4	7 1/4	13.80
R-24A	800 C.T.	300	6	6		4 3/8	3 3/8	5 1/2	13	17.70

\*Low flux density—for pre-amplifiers.

## POWER Transformers, Cathode Ray and Television

Type No.	Plate Supply		Filaments—Volts and Amps.		Dim.—Inches			Wt. Lbs.	List Price
	Volts	DC Ma.			H	W	D		
R-31A	760 C.T.	320	5V.—6A. 5V.—2A.	12.6 C.T.—5A.	4 3/4	3 3/8	6	15	\$20.50
R-32A	760 C.T.	320	5V.—6A. 6.3V.—1.2A.	12.6 C.T.—5A.	4 3/4	3 3/8	6	15	20.50
R-34A	750 C.T.	230	5A.—3A. 6.3V.—1.2A.	6.3V.—8.5A.	4 3/4	3 3/8	4 3/4	10 1/2	14.50
R-36A	775 C.T.	275	5V.—6A. 6.3V.—1.2A.	6.3V.—8.5A.	4 3/4	3 3/8	5 1/4	12	16.70
R-41C	440-0-440-1250.	125/5	*6.3V.—6A. †2.5V.—1.75A.	†2.5V.—1.75A. 5V.—3A.	4 1/8	4 1/8	3 7/8	7 1/4	19.70
R-45C	400-0-400-800.	30/5	*6.3V.—6A. 6.3 C.T.—3A. †5V.—2A.	6.3V.—1A. 5V.—2A.	3 3/4	3 3/4	3 1/8	3 1/2	14.25

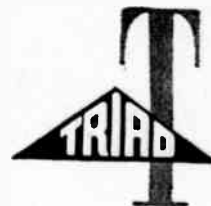
\*Statically shielded and insulated for full plate voltage.

†Insulated for full plate voltage.

## VIBRATOR Transformers

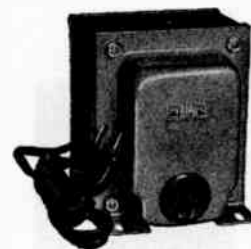
Type No.	Primary Volts	Secondary		Dim.—Inches			Wt. Lbs.	List Price
		Volts	DC Ma.	H	W	D		
V-1K	6-8	450 C.T.	40	3	2 1/2	2 3/8	2 1/4	\$6.50
V-3K	6-8	500 C.T.	50	3	2 1/2	2 3/8	2 1/2	7.00
V-5A	6-8	600 C.T.	75	3 1/8	2 3/8	2 3/8	2 1/2	7.50
V-7A	6-8	600 C.T.	100	3 1/8	3	3 1/4	3 1/2	9.90

# . . . AMATEUR and ORIGINAL EQUIPMENT



## STEPDOWN Autoformers

Type No.	V. A. Output	Input Volts	Output Volts	Dim.—Inches			Wt. Lbs.	List Price
				H	W	D		
N-1X	50	230	115	2¼	3½	2½	1½	\$4.35
N-3M	85	230	115	3½	3	2¾	2¾	7.75
N-5M	250	230	115	4	3¼	3½	4¾	12.00
N-7M	500	230	115	4¾	3¾	5	11½	18.00
N-9M	1000	230	115	5¾	4½	5	22	32.00
N-11M	2000	230	115	5¾	4½	7	27	55.00



CASE M

## ISOLATION Transformers

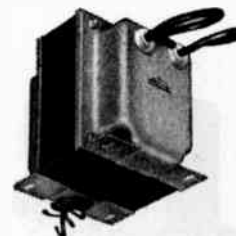
Type No.	V. A. Output	Input Volts	Output Volts	Dim.—Inches			Wt. Lbs.	List Price
				H	W	D		
N-51X	35	115	115	2¼	3½	2¾	1¾	\$4.95
N-53M	85	115	115	3½	3	3¾	4	9.50
N-55M	250	115	115	4¾	3¾	5	11½	21.00
N-57M	500	115	115	5¾	4½	5	22	33.50
N-59M	1000	115	115	5¾	4½	7	27	55.00
†N-60	2000	230/115	230/115					95.00

†Special case.

## PLATE POWER Transformers

Type No.	Secondary Volts		Sec. DC Mo.		Rect. Fil.	Dim.—Inches			Wt. Lbs.	List Price
	AC	DC	CC5	ICAS		H	W	D		
P-1A	440/220 C.T.	180/90	160	190	5V.-3A.	3½	3	3¾	4½	\$7.05
P-3A	600/300 C.T.	250/125	300	360	5V.-4A.	4	3¼	3½	5¾	10.40
P-5A	1100 C.T.	400	250	310	5V.-3A.	4¾	3¾	4	7½	13.75
P-7A	1235 C.T.	500	250	310	5V.-3A.	4¾	3¾	4¾	9½	15.60
P-9A	1235 C.T.	500	500	600	5A.-6A.	5¾	4½	5¼	20	27.50
P-11A	1455 C.T.	600	250	310		4¾	3¾	5¼	11½	18.00
*P-13A	1780 C.T.	750	250	310		5¾	4½	4¾	12	24.00
*P-15A	2340 C.T.	1000	250	310		5¾	4½	5¼	15	27.00
*P-17A	2880 C.T.	1250	250	310		5¾	4½	6½	21	32.50

\*Plate leads out side of case for 866 rectifiers.

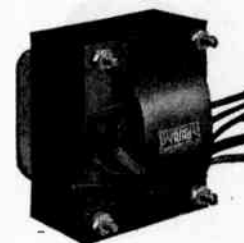


CASE A

Leads out side for 866 plates

## FILAMENT Transformers

Type No.	Secondary		Test Volts	Dim.—Inches			Wt. Lbs.	List Price
	Volts	Amperes		H	W	D		
F-1X	2.5 C.T.	3	1500	1½	2½	1½	¾	\$2.30
F-3X	2.5 C.T.	10	3000	2¼	3½	2¼	1¾	3.25
F-5U	2.5 C.T.	10	7500	3½	2½	2½	2	5.95
F-7X	5 C.T.	3	1500	1½	3¼	1¾	1¼	3.25
F-9U	5.2 C.T.	13	1500	3¾	2½	3	3½	6.50
F-11U	5.2 C.T.	24	1500	3¾	3¾	3¼	5½	9.00
F-14X	6.3 C.T.	1.2	1500	1½	2½	1½	¾	2.30
F-16X	6.3 C.T.	3	1500	1½	3¼	1¾	1¼	3.25
F-18A	6.3 C.T.	6	1500	3½	2¾	2¾	2¼	5.95
F-21A	6.3 C.T.	10	1500	3½	3	3¾	3½	7.50
F-23U	10 C.T.	7	1500	3½	3	3¾	4	6.05
F-27U	10 C.T.	10	1500	4½	3½	3	7	9.00
F-30A	5 C.T.	3	1500	3½	3	3¾	3½	7.50
	6.3 C.T.	8	1500					
F-32A	6.3 C.T.	3	1500	3½	2¾	3	2½	7.00
	6.3 C.T.	3	1500					



CASE C

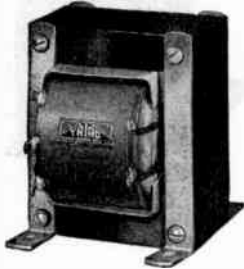




# TRANSFORMERS for REPLACEMENT . . .

## SWINGING Filter REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS	Dim.—Inches			Wt. Lbs.	List Price
					H	W	D		
C-31A	25/5	20/200	150	2500	3 <sup>1</sup> / <sub>8</sub>	3	3 <sup>1</sup> / <sub>8</sub>	4	\$5.70
C-33A	25/5	30/300	105	3000	4 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>4</sub>	8.75
C-35A	20/4	40/400	60	3000	4 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	13.75
C-39A	25/5	50/500	65	3000	5 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	5	16 <sup>1</sup> / <sub>2</sub>	19.50



CASE U

## SMOOTHING Filter REACTORS

Type No.	Inductance Henries	Current Ma.	Resistance Ohms	Test Volts RMS	Dim.—Inches			Wt. Lbs.	List Price
					H	W	D		
C-1X	15	20	1000	1500	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1/4	\$1.25
C-3X	10	50	500	1500	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	3/4	1.45
C-5X	12	75	400	1500	1 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	1 <sup>7</sup> / <sub>8</sub>	1	1.80
C-7X	10	90	270	1500	1 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>4</sub>	2.05
C-10X	9	125	250	1500	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	2.60
C-12X	6	160	165	1500	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	2.85
C-14X	6	200	150	1500	2 <sup>3</sup> / <sub>8</sub>	4	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3.25
C-15X	4	250	100	1500	2 <sup>3</sup> / <sub>8</sub>	4	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3.20
C-16A	10	200	150	2500	3 <sup>3</sup> / <sub>8</sub>	3	3 <sup>3</sup> / <sub>8</sub>	4	5.70
C-17X	1.5	300	40	1500	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	2.85
C-18A	8	300	90	2500	4	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	7.20
C-19A	10	300	105	3000	4 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>4</sub>	8.75
C-20A	8	400	60	3000	4 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	13.75
C-22A	10	500	65	3000	5 <sup>3</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	5	16 <sup>1</sup> / <sub>2</sub>	18.75



CASE X

**AUDIO COMPONENTS**—TRIAD general purpose audio transformers and reactors are designed for specific applications in electronic equipment. "Climatite" treatment is used in all types. Size is kept to a minimum by use of high quality materials. Cased types are finished in durable and attractive gray enamel. Static and magnetic shielding is used wherever the application indicates that these are needed. Heavy steel cases are used to prevent shifting and breakage, even on heavy duty mobile equipment.

## INPUT Transformers, Line or Microphone to Grid

Type No.	Application	Primary Impedance Ohms	Turn Ratio	Dim.—Inches			Wt. Lbs.	List Price
				H	W	D		
A-1X	Line or single button mike to grid.	100	31.4	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1/4	\$2.10
A-3X	Line or d.b. mike to grid.	400 C.T.	15.8	1 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1/4	2.25
A-5X	Single button mike to p.p. grids—Hi-gain.	100	84	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	3/4	3.25
A-7J	Speaker VC (3.2 ohms) to grid. 40 d.b. shielding	3.2	31.6	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	1/8	3.75
A-9J	Line or mike to grid 30-15000 cycles 60 d.b. shielding.	600/250/50	12	2 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1/4	9.35



CASE J

## Special TRANSCEIVER Transformers

Type No.	Application	Impedance-Ohms		Dim.—Inches			Wt. Lbs.	List Price
		Primary	Secondary	H	W	D		
A-21X	SB mike and plate to grid (2 pri.).	100 10000	100000	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	1/4	\$2.10
A-23X	Tube to line and hi-impedance phones.	10000	50 and 2000	1 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>8</sub>	1/2	2.25

# . . . AMATEUR and ORIGINAL EQUIPMENT



## INTERSTAGE Transformers, Plate to Grid

Type No.	Application	Impedance—Ohms			Ratio	Dim.—Inches			Wt. Lbs.	List Price
		Primary	Secondary			H	W	D		
A-31X	Plate to single or p.p. grids.	10000	90000	1:3	1 3/8	2 3/8	1 3/8	1/2	\$2.10	
A-33X	Plate to single or p.p. grids.	10000	90000	1:3	1 1/8	3 1/4	1 3/8	1	3.00	
A-35A	Plate to single or p.p. grids.	10000	90000	1:3	2 3/4	2 3/8	2 1/4	1 3/4	4.60	
A-39A	P.p. plates to p.p. grids.	20000 C.T.	45000	1:1.5	2 3/4	2 3/8	2 1/4	1 3/4	4.85	
A-40J	Parallel-fed 6J5 or 6SN7. Plate to p.p. grid. 30-15000 cycles 60 db. shielding.	15000	86000	1:2.76	2 1/4	1 3/8	1 3/8	1/4	9.25	

### ORDERING INSTRUCTIONS

TRIAD transformer numbers are so arranged as to indicate the type of transformer and type of mounting. The prefix letter indicates the type of transformer. For example: A=Audio. Type of mounting is indicated by the suffix letter which refers to the illustration. For example: A-1X= Audio transformer in X case.

## Equalizing REACTORS

Type No.	Application	Ind.	DC Ma.	Res. Orms	Dim.—Inches			Wt. Lbs.	List Price
					H	W	D		
*A-71K	Simple pentode equalizer—hi and low frequency.	2 160	2 2	100 8000	3 1/8	3	2 1/2	2	\$7.00
*A-73J	Choke for cathode equalizer.	15	0	750	1 3/8	1 3/8	1 3/8	1/2	4.80
**A-74J	Choke for cathode equalizer.	15	0	750	1 3/4	1 3/8	1 3/8	3/4	7.50

\*40 db. alloy shielding. \*\*70 db. alloy shielding.

## TELEVISION AUDIO Transformers

Type No.	Application	Ratio	Dim.—Inches			Wt. Lbs.	List Price
			H	W	D		
A-97X	Blocking oscillator transformer for vertical sweep.	1:4.14	1 3/8	2 1/8	1 1/4	1/4	\$2.10
A-97K	Same—encased.	1:4.14	1 3/4	2 3/8	1 1/2	1/2	3.00
A-99X	Output—to couple vertical output tube to deflection coll.	10:1	2 1/4	3 1/8	2 1/8	1 1/2	4.20
A-101U	Same—different mounting.	10:1	3	2 1/2	2 1/4	2	5.60



CASE K

## LOW LEVEL OUTPUT Transformers

Type No.	Application	Primary Impedance	Ohms Sec.	Dim.—Inches			Wt. Lbs.	List Price
				H	W	D		
A-51X	Tube to line.	7000	50	1 3/8	2 1/8	1 1/4	1/4	\$2.10
A-53X	Single or p.p. tubes to line.	18000 C.T.	600/250/50	1 1/8	2 1/8	1 1/2	3/4	2.50
A-55J	Parallel-fed 6J5 or 6SN7 to line. 30-15000 cycles 60 db. shielding.	15000	600/250/50	2 1/4	1 3/8	1 3/8	1/4	9.25

## HIGH FIDELITY OUTPUT Transformers

Type No.	Primary		Secondary Impedance	Output Watts	Dim.—Inches			Wt. Lbs.	List Price
	Tubes Used	Impedance			H	W	D		
S-31A	P.P. 6Y6, 45, etc.	8000 C.T.	4-8-16	15	3 1/8	2 3/8	3 3/8	3 1/2	\$8.75
S-33A	P.P. 2A3, 6A5, 6B4, etc.	3000 C.T.	4-8-16	15	3 1/8	2 3/8	3 3/8	3 1/2	8.75
S-35A	P.P. 2A3, 6L6, etc.	5000 C.T.	4-8-16	18	3 1/8	2 3/8	3 3/8	4	9.50
S-38A	P.P. 6L6, class A.	9000 C.T.	4-8-16	25	3 1/2	2 3/8	4 1/4	5 3/4	12.50
S-40A	P.P. par. 2A3, 2A3, etc.	2500 C.T.	4-8-16	30	3 1/2	2 3/8	4 1/4	5 3/4	12.50
S-42A	P.P. par. 6L6, class A.	4500 C.T.	4-8-16	50	4 1/4	3 1/2	4 5/8	8 3/4	17.50
S-45Z	70 volt line.	4000/2000/ 1000/500	4-8	10	2 5/8	3 3/8	2 1/4	2	4.75
S-46A	70 volt line.	2000/1000/ 500/250	4-8-16	20	3 1/8	2 3/8	3 3/8	4	11.00



CASE A



# TRANSFORMERS for REPLACEMENT AMATEUR and ORIGINAL EQUIPMENT

## REPLACEMENT OUTPUT Transformers

Type No.	Primary Tubes Used	Impedance	DC Ma.	Audio Watts	Dim.—Inches			Wt. Lbs.	List Price
					H	W	D		
S-1X	25L6, 50L6, 35A5, 50B5, 2A3, 6B4, etc.	2500	60	3	1 3/8	2 3/8	1 1/4	1/2	\$1.40
S-3X	6V6, 7C5, 6AQ5, 25A6, 71, etc.	5000	40	3	1 3/8	2 3/8	1 1/4	1/2	1.45
S-5Z	6V6, 7C5, 6AQ5, 25A6, 71, etc.	5000	50	5	2 1/8	2 7/8	1 3/4	1 1/4	2.50
S-7X	6K6, 7B5, 6F6, 1Q5, 31, 33, 41, 42, etc.	7500	40	3	1 3/8	2 3/8	1 1/4	1/2	1.45
S-9Z	6K6, 7B5, 6F6, 1Q5, 31, 33, 41, 42, etc.	7500	50	5	2 1/8	2 7/8	1 3/4	1 1/4	2.60
S-11X	1J6, 3Q4, 3V4, 6AK6, 6AG7, etc.	10000	30	2	1 1/8	2 1/8	1 1/8	1/4	1.55
S-13X	1A5, 1N6, 1LA4.	25000	10	2	1 1/8	2 1/8	1 1/8	1/4	1.55
S-15X	P.p.—6V6, 7C5, 6K6, 6F6, etc.	10000 C.T.	40	7	1 3/8	2 1/8	1 1/2	3/4	2.35
S-19Z	P.p.—6V6, 7C5, 6K6, 6F6, etc.	10000 C.T.	50	10	2 1/8	2 7/8	1 3/4	1 1/4	2.95
S-21A	P.p.—6V6, 7C5, 45, 6L6, etc.	8000 C.T.	50	15	2 3/4	2 1/8	2 3/8	2 1/4	4.40
S-23X	Line to VC. autoformer.	50/3.2	0	3	1 1/8	2 1/8	1 1/8	1/4	1.75
S-25Z	70 volt line to VC.	4000/2000/ 1000/500 to 4-8	0	10	2 1/4	2 7/8	1 7/8	1	3.00



CASE X

## DRIVER Transformers

Type No.	Driver Tubes	Output Tubes	Ratio Primary 1/2 Sec.	Primary DC Ma.	Dim.—Inches			Wt. Lbs.	List Price
					H	W	D		
A-81X	30, 1H4, etc.	P.p. 19, 30's, 1J6, etc.	2.66:1	15	1 1/8	2 1/8	1 1/4	1/4	\$2.10
A-83X	6F6, 42, 45, etc.	P.p. 6L6, 6F6, 6V6, 8Q7, etc.	1.33:1	40	1 1/8	2 1/8	1 1/2	3/4	2.40
A-85X	6F6, 42, 45, etc.	P.p. 6L6, 6F6, 6V6, 8Q7, etc.	1.33:1	40	1 1/8	3 1/4	1 7/8	1 1/4	2.90
A-89A	P.p. plates to class B or AB grids—Universal 15 watt.	Any class B or AB tubes. 100-500 watts output.	3.1 or 2.2:1	100 per side	3 1/8	2 3/8	2 7/8	2 3/4	7.20
A-91A	P.p. plates to class B or AB grids—Universal 30 watt.	Any class B or AB tubes. 400-1500 watts output.	3.1 or 2.2:1	160 per side	3 1/8	3	3 3/8	3 1/2	12.50



CASE Z

## MODULATION Transformers, Tube to RF Load

Type No.	Primary	Secondary		Watts Audio	Dim.—Inches			Wt. Lbs.	List Price
		Impedance	Mo.		H	W	D		
M-1X	10000 C.T. for 19, 1J6, 6N7, 6A6, etc.	5000-8000-10000	50	5	1 1/8	2 1/8	1 1/4	1/4	\$2.25
M-3X	10000 C.T. for 6N7, 6A6, 6F6's, etc.	3000-5000-8000	100	20	2 1/4	3 1/8	2 1/8	1 1/2	4.35
M-7A	4250 C.T. for 8Q7's.	3000-5000-8000	200	60	4 1/8	3 3/8	4	6	12.50

**A** MORE COMPLETE listing of TRIAD transformers is contained in Catalog TR-49A. Other TRIAD products include: TRIAD GEOPFORMERS (Geophysical Transformers), individually calibrated components used in measuring equipment of laboratory precision for geophysical exploration. Specifications and prices contained in Catalog GP-49; TRIAD HERMETIC TERMINALS, used for hermetically sealed transformers, relays, etc. Specifications and prices contained in Bulletin TD-49; TRIAD TOROIDS for wave filters, afford almost perfect inductors for this purpose. Specifications and prices contained in Bulletin TO-49. (All above catalogs and bulletins free on request).

# TRIAD TRANSFORMER MFG. CO.







Skillful Engineering, latest production techniques and highest quality materials . . . backed by careful workmanship, exacting step-by-step inspection and rigorous final testing . . . are combined in every SNC transformer to provide a quality product that gives MORE in dollar value.

### AUDIO TRANSFORMERS—THE "ONE" SERIES

#### AUDIO INPUT

Type Number	Application	Impedance		Pri. Mils (D.C.)	Max. Turns Ratio	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions				Net Wt.	List Price
		Primary	Secondary			50	200	1M	5M	10M		A	B	C	D		
1P121	P.M. Speaker to Grid	4	100,000	0	1:158	-4.0	-1.0	0	0	0	BL	1-7/8	1-9/16	1-1/2	2	.5	2.90
1P124	S.B. Mic. to Sgl. or P.P. Grids	100	400,000 C.T.	50	1:63	-6.0	-0.0	0	-2.0	-6.0	BL	1-7/8	1-9/16	1-1/2	2	.5	3.10
1P125	Low Z to Sgl. or P.P. Grids	50	100,000 C.T.	0	1:45	-3.0	0	0	0	0	BL	1-7/8	1-9/16	1-1/2	2	.5	2.85
1P128	Sgl. or D.B. Mic. or Line to Sgl. or P.P. Grids	200*/50	100,000 C.T.	50	1:45	-2.0	-0.3	0	-0.7	-2.0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.3	4.50
1P136	Line to Sgl. or P.P. Grids	500*/125	90,000 C.T.	0	1:28	-3.0	-0.4	0	-0.4	-1.5	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.4	4.50
1P145	Sgl. or P.P. Plates to Line	20,000 C.T.	500*/125	0	12.6:1	-3.5	-1.0	0	0	0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	3.70
1P152	Sgl. or P.P. Plates to Line	20,000 C.T.	200*/50	0	20:1	-4.0	-1.0	0	0	0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	3.70
1P161	Line to Line	500	500*/125	0	2:1	-0.4	-0.1	0	-0.4	-1.0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	4.00

\*Indicates Balanced Center Tap

#### AUDIO INTERSTAGE

1P323	Sgl. Plate to Sgl. Grid	10,000	90,000	0	1:3	-5.0	-1.5	0	0	0	DL	1-7/8	1-9/16	1-1/2	2	.5	2.70
1P331	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-6.0	-2.0	0	-1.0	0	DL	1-7/8	1-9/16	1-1/2	2	.5	2.90
1P339	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-3.0	-0.5	0	+0.1	+0.5	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	3.25
1P342	Sgl. Plate to P.P. Grids	10,000	90,000 C.T.	0	1:3	-2.5	-0.5	0	0	0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	4.20
1P346	P.P. Plates to P.P. Grids	20,000 C.T.	45,000 C.T.	10	1:1.5	-1.0	-0.2	0	0	0	DL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	4.35
1P351	Universal			0	1:3	-2.0	-0.4	0	0	0	DL	2-1/4	1-7/8	1-13/16	2-3/8	.9	3.45
3P363	Sgl. Type 30 to 19, 1J5 or P.P. 30 Class B	10,000	7,000 C.T.	0	2.4:1	-0.5	0	0	-0.2	-1.0	DL	1-7/8	1-9/16	1-1/2	2	.5	2.35

#### AUDIO REACTORS

### CHOKES AND REACTORS—THE "TWO" SERIES

Type Number	D.C. Mils		Inductance				Insul. Test Voltage	D.C. Res.	Mtg. Style	Dimensions					Net Weight	List Price
	Nom.	Max.	0-D.C.	50% Nom. D.C.	Nom. D.C.	Max. D.C.				A	B	C	D	E		
2P123	5-0.5	15	550	—	300-300	80	2000	5500	AL	1-7/8	2-1/4	1-5/8	2-13/16		.9	2.90
2P124	5-0.5	15	550	—	300-300	80	2000	5500	CL	1-7/8	2-1/4	1-3/4	2-13/16		.9	3.25
2P126	35-15	45	65	—	25-35	20	2000	800	AL	1-7/8	2-1/4	1-5/8	2-13/16		.9	2.30
2P127	35-15	45	65	—	25-35	20	2000	800	CL	1-7/8	2-1/4	1-3/4	2-13/16		.9	2.70

#### FILTER AND SWINGING CHOKES

2P132	40	50	22	13	0	6	2000	450	AL	1-5/16	1-5/8	1-1/8	2		.3	1.50
2P135	65	80	18	11	0	7	2000	300	AL	1-9/16	1-7/8	1-3/8	2-3/8		.5	1.80
2P138	85	100	30	16	0	7	2000	350	AL	1-7/8	2-1/4	1-7/8	2-13/16		1.2	2.35
2P141	110	135	20	10.5	0	7	2000	200	DL	2-5/8	2-3/16	1-7/8	2-13/16		1.5	3.10
2P142	110	135	20	10.5	0	7	2000	200	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	3.25
2P144	150	180	26	13	0	5.5	2000	190	BL	3	2-1/2	2-1/8	3-1/8		2.1	3.10
2P145	150	180	26	13	0	5.5	2000	190	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.2	4.20
2P147	200-	250	16	10	0	6.5	3500	110	GL	3-1/2	2-7/8	3-1/8	2-1/4	2	3.2	5.40
2P148	200-20	—	—	—	3-15	—	3500	110	GL	3-1/2	2-7/8	3-1/8	2-1/4	2	3.2	5.40
2P151	300	350	10	11	0	7	5000	75	GL	4-5/8	3-3/4	3-7/8	3	2-13/16	7.5	9.25
2P152	300-30	—	—	—	3-15	—	5000	75	GL	4-5/8	3-3/4	3-7/8	3	2-13/16	7.5	9.25
2P155	500	600	16	10	0	9.5	5000	95	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.8	26.00
2P156	500-50	—	—	—	3-15	—	5000	95	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.8	26.00

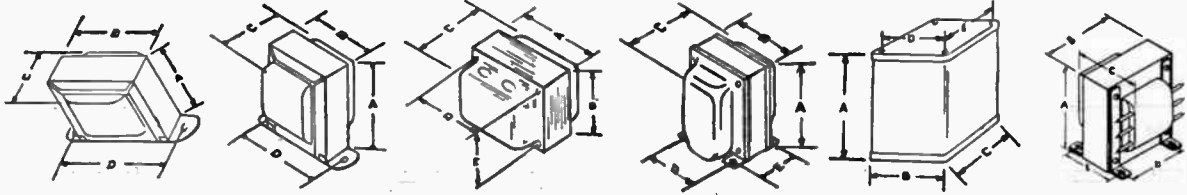
### DRIVER TRANSFORMERS—THE "THREE" SERIES

Type Number	Primary Impedance	Watts	Ratio, Pri. to 1/2 Sec. or Sec. Z	Pri. D.C. Mils	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions					Net Wt.	List Price
					50	200	1M	5M	10M		A	B	C	D	E		
3P323	6,000 C.T. to 10,000 C.T.	25	6, 5.5, 5:1	60	-0.5	0	0	0	-0.3	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	5.40
3P328	3,000 C.T. to 5,000 C.T.	25	6, 5.5, 5:1	60	-0.4	0	0	0	-0.1	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	5.40
3P334	6,000 C.T. to 10,000 C.T.	25	4.5, 4, 3.5:1	60	-1.0	-0.3	0	+0.1	+0.6	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	8.30
3P338	3,000 C.T. to 5,000 C.T.	25	4.5, 4, 3.5:1	60	-1.7	-0.5	0	0	0	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	8.45
3P342	6,000 C.T. to 10,000 C.T.	25	3, 2, 1:1	60	-0.7	-0.1	0	+0.1	-0.4	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	9.00
3P347	3,000 C.T. to 5,000 C.T.	25	3, 2, 1:1	60	-0.8	0	0	0	-0.8	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	8.65
3P353	6,000 C.T. to 10,000 C.T.	25	500 Ohms	60	-1.1	-0.3	0	0	+0.3	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	9.50
3P358	3,000 C.T. to 5,000 C.T.	25	500 Ohms	60	-0.9	-0.1	0	-0.4	-1.0	GL	3-1/8	2-1/2	2-5/8	2	1-11/16	2.3	8.50
3P363	10,000	5	2.4:1	10	-0.5	0	0	-0.2	-1.0	BL	1-7/8	1-9/16	1-1/2	2		.5	2.35

See next page for Dimensional Illustrations.



**DIMENSIONAL ILLUSTRATIONS**



**OUTPUT TRANSFORMERS—THE "SIX" SERIES**

**SPECIFIC DUTY REPLACEMENT TYPES—TUBE TO VOICE COIL**

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Sec. Z—Dhms	Watts	Mtg. Style	Dimensions				Net WL	List Price
						A	B	C	D		
6P300	Single 2,000 Plate	50	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	1.90
6P306	Single 4,000 Plate	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	1.50
6P312	Single or P.P. 7,500 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.00
6P316	Single or P.P. 10,000 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.00
6P319	Push-Pull 15,000 Plates	35	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.05
6P321	Push-Pull 20,000 Plates	30	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.05
6P325	Push-Pull 25,000 Plates	20	3-6	6	AL	1-5/16	1-5/8	1-1/2	2	.3	2.05

**UNIVERSAL REPLACEMENT TYPES—TUBE TO VOICE COIL—TUBE TO LINE—LINE TO VOICE COIL**

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Sec. Z—Dhms	Watts	Mtg. Style	Dimensions				Net WL	List Price
						A	B	C	D		
6P165	Sgl. or P.P. 4M to 14M Plates	40	1.1 to 14	4	ATL	1-5/16	1-5/8	1-3/8	2	.3	2.35
6P166	Sgl. or P.P. 4M to 14M Plates	50	1.1 to 14	8	ATL	1-9/16	1-7/8	1-5/8	2-3/8	.5	2.35
6P167	Sgl. or P.P. 3M to 10M Plates	50	1.2 to 13	15	BTL	1-7/8	1-9/16	1-3/4	2	.5	2.90
6P169	Sgl. 1500 to 7M Plate	55	.8 to 19	10	ATL	1-9/16	1-7/8	1-5/8	2-3/8	.5	2.35
6P172	P.P. 3500 to 12M Plates	60	1.3 to 14	20	BTL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	4.25
6P701	Single 2500 to 7500 Plate	45	165 to 1500	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	3.70
6P710	P.P. 7500 to 15M Plates	45	250 to 1000	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	4.20
6P714	Sgl. or P.P. 2500 to 12M Plates	45	150 to 2400	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	4.40
6P717	125 to 500 Line	0	1 to 32	35	BTL	2-5/8	2-3/16	2-1/8	2-13/16	1.5	4.50
6P722	500 to 3M Line in 500-Dhm Steps	0	1.3 to 48	10	BTL	2-1/4	1-7/8	1-7/8	2-3/8	.9	4.25

**AMPLIFIER AND EQUIPMENT TYPES—TUBE TO LINE AND VOICE COIL**

Type Number	Primary Imp.—Dhms	Pri. D.C. Mils	Secondary Imp.—Dhms	Watts	Frequency Characteristics—c. p. s.					Mtg. Style	Dimensions					Net WL	List Price
					50	200	1M	5M	10M		A	B	C	D	E		
					6P726	P.P. 3300 or 3000 Plates	90	4-8-16-250-500	60		-0.3	0	0	+0.1	+0.5		
6P731	P.P. 4500 or 6000 Plates	90	4-8-16-250-500	60	-0.3	0	0	+0.2	0	GL	3-3/4	3-1/16	3-3/8	2-1/2	2-3/16	4.4	8.90
6P736	P.P. 5000 Plates	70	4-8-16-250-500	25	-0.9	-0.2	0	+0.2	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	6.00
6P740	P.P. 4300 Plates	70	4-8-16-250-500	25	-0.9	-0.3	0	+0.3	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	6.00
6P743	P.P. 6800 Plates	70	4-8-16-250-500	25	-0.7	-0.1	0	+0.2	+0.5	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	6.00
6P746	P.P. 8000 Plates	70	4-8-16-250-500	25	-0.7	-0.1	0	+0.1	+0.3	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	6.00
6P749	P.P. 10,000 Plates	60	4-8-16-250-500	25	-0.4	-0.1	0	+0.2	+0.3	DL	2-5/8	2-3/16	2-1/8	2-13/16		1.5	6.30
6P752	Sgl. 2500 Plate	60	4-8-16-250-500	10	-3.0	-0.4	0	+0.3	+0.5	DL	2-1/4	1-7/8	2-1/8	2-3/8		1.0	4.75

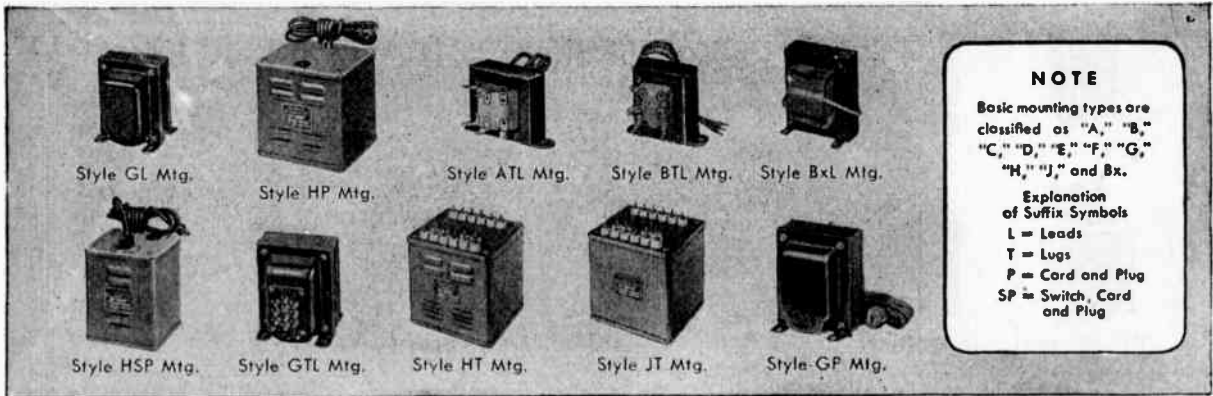
**MODULATION TRANSFORMERS—THE "FIVE" SERIES**

SNC universal modulation transformers are specifically designed to provide maximum application possibilities per type. All units are provided with two identical secondary windings, permitting series or parallel operation. Changes in the ratio can be readily accomplished, when desired, without removing the unit from the chassis. Most units available in either air cooled or compound filled cases.

**UNIVERSAL TYPES**

Type Number	Watts	Primary Current Mils	Secondary Characteristics				Primary Impedance Dhms	Mtg. Style	Dimensions					Net Weight	List Price
			Series Sec.		Parallel Sec.				A	B	C	D	E		
			Impedance	Mils	Impedance	Mils									
5P341	15	60	2M to 18M	50	500 to 4500	100	3M to 8M	DL	2-5/8	2-3/16	2-3/8	2-13/16		1.5	7.50
5P346	50	80	2M to 18M	75	500 to 4500	150	3M to 15M	GTL	3-7/8	3-1/8	3-3/8	2-1/2	2-3/16	4	11.75
5P352	100	120	2M to 18M	100	500 to 4500	200	3M to 15M	GTL	4-5/8	3-3/4	3-7/8	3	2-13/16	9.7	18.75
5P354	200	200	2M to 18M	150	500 to 4500	300	3M to 15M	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	24	43.00
5P355								JT							
5P357	300	250	2M to 18M	250	500 to 4500	500	3M to 15M	HT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	33	52.00
5P358								JT							
5P363	500	300	2M to 18M	300	500 to 4500	600	3M to 15M	HT	10-3/4	6-1/2	7-1/4	5-3/8	6-1/8	51	105.00
5P364								JT							

**S N C MANUFACTURING CO., INC., OSHKOSH, WISCONSIN**



Skillful Engineering, latest production techniques and highest quality materials . . . backed by careful workmanship, exacting step-by-step inspection and rigorous final testing . . . are combined in every SNC transformer to provide a quality product that gives MORE in dollar value.

### POWER TRANSFORMERS—THE "EIGHT" SERIES

All units conservatively rated for operation on either 50 or 60 cycles and contain an electrostatic shield between primary and all other windings

#### REPLACEMENT TYPES (6.3 Volt Heater Winding)

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P040	117	265-0-265	40	5V. @ 2A.	6.3V. @ 2A.	FL	3	2-1/2	2-3/4	2-1/2	2	2.3	4.50
8P055	117	300-0-300	55	5V. @ 2A.	6.3V. @ 2.5A.	FL	3	2-1/2	3-1/8	2-1/2	2	2.8	4.55
8P070	117	325-0-325	70	5V. @ 2A.	6.3V. @ 3A.	FL	3	2-1/2	3-1/2	2-1/2	2	3.2	5.75

#### HEAVY DUTY REPLACEMENT AND NEW EQUIPMENT TYPES (6.3 Volt Heater Winding)

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P180	117	265-0-265	40	5V. @ 2A.	6.3V. @ 2A.	FL	3	2-1/2	3-1/4	2-1/2	2	3.2	6.15
8P180G	117	265-0-265	40	5V. @ 2A.	6.3V. @ 2A.	GL	3-1/16	2-7/32	3-1/8	2	2-3/16		
8P183	117	300-0-300	50	5V. @ 2A.	6.3V. @ 2A.	FL	3-3/8	2-13/16	3-7/16	2-13/16	2-1/4	3.5	6.50
8P183G	117	300-0-300	50	5V. @ 2A.	6.3V. @ 2A.	GL	3-7/16	2-27/32	3-1/4	2-1/4	2-1/8		
8P186	117	325-0-325	60	5V. @ 2A.	8.3V. @ 3A.	FL	3-3/8	2-13/16	3-11/16	2-13/16	2-1/4	4.0	6.85
8P186G	117	325-0-325	60	5V. @ 2A.	8.3V. @ 3A.	GL	3-7/16	2-27/32	3-1/2	2-1/4	2-3/8		
8P189	117	350-0-350	70	5V. @ 3A.	6.3V. @ 3.5A.	FL	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	5.0	7.50
8P189G	117	350-0-350	70	5V. @ 3A.	6.3V. @ 3.5A.	GL	3-15/16	3-5/32	3-5/8	2-1/2	2-7/16		
8P192	117	350-0-350	90	5V. @ 3A.	6.3V. @ 4A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.7	8.25
8P192G	117	350-0-350	90	5V. @ 3A.	6.3V. @ 4A.	GL	3-15/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P194	117	375-0-375	110	5V. @ 3A.	6.3V. @ 4A.	FL	3-3/4	3-1/8	4-1/8	3-1/8	2-1/2	6.0	9.25
8P194G	117	375-0-375	110	5V. @ 3A.	6.3V. @ 4A.	GL	3-13/16	3-5/32	4	2-1/2	2-15/16		
8P196	117	350-0-350	150	5V. @ 3A.	6.3V. @ 4.8A.	FL	4-1/8	3-7/16	4-3/8	3-7/16	2-3/4	7.7	9.75
8P196G	117	350-0-350	150	5V. @ 3A.	6.3V. @ 4.8A.	GL	4-3/16	3-15/32	4-3/8	2-3/4	3-5/16		
8P199	117	400-0-400	70	5V. @ 3A.	6.3V. @ 3.5A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.8	8.75
8P199G	117	400-0-400	70	5V. @ 3A.	6.3V. @ 3.5A.	GL	3-13/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P202	117	450-0-450	200	5V. @ 3A.	6.3V. @ 5A.	FL	4-1/2	3-3/4	4-3/4	3-3/4	3	10.7	12.50
8P202G	117	450-0-450	200	5V. @ 3A.	6.3V. @ 5A.	GL	4-9/16	3-25/32	4-3/8	3-3/4	3-11/16		
8P205	117	450-0-450	325	5V. @ 6A.	6.3V. @ 8A.	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22.3	34.00
8P208	117	550-0-550	275	5V. @ 6A.	6.3V. @ 6A.	HT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	34.00

#### REPLACEMENT TYPES (2.5 Volt Heater Winding)

8P287	117	350-0-350	70	5V. @ 3A.	2.5V. @ 6A.	FL	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	5.9	7.50
8P293	117	350-0-350	90	5V. @ 3A.	2.5V. @ 8A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	6.6	8.15
8P295	117	350-0-350	150	5V. @ 3A.	2.5V. @ 12A.	FL	4-1/8	3-7/16	4-3/8	3-7/16	2-3/4	7.2	9.75

#### REPLACEMENT TYPES (Two 2.5 Volt Heater Windings)

8P487	117	350-0-350	70	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A. No. 2 = 2.5V. @ 8A.	FL	3-3/4	3-1/8	4	3-1/8	2-1/2	5.8	9.00
8P487G	117	350-0-350	70	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A. No. 2 = 2.5V. @ 8A.	GL	3-13/16	3-5/32	3-7/8	2-1/2	2-11/16		
8P494	117	375-0-375	110	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A. No. 2 = 2.5V. @ 10A.	FL	3-3/4	3-1/8	4-1/4	3-1/8	2-1/2	6.2	9.85
8P494G	117	375-0-375	110	5V. @ 3A.	No. 1 = 2.5V. @ 3.5A. No. 2 = 2.5V. @ 10A.	GL	3-13/16	3-5/32	4-1/8	2-1/2	2-15/16		

#### GENERAL PURPOSE TYPES WITH CONVENIENT LUG TERMINALS (6.3 Volt Heater Winding)

Type Number	Primary Voltage	R.M.S.—High Volt. Secondary	Pri. D.C. Mils	Rectifier Filament	Heater Winding Center Tapped	Mtg. Style	Dimensions					Net WL	List Price
							A	B	C	D	E		
8P382	117	300-0-300	50	5V. @ 2A.	6.3V. @ 2A.	ET	3-3/8	2-13/16	3-7/16	2-13/16	2-1/4	3.2	5.90
8P385	117	325-0-325	60	5V. @ 2A.	6.3V. @ 3A.	ET	3-3/8	2-13/16	3-11/16	2-13/16	2-1/4	4.0	6.35
8P388	117	350-0-350	70	5V. @ 3A.	6.3V. @ 3.5A.	ET	3-3/4	3-1/8	3-3/4	3-1/8	2-1/2	4.7	6.90

#### BIAS TYPES

8P510	117	40-0-40	25	5V. @ 2A.		CL	1-7/8	2-1/4	1-3/4	2-13/16	1.0	3.75	
8P511	117	0-90-150-200-250	50	5V. @ 2A.		GL	3-1/16	2-7/32	2-5/8	2	1-11/16	2.0	5.45

#### VIBRATOR TYPES

8P610	6	225-0-225	40			AL	2-3/16	2-5/8	2	3-1/8	1.3	4.25	
8P611	6	320-0-320	40			GL	3-1/16	2-7/32	2-1/2	2	1-9/16	2.1	5.10
8P612	6	380-0-380	60			GL	3-7/16	2-27/32	3-5/16	2-1/4	2-3/16	3.7	5.75

See opposite page for Dimensional Illustrations





**NOTE**  
 Basic mounting types are classified as "A," "B," "C," "D," "E," "F," "G," "H," "J," and Bx.  
 Explanation of Suffix Symbols  
 L = Leads  
 T = Lugs  
 P = Card and Plug  
 SP = Switch, Card and Plug

**PLATE TRANSFORMERS—THE "SEVEN" SERIES**

All SNC plate transformers have dual secondary ratings. Most units available in either air cooled or compound filled cases. All units contain electrostatic shields between primary and high voltage windings.

Type Number	Primary Voltage	Pri. V.A.	Secondary R.M.S. Voltage	D.C. Voltage From Filter*	D.C. Current	Mtg. Style	Dimensions					Net Wt.	List Price
							A	B	C	D	E		
7P530	115-230	220	920-0-920 or 740-0-740	750 or 600	200MA	GL	4-3/4	3-3/4	5-1/8	3	4-1/16	12	15.00
7P535 7P536	115-230	320	930-0-930 or 750-0-750	750 or 600	300MA	HT JT	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	22 30	35.00 40.00
7P542 7P543	115-230	530	1470-0-1470 or 1220-0-1220	1250 or 1000	300MA	HT JT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	33 41	42.00 46.00
7P551 7P552	115-230	750	2050-0-2050 or 1740-0-1740	1750 or 1500	300MA	HT JT	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	43 51	45.00 55.00
7P557 7P558	115-230	1060	2880-0-2880 or 2350-0-2350	2500 or 2000	300MA	HT JT	10-3/4	6-1/2	7-1/4	5-3/8	6-1/8	53 69	62.00 67.00
7P563 7P564	115-230	1760	2900-0-2900 or 2370-0-2370	2500 or 2000	500MA	HT JT	10-3/4	9	7-1/4	7	5-13/16	96 126	90.00 125.00

\*All units may be operated with simultaneous leads—provided the total D.C. current of the two leads does not exceed the rating listed.

**FILAMENT TRANSFORMERS—THE "FOUR" SERIES**

Most SNC Filament Transformers are constructed to provide two identical center tapped secondary windings and offer a minimum of three applications. They provide three-fold the number of possible applications of ordinary filament types. A few are single secondary units and are so designated. All have 117 V. 50/60 cycle primary.

Type Number	Applications			Test Voltage	Mtg. Style	Dimensions					Net Wt.	List Price
	Parallel Secondaries	Series Secondaries	Independent Identical Secondaries			A	B	C	D	E		
4P222	2.5V. C.T. @ 5 A.	5 V. C.T. @ 2.5 A.	Two of 2.5V. C.T. @ 2.5 A.	2000	BL	2-1/4	1-7/8	1-3/4	2-3/8		1.0	2.95
4P226*	2.5V. C.T. @ 10 A.*			7500	BL	3	2-1/2	2-3/8	3-1/8		2.0	4.60
4P227	2.5V. C.T. @ 10 A.	5 V. C.T. @ 5 A.	Two of 2.5V. C.T. @ 5 A.	2000	BL	2-5/8	2-3/16	2	2-13/16		1.5	4.00
4P234	2.5V. C.T. @ 15 A.	5 V. C.T. @ 7.5 A.	Two of 2.5V. C.T. @ 7.5 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.2	4.75
4P239	5 V. C.T. @ 6.5A.	10 V. C.T. @ 3.25A.	Two of 5 V. C.T. @ 3.25A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.2	4.25
4P242*	5 V. C.T. @ 20 A.*			10000	BxL	4-1/8	3-7/16	2-3/4	2-3/4	2-1/8	4.6	8.50
4P243	5 V. C.T. @ 20 A.	10 V. C.T. @ 10 A.	Two of 5 V. C.T. @ 10 A.	2000	BxL	3-3/4	3-1/8	2-3/4	2-1/2	2-1/4	4.3	7.50
4P244*	6.3V. C.T. @ 0.6A.*			2000	BL	1-7/8	1-9/16	1-1/2	2		.6	2.90
4P245*	6.3V. C.T. @ 1.2A.*			2000	BL	1-7/8	1-9/16	1-5/8	2		.7	3.15
4P246	6.3V. C.T. @ 2 A.	12.6V. C.T. @ 1 A.	Two of 6.3V. C.T. @ 1 A.	2000	BL	2-1/4	1-7/8	1-3/4	2-3/8		1.0	3.50
4P251	6.3V. C.T. @ 6 A.	12.6V. C.T. @ 3 A.	Two of 6.3V. C.T. @ 3 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.0	4.05
4P256	6.3V. C.T. @ 10 A.	12.6V. C.T. @ 5 A.	Two of 6.3V. C.T. @ 5 A.	2000	BxL	3-3/8	2-13/16	2-1/2	2-1/4	2-1/8	2.9	5.25
4P260	7.5V. C.T. @ 3 A.	15 V. C.T. @ 1.5 A.	Two of 7.5V. C.T. @ 1.5 A.	2000	BL	2-5/8	2-3/16	2	2-13/16		1.5	4.25
4P267	7.5V. C.T. @ 4.5A.	15 V. C.T. @ 2.3 A.	Two of 7.5V. C.T. @ 2.3 A.	2000	BL	3	2-1/2	2-1/4	3-1/8		2.0	5.25
4P272	11 V. C.T. @ 10 A.	22 V. C.T. @ 5 A.	Two of 11 V. C.T. @ 5 A.	2000	BxL	3-3/4	3-1/8	2-3/4	2-1/2	2-1/4	4.1	7.50

\*Single secondary units

**VOLTAGE CHANGER AND ISOLATION—THE "NINE" SERIES**

All Units Have Primary Card and Secondary Plug and Are For 50/60 Cycle Operation

**VOLTAGE CHANGER (ISOLATION)**

Type Number	Primary Voltage	Secondary Voltage	Capacity in V. A.	Mtg. Style	Dimensions					Net Wt.	List Price
					A	B	C	D	E		
9P707	220-250	110-125	75	GP	3-13/16	3-5/32	3-1/8	2-1/2	1-15/16	3.9	7.75
9P713	220-250	110-125	150	GP	4-9/16	3-25/32	3-7/8	3	2-13/16	8.0	11.50
9P718	220-250	110-125	350	HP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	30.00

**ISOLATION TYPES**

9P721	110-250	110-250	150	GP	4-9/16	3-25/32	4-5/8	3	3-9/16	12.1	15.00
9P725	110-250	110-250	250	HP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	24.50
9P728	110-250	110-250	500	HP	7-1/8	6-1/2	7-1/4	5-3/8	6-1/8	34.8	34.50

**VOLTAGE ADJUSTMENT TYPES WITH TAP CHANGE SWITCH**

9P732	95-130 In 5V. Steps	115	150	HSP	4-7/8	3-7/8	3-7/8	3-1/8	3-1/8	4.7	21.00
9P737	95-130 In 5V. Steps	115	250	HSP	5-3/8	4-3/8	4-1/4	3-5/8	3-1/2	8.0	27.50
9P739	80-130 In 5V. Steps	115	500	HSP	7-1/8	5-1/2	5-15/16	4-3/8	4-13/16	23.3	41.00

All list prices given are subject to regular trade discounts and may be changed without notice.

**S N C MANUFACTURING CO., INC., OSHKOSH, WISCONSIN**

See Page 2 for Dimensional Illustrations

# THORDARSON TRANSFORMERS

## NEW STREAMLINED SERIES

This is the new Thordarson post-war series of Transformers and Chokes. Every unit has been designed for utmost efficiency and adaptability. Many of the engineering and production advancements developed by Thordarson during the war, are used in producing this line.

The new lamination alloys and insulating material, incorporated in this series, results in superior performance, a greater factor of safety without an increase in size or weight. Consequently, some types are smaller and more compact

without sacrificing efficiency or performance.

Finished in baked grey enamel and fitted with matched mounting styles, the units present a uniform appearance. This is especially desirable where several Transformers and Chokes are mounted on the same chassis.

Types for Radio Receiver Replacement, Amateur Radio, Sound Systems and allied applications, can be selected from this listing.



FGV



BAH



Z



RTV



RAV

### AUDIO INPUT TRANSFORMERS

Type No.	List Price	Mtg.	Application	Ohms Impedance		Turns Ratio	Mtg. Centers	Dimensions			Wt. Lbs.	
				Primary	Secondary			W.	D.	H.		
T-20A00	\$2.90	BAH	Line or mic to single or push-pull grids*	600 Ct.	60,000 Ct.	1:10	2	2 3/8	1 1/4	1 1/8	3/8	
				200 Ct.	20,000 Ct.							
T-20A01	4.60	FGV	Line or mic to single grid†	600 Ct.	240,000 Ct.	1:20	2 3/8	2 3/8	1 3/8	2 3/8	1 1/8	
				200 Ct.	80,000 Ct.							
T-20A02	4.50	FGV	Line or mic to push-pull grids§	600 Ct.	240,000 Ct.	1:20	2 3/8	2 3/8	1 3/8	2 3/8	1 1/8	
				200 Ct.	80,000 Ct.							
T-20A03	4.30	BAH	Single plate and mic or line to grid*	5,000 to 10,000	100,000	1:3.25	2 3/8	2 1/8	1 3/8	1 3/8	3/8	
				200	250,000							
T-20A04	2.90	BAH	Voice coil or mic to grid*	3 to 6	38,400	1:80	2	2 3/8	1 3/8	1 1/8	3/8	
				50	320,000							
T-20A05	10.60	RTV	Line or mic to single or push-pull grids§ (Hum-bucking coil and core—fully potted)	600 Ct.	60,000 Ct.	1:10	1 1/8	1 1/8	Diam.	2	3/8	
				200 Ct.	20,000 Ct.							
T-20A06	10.60	RTV	Line to Line (Hum-bucking coil and core—fully potted)	600 Ct.	600 Ct.	1:1	1 1/8	1 1/8	1 1/8	Diam.	2	3/8
				200 Ct.	200 Ct.							
				50 Ct.	50 Ct.							
T-20A40	25.00	Z	Microphone cable input transformer†	30 to 60	50,000	1:31.6		1	Diam.		2 1/8	3/8
T-20A41	25.00	Z	Microphone cable input transformer†	200 to 250	50,000	1:14.2		1	Diam.		2 1/8	3/8

† Can be used in reverse—i.e., High impedance source to line. \* Frequency response—250 to 10,000 c.p.s. § Frequency response—60 to 10,000 c.p.s. † Used for converting high impedance input of amplifier to accommodate low impedance microphones—Frequency response within 1/2 Db 30 to 5,000 c.p.s.—High permeability shield for reduction of hum—Fitted with 2-prong connector for balanced mic cable and single contact connector for fitting to amplifier input.

### AUDIO INTERSTAGE TRANSFORMERS

Type No.	List Price	Mtg.	Application	Ohms Impedance		Turns Ratio	Pri. M.A.	Mtg. Centers	Dimensions			Wt. Lbs.	
				Primary	Secondary				W.	D.	H.		
T-20A16	\$2.50	BAH	Single plate to single or push-pull grids	10,000	40,000 Ct.	1:2	8	2	2 3/8	1 1/4	1 1/8	3/8	
T-20A17	4.25	RAV	Single plate to single or push-pull grids	10,000	40,000 Ct.	1:2	8	2	1 1/8	Diam.	2	3/8	
T-20A19	3.40	BAH	Single or push-pull plates to single or push-pull grids	Universal	Universal	1:3	8	2 3/8	2 1/8	1 3/8	1 3/8	3/8	
T-20A22	4.25	BAH	Single plate to single or push-pull grids	10,000	90,000 Ct.	1:3	8	2 3/8	3 1/4	2 1/8	1 1/8	1 1/8	
T-20A23	4.90	FGV	Single plate to single or push-pull grids	10,000	90,000 Ct.	1:3	8	2 3/8	2 3/8	2 1/8	2 1/8	1 1/8	
T-20A24	5.00	FGV	Push-pull plates to push-pull grids	20,000 Ct.	180,000 Ct.	1:3	8 Bal.	2 3/8	2 3/8	2 1/8	2 1/8	1 1/8	
T-20A25	10.60	RTV	Single or push-pull plates to single or push-pull grids (Hum-bucking coil and core—fully potted)	Universal	Universal	1:1.41	8 Bal.	1 1/8 x 1 1/8	2 3/8	2 1/8	Diam.	2	3/8
T-20A27	10.60	RTV	Single plate to single or push-pull grids	10,000	40,000	1:2			2 3/8	Diam.	3 3/8	2 3/8	
				2,500	20,000								

### TUBE TO LINE TRANSFORMERS (Low Level)

T-22S90	\$4.50	FGV	Single or push-pull plates to line	20,000 Ct.	500 Ct. or 125 to 200	8	2 3/8	2 1/8	1 1/4	2 3/8	1 1/8
T-22S92	9.90	RTV	Single or push-pull plates to line (Hum-bucking coil and core—fully potted)	20,000 Ct.	500 Ct. or 125 to 200	8	1 1/8 x 1 1/8	1 1/8	Diam.	2	3/8

### DRIVER TRANSFORMERS

Type No.	List Price	Mtg.	Application	Turns Ratio		Pri. M.A.	Mtg. Centers	Dimensions			Wt. Lbs.
				Pri.—1/2 Sec.	Sec.			W.	D.	H.	
T-20D75	\$2.75	BAH	Single plate to push-pull Class B grids	2.4:1		5	2	2 3/8	1 1/4	1 3/8	3/8
			Primary 10,000 ohms—1H4-G or 30 to 19, etc.								
T-20D76	2.90	BAH	Single plate to push-pull Class B grids	5.2:1		15	2	2 3/8	1 3/4	1 3/8	3/8
			Primary single 6N7 to Class B 6N7, etc.								
T-20D77	4.39	FGV	Primary single 6F6 to PP 6F6, etc.	2.5:1		30	2 3/8	2 3/8	2 1/8	2 3/8	1 1/8
T-20D78	5.75	GGV	Push-pull plates to push-pull grids	4:1		40	2 x 1 1/8	2 3/8	2 1/8	3 1/8	2 3/8
			Primary 6F6 triode to PP 6L6, etc.								
T-20D79	4.90	FGV	Parallel or P-P parallel 6N7 to P-P parallel 6N7, etc.	5.2:1		30	2 3/8	2 3/8	2 1/8	2 3/8	1 1/8
T-20D80	6.80	GGV	Push-pull 2A3 or 6A3 to 805-838, etc.	3.2:1		100	2 x 1 1/8	2 1/8	2 1/8	3 1/8	2 3/8
T-20D81	8.65	GGV	Push-pull 2A3 to push-pull 805-838, etc.	5:1		100	2 3/8 x 2 3/8	3 3/8	3 3/8	3 3/8	4 3/8
T-20D82	7.50	GGV	Push-pull plates to push-pull grids	6:1		100	2 x 1 1/8	2 3/8	2 1/8	3 3/8	2 3/8
			Push-pull 2A3-6F6, etc. to 805, etc.	4:1.3:2.1							
T-20D83	26.45	PUV	20 Watt 500 Ohm line to class B grids	1:7.5, 1:8.5, 1:1.25,			1 1/2 x 4 3/8	3 3/8	4 3/8	4	8
			CIIT	1:1.4, 1:1.75, 1:2, 1:2.25,							
				1:2.5, 1:2.75, 1:3							
T-20D84	14.50	GGV*	20 Watt 500 Ohm line to class B grids	1:7.5, 1:8.5, 1:1.25,			2 3/8 x 2	3	3 3/8	3 3/8	3 3/8
				1:1.4, 1:1.75, 1:2, 1:2.25,							
				1:2.5, 1:2.75, 1:3							

\* Terminal Board with Solder Lugs on Both Shields 20 Watts Capacity.



TRANSFORMER SPECIALISTS SINCE 1895 THORDARSON

# THORDARSON TRANSFORMERS



GGV



PUV



BHH



KTV

## OUTPUT TRANSFORMERS

Type No.	List Price	Mtg.	Application	Primary Imp. Ohms	Max. Prim. Per Side	D.C. M.A. Urbal.	Secondary Imp. Ohms	Power Watts	Mtg. Centers	Dimensions			Wt. Lbs.
										W	D	H	
T-22S45	\$2.05	BAH	Single plate to voice coil.....	1500 to 3000.....	..	55	3.2	3	2	2 3/8	1 1/2	1 3/8	1 1/2
T-22S46	2.30	BAH	Single plate to voice coil.....	3000 to 6000.....	..	35	3.2	3	2	2 3/8	1 1/2	1 3/8	1 1/2
T-22S47	2.75	BAH	Single or push-pull plates to voice coil	6000 to 12000 Ct....	..	35	3.2	3	2	2 3/8	1 1/2	1 3/8	1 1/2
T-22S48	2.80	BAH	Single or push-pull plates to voice coil	12000 to 25000 Ct..	10	8	3.2	3	2	2 3/8	1 1/2	1 3/8	1 1/2
T-22S56	4.15	BAH	Single or push-pull plates to voice coil	8000/10000 Ct.....	50	35	3.2 to 4/6 to 8	8	2 1/8	3 1/2	1 1/2	2	1 1/2
T-22S58	4.15	BAH	Single or push-pull plates to voice coil	5000/7000 Ct.....	50	45	3.2 to 4/6 to 8	8	2 1/8	3 1/2	1 1/2	2	1 1/2
T-22S60	4.30	BAH	Single or push-pull plates to voice coil	2500/4000 Ct.....	60	60	3.2 to 4/6 to 8	8	2 1/8	3 1/2	1 1/2	2	1 1/2
T-22S64	7.20	GGV	Single or push-pull plates to voice coil	10000 Ct.....	50	30	3.2 to 4/6 to 8/15/250/300	25	2 x 1 1/8	2 1/8	2 1/8	3 3/8	2 1/2
T-22S66	7.20	GGV	Single or push-pull plates to voice coil	8000 Ct.....	50	30	3.2 to 4/6 to 8/15/250/300	25	2 x 1 1/8	2 1/8	2 1/8	3 3/8	2 1/2
T-22S68	6.75	GGV	Single or push-pull plates to voice coil	6500 Ct.....	70	40	3.2 to 4/6 to 8/15/250/300	25	2 x 1 1/8	2 1/8	2 1/8	3 3/8	2 1/2
T-22S70	7.70	GGV	Single or push-pull plates to voice coil	5000 Ct.....	80	45	3.2 to 4/6 to 8/15/250/300	25	2 x 1 1/8	2 1/8	2 1/8	3 3/8	2 1/2
T-22S72	7.70	GGV	Single or push-pull plates to voice coil	3000 Ct.....	90	50	3.2 to 4/6 to 8/15/250/300	25	2 x 1 1/8	2 1/8	2 1/8	3 3/8	2 1/2
T-22S78	10.95	GGV	Single or push-pull plates to voice coil	3300 Ct.....	180	150	3.2 to 4/6 to 8/15/250/300	60	2 1/2 x 2 1/8	3 3/8	3 3/8	3 3/8	5 1/2
T-22S74	6.35	BHH	Universal single or push-pull tubes to voice coil	14000/10000/8000/6300/5000/3000/2500 Ct.	80	60	1 to 30	25	3 3/8	4	2 1/2	2 1/2	2 1/2
T-22S76	6.60	BHH	Universal single or push-pull tubes to line	11300/12000/10000/8300/5100/3000 Ct.	80	60	500	25	3 3/8	4	2 1/2	2 1/2	2 1/2
T-22S80	4.40	BHH	Single line to voice coil.....	500 to 630	..	..	3.2 to 4/6 to 8/15	8	3 1/2	3 1/8	2	2 1/2	1 1/2
T-22S82	7.15	BHH	Multiple lines to voice coil...	2000/1500/1000/500	..	..	3.2 to 4/6 to 8/15	25	3 3/8	4	2 3/8	2 3/8	2 1/2
T-22S83	4.90	BAH	Multiple lines to voice coil...	2000/1500/1000/500	..	..	3.2 to 4/6 to 8/15	15	3 1/2	3 1/8	2	2 1/2	1 1/2
T-22S84	4.50	BAH	Multiple lines to voice coil....	2000/1500/1000/500	..	..	3.2 to 4/6 to 8/15	5	2 1/8	3 1/2	1 1/2	2	1
T-22S85	4.10	BAH	Multiple lines to voice coil...	2000/1500/1000/500	..	..	3.2 to 4/6 to 8/15	3	2 3/8	2 1/2	1 1/2	1 1/2	3/4
T-22S82	4.25	BHH	Universal single plate to voice coil	4000/3000/2500/2000/1500	..	50	.1 to 20	8	2 1/8	3 1/2	2	2	1 1/2
T-22S88	3.75	BAH	Universal single or push-pull plates to voice coil	14000 Ct./8000 Ct./3500/2000	50	10	3.2 to 4/6 to 8/15	8	2 3/8	3 1/2	1 1/2	2	1
T-22S87	3.45	BAH	Universal single or push-pull plates to voice coil	14000 Ct./8000 Ct./3500/2000	50	10	3.2 to 4/6 to 8	6	2 3/8	2 1/2	1 1/2	1 1/2	3/4
T-22S86	3.15	BAH	Universal single or push-pull plates to voice coil	14000 Ct./8000 Ct./3500/2000	50	10	3.2 to 4/6 to 8	3	2	2 3/8	1 1/2	1 1/2	1 1/2

## "24" REPLACEMENT LINE SERVICE OUTPUT TRANSFORMERS

Type No.	List Price	Mtg.	Typical Tube Applications	Class	Pri. Imp.	Pri. M.A.	Secondary Imp. Ohms	Max. Watts	Mtg. Centers	Dimensions			Wt. Lbs.
										W	D	H	
TS-24S50	\$1.35	BAH	2A3, 6A3, 6B4, 6W6, 7A5, 23AC5, 25E5, 25N6, 25L6, 35A5, 35L6, 35B5, 60A5, 60L6, 70L7, 48, etc.	A	2000	55	3-4	5	2	2 3/4	1 1/2	1 3/4	1 1/2
TS-24S51	1.38	BAH	31, 43, 45, 50, 59, 71A, 1S4, 2B6, 6A6G, 6V6, 7C5, 12A5, 25A5, 25A6, 25A7, 35L6, etc.	A	5000	40	3-4	5	2	2 3/4	1 1/2	1 3/4	1 1/2
TS-24S52	1.30	BAH	20, 31, 33, 41, 42, 46, 47, 59, 89, 1C5, 1G5, 1O5, 1S4, 2A5, 3Q5, 6A4, 6AC5, 6B5, 6F6, 6K6, 6N6, 6V6, 7E5, etc.	A	7000	30	3-4	5	2	2 3/4	1 1/2	1 3/4	1 1/2
TS-24S54	1.48	BAH	38, 85, 1D8, 1E7, 1F4, 1F5, 1J5, 1T5, 6F6, 6V7, 6Y7, etc.	A	15700 to 25700	10	3-4	5	2	2 3/4	1 1/2	1 3/4	1 1/2

## UNIVERSAL SERVICE REPLACEMENT

TS-24S60	\$2.40	BHH	Single or push-pull plates.....	A	4M, 7M, 8M, 10M, 14M, C.T.	35	.1 to 20 ohms	4	2	2 3/4	1 1/2	1 3/4	1 1/2
TS-24S61	2.70	BHH	Single or push-pull plates.....	A	4M, 7M, 8M, 10M, 14M, C.T.	40	.1 to 20 ohms	8	2 3/8	2 1/4	1 1/2	1 3/4	1

## MODULATION TRANSFORMERS

Type No.	List Price	Mtg.	Capacity Watts	Primary Imp. Ohms	Secondary Imp. Ohms	Secondary Volts	M.A.	Primary Application	Mtg. Centers	Dimensions			Wt. Lbs.
										W.	D.	H.	
T-21M50	\$3.40	BAH	3	10,000 (t.	4300	135	30	19, etc.	2	2 1/8	1 3/8	1 3/8	1 1/2
T-21M52	4.90	FGV	10	10,000 Ct.	4500/3750/3000	350	80	6N7, etc.	2 3/8	2 3/8	2 1/8	2 3/8	1 1/2
T-21M54	6.60	GGV	25	6,000 Ct.	4000	400	100	1P 6L6, etc.	2 x 1 1/2	2 3/8	2 1/8	3 1/8	2 3/8
T-21M56	10.95	GGV	75	10,000 Ct.	6600/3750	1250	200	T7-20-809 etc.	2 1/2 x 2 1/8	3 1/8	4 5/8	3 3/8	3 3/8
T-21M58	25.90	KTV	100	15,000 Ct.	6250	1250	200	811-812, etc.	3 1/2 x 4 1/8	4 1/8	5 1/8	5 1/8	13

It is essential that the class C R.F. load be properly matched to the class B modulator tubes for a maximum transfer of speech energy with low distortion. Thordarson Multi-Match modulation transformers have sufficient flexibility to enable the engineer or amateur to adjust the impedance ratio of primary to secondary, to meet any practical condition of operation. This feature forestalls the possibility of the modu-

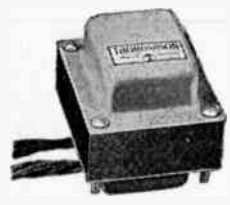
lation transformer becoming obsolete due to changing the modulator or class C tubes. The use of new tubes or a change in class C voltage and current will not necessitate the need of a new modulation transformer, providing the power capacity is adequate. Complete charts and instructions for proper matching are supplied with each unit.

## UNIVERSAL MULTI-MATCH MODULATION TRANSFORMERS

Type No.	List Price	Mtg.	Capacity Watts	Primary M.A. each side	Secondary Series	M.A. Parallel	Mtg. Centers	W.	Dimensions		Wt. Lbs.	
										D.	H.	
T-21M60	\$17.85	KTV	15	50	50	100	2 1/8 x 2 1/8	2 1/8	3 1/8	4	3 3/8	
T-21M61	24.00	PUV	60	125	125	250	1 3/8 x 4 3/8	3 3/8	5 1/8	4	8 3/8	
T-21M62	36.00	PUV	125	210	180	320	2 3/8 x 0 3/8	4 3/8	6 3/8	5 3/8	10 3/8	
T-21M64	57.50	PUV	300	250	250	500	2 1/8 x 0 3/8	4 1/8	7 3/8	6	20	
T-21M65	96.00	PUV	500	320	320	640	3 1/8 x 10	5 3/8	7 3/8	6 3/8	50	
T-21M66	27.00	KTV	500	500	500	1000	3 1/8 x 3 3/8	4 3/8	5 3/8	5 1/8	11	

500 Ohm Line to R.F. Load—5000/6000/7000/8000/9000/10,000 Ghms.—Max. Sec. D.C. 200 M.A.

# THORDARSON TRANSFORMERS



AGF



CAV



BAV

## REPLACEMENT POWER TRANSFORMERS

Type No.	List Price	Mtg.	H. V. Secondary A.C. Volts	M. A. D. C.	Ret. Fil.	Fil. No. 2	Fil. No. 3	Pri. Volts 50/60 Cy.	Pri. VA.	Mtg. Centers	Dimensions W. D. H.		Wt. Lbs.	
T-22R00	\$6.90	AGF	250-0-250	40	5V-2A.	6.3V. CT-2A.		117	45	2 x 2 1/2	2 1/2	3	1 1/2	1 1/2
T-22R01	7.00	AGF	275-0-275	50	5V-2A.	6.3V. CT-2.5A.		117	55	2 x 2 1/2	2 1/2	3	1 1/2	2 1/4
T-22R02	8.35	AGF	300-0-300	70	5V-2A.	6.3V. CT-3A.		117	65	2 x 2 1/2	2 1/2	3	2 1/2	2 1/4
T-22R04	8.55	AGF	300-0-300	90	5V-2A.	6.3V. CT-3.5A.		117	80	2 1/2 x 2 1/2	2 1/2	3 1/2	2 1/2	3
T-22R05	9.50	AGF	300-0-300	120	5V-3A.	6.3V. CT-5A.		117	95	2 1/2 x 3 1/2	2 1/2	3 1/2	2 1/2	4 1/2
T-22R06	10.00	AGF	325-0-325	150	5V-3A.	6.3V. CT-5A.		117	125	2 1/2 x 3 1/2	3 1/2	3 1/2	3 1/2	5 1/2
T-22R07	12.40	AGF	350-0-350	200	5V-3A.	6.3V. CT-6A.		117	165	3 x 3 1/2	3 1/2	4 1/2	2 1/2	7 1/2
T-22R08	6.90	AGF	250-0-250	40	5V-2A.	2.5V. CT-1A.		117	40	2 x 2 1/2	2 1/2	3	1 1/2	1 1/2
T-22R09	7.50	AGF	275-0-275	50	5V-2A.	2.5V. CT-1.5A.		117	55	2 x 2 1/2	2 1/2	3	1 1/2	2 1/4
T-22R10	9.80	AGF	325-0-325	85	5V-2A.	2.5V. CT-9A.	2.5V. CT-3.5A.	117	90	2 1/2 x 3 1/2	3 1/2	3 1/2	2 1/2	3 1/2
T-22R11	10.95	AGF	325-0-325	120	5V-3A.	2.5V. CT-12.5A		117	125	2 1/2 x 3 1/2	3 1/2	3 1/2	3 1/2	5 1/2
T-22R12	4.00	BAH	120V	75	6.3V-1.5A						3 1/2	1 1/2	2 1/2	1

## POWER TRANSFORMERS (AMPLIFIER, ETC.)

T-22R30	\$8.35	GGV	275-0-275	50	5V-2A.	6.3V. CT-2.5A.		117	55	2 x 2 1/2	2 1/2	3 1/2	3 1/2	3 1/2
T-22R31	9.50	GGV	340-0-340	80	5V-2A.	6.3V. CT-2.5A.		117	76	2 x 2 1/2	2 1/2	3 1/2	3 1/2	4 1/2
T-22R32	11.25	GGV	350-0-350	110	5V-2A.	6.3V. CT-3A.	6.3V. CT-3A.	117	107	2 1/2 x 2 1/2	3 1/2	3 1/2	3 1/2	5 1/2
T-22R33	12.10	GGV	375-0-375	160	5V-3A.	6.3V. CT-5A.		117	145	3 x 3 1/2	3 1/2	4 1/2	4 1/2	7 1/2
T-22R34	15.55	GGV	385-0-385	225	5V-3A.	6.3V. CT-5A.		117	186	3 x 3 1/2	3 1/2	4 1/2	4 1/2	10
T-22R35	16.50	GGV	400-0-400	310	5V-3A.	6.3V. CT-7A.		117	200	3 x 3 1/2	3 1/2	4 1/2	4 1/2	12 1/2
T-22R36	12.50	GGV	600-0-600	200	5V-3A.	6.3V. CT-5A.				3 x 3 1/2	3 1/2	4 1/2	4 1/2	8 1/2

Intermittent Duty and Low Cost P.A. Amplifiers.

## UNIVERSAL POWER REPLACEMENT "24" SERVICE LINE

Type No.	List Price	Mtg.	H. V. Secondary A.C. Volts	M. A. D. C.	Ret. Fil.	Fil. No. 2	Mtg. Centers	W.	Dimensions D. H.		Wt. Lbs.
TS-24R00	\$4.90	AGF	240-0-240	40	5V-2A	6.3V. CT-2A	2 x 2 1/2	2 1/2	3	1 1/2	1 1/2
TS-24R00-U	4.90	GGV	240-0-240	40	5V-2A	6.3V. CT-2A	2 x 1 1/2	2 1/2	2 1/2	3 1/2	1 1/2
TS-24R01	5.15	AGF	325-0-325	40	5V-2A	6.3V. CT-2A	2 x 2 1/2	2 1/2	3	1 1/2	2 1/4
TS-24R01-U	5.15	GGV	325-0-325	40	5V-2A	6.3V. CT-2A	2 x 1 1/2	2 1/2	2 1/2	3 1/2	2 1/4
TS-24R02	6.25	AGF	350-0-350	70	5V-2A	6.3V. CT-2.5A	2 1/2 x 2 1/2	2 1/2	3 1/2	2 1/2	2 1/4
TS-24R02-U	6.25	GGV	350-0-350	70	5V-2A	6.3V. CT-2.5A	2 1/2 x 2 1/2	2 1/2	3 1/2	2 1/2	2 1/4
TS-24R04	6.75	AGF	350-0-350	90	5V-3A	6.3V. CT-3.5A	2 1/2 x 2 1/2	2 1/2	3 1/2	3 1/2	3 1/2
TS-24R04-U	6.75	GGV	350-0-350	90	5V-3A	6.3V. CT-3.5A	2 1/2 x 2 1/2	2 1/2	3 1/2	3 1/2	3 1/2
TS-24R05	7.65	AGF	350-0-350	120	5V-3A	6.3V. CT-5A	2 1/2 x 2 1/2	2 1/2	3 1/2	3 1/2	3 1/2
TS-24R05-U	7.65	GGV	350-0-350	120	5V-3A	6.3V. CT-5A	2 1/2 x 2 1/2	2 1/2	3 1/2	3 1/2	3 1/2
TS-24R06	9.05	AGF	375-0-375	150	5V-3A	6.3V. CT-4.7A	2 1/2 x 3 1/2	3 1/2	4 1/2	3 1/2	5 1/2
TS-24R06-U	9.05	GGV	375-0-375	150	5V-3A	6.3V. CT-4.7A	2 1/2 x 3 1/2	3 1/2	4 1/2	3 1/2	5 1/2
TS-24R07	12.00	AGF	400-0-400	200	5V-3A	6.3V. CT-5A	3 x 3 3/4	3 1/2	4 1/2	3 1/2	8 1/2
TS-24R07-U	12.00	GGV	400-0-400	200	5V-3A	6.3V. CT-5A	3 x 3 3/4	3 1/2	4 1/2	3 1/2	8 1/2

## VIBRATOR POWER TRANSFORMERS

Type No.	List Price	Mtg.	Primary	H. V. Secondary	Sec. No. 2	Mtg. Centers	Dimensions W. D. H.		Wt. Lbs.	
T-22R25	\$6.50	TTV†	6-8 volts D.C.	150 volts D.C. at 40 M.A.		Exact Repl.	2 1/2	2 1/2	3	2
T-22R27	7.00	TTV†	6-8 volts D.C.	250 volts D.C. at 50 M.A.		Exact Repl.	2 1/2	2 1/2	3	2
T-22R20	\$6.35	CAV	0-8 volts D.C.	250 volts D.C. at 50 M.A.		2 x 1 1/2	2 1/2	2 1/2	3 1/2	2 1/2
T-22R22	7.50	CAV	0-8 volts D.C.	325 volts D.C. at 75 M.A.		2 x 2 1/2	2 1/2	3	3 1/2	3 1/2
T-22R24	14.40	GGV	117V. 60 cycle or 6-8 volts D.C.	325 volts D.C. at 135 M.A.	6.3 volts Ct. at 4.75 A.	3 x 3 1/2	3 1/2	4 1/2	4 1/2	8 1/2

## PLATE TRANSFORMERS

The new Thordarson plate transformers are designed to deliver the rated D.C. voltage from a two-section filter which includes the voltage drop in the rectifier tubes and chokes. Two current ratings are indicated, "Continuous Commercial Service" (CCS) and "Intermittent Commercial or Amateur Service" (ICAS). These dual ratings make it possible to select the plate transformer exactly suited for each application.

Type No.	List Price	Mtg.	Pri. Volts	Prim. V.A.	Secondary Volts A.C.	R.M.S.	D.C. Volts	D.C.M.A. ICAS	CCS	Mtg. Centers	Dimensions W. D. H.			Wt. Lb.
T-21P75	\$155.25	PUV	115/230	1900	1500	3000-2100-1500-0-1500-2100-3000	2500-2000-1250	650	500	4 1/2 x 12 1/2	7 1/2	13 1/2	9 1/2	135
T-21P77	90.50	PUV	115/230	1250	900	3000-2150-0-2150-3000	2500-2000	425	300	3 1/2 x 10	6 1/2	11	9	77
T-21P79	74.00	PUV	115/230	1000	750	1875-1500-0-1500-1875	1500-1250	425	400	3 1/2 x 10 1/2	5 1/2	11	6 1/2	60
T-21P81	69.00	PUV	115*	630	480	1590-1200-0-1200-1590	1250-1000	425	300	3 1/2 x 10 1/2	5 1/2	11	6 1/2	57
T-21P82	69.00	PUV	1 5*	820	600	2335-1700-0-1700-2335	2000-1500	300	220	3 1/2 x 9 1/2	5 1/2	10	6 1/2	43
T-21P83	36.00	PUV	1 *	440	300	1560-1250-0-1250-1560	1250-1000	300	200	2 1/2 x 7 1/2	4 1/2	8 1/2	6	33
T-21P85	29.35	PUV	1.5*	370	200	850-730-0-730-850	600-500	425	300	2 1/2 x 6 1/2	4 1/2	6 1/2	5 1/2	19
T-21P87	17.25	GGV	115*	250	185	835-650-0-650-835	650-500	300	220	3 x 3 1/2	3 1/2	4 1/2	4 1/2	10
T-21P89	11.50	GGV	115	135	95	550-0-550	450	250	175	2 1/2 x 2 1/2	3 1/2	4 1/2	3 1/2	6 1/2
T-21P91	40.00	PUV	115	375	280	1200-0-1200	1000 and 750†	200	150	2 1/2 x 6 1/2	3 1/2	4 1/2	5 1/2	32
T-21P93	16.10	GGV	115	210	160	1075-0-1075	1000 and 400†	110	95	3 x 3 1/2	3 1/2	4 1/2	4 1/2	10
						500-0-500†		150	125					

\* Secondary voltages changed by means of primary taps.  
 † Designed for double rectifiers and will deliver both secondary ratings simultaneously. If only the lower voltage taps are used the current rating is equal to the current rating of both windings.



# THORDARSON TRANSFORMERS

## FILAMENT TRANSFORMERS

Type No.	List Price	Mtg.	Secondary		Ins. R.M.S.	Pri. Volts 50/60 Cy.	Mtg. Centers	Dimensions			Wt. Lbs.
			Volts	Ampts.				W	D	H	
T-21F00	\$3.60	BAV	2.5 Ct.	@ 5	1600	117	2 1/2	2 1/8	1 3/4	2 1/8	1
T-21F01	4.35	BAV	2.5 Ct.	@ 10	1600	117	2 1 1/8	2 1/8	2	2 1 1/8	1 1/2
T-21F02	6.20	CAV	2.5 Ct.	@ 10	7500	117	2 x 1 3/4	2 1/8	2 1/8	3 1/8	2 1/2
T-21F03	4.15	BAV	5 Ct.	@ 3	1600	117	2 1/8	2 1/8	1 3/4	2 1/8	1
T-21F04	5.30	BAV	5 Ct.	@ 8	1600	117	2 1 1/8	2 1/8	2	2 1 1/8	1 1/2
T-21F05	6.00	CAV	5 Ct.	@ 3	10,000	117	2 x 1 3/4	2 1/8	2 1/8	3 1/8	2
T-21F06	6.35	CAV	5 Ct.	@ 13	1600	117	2 x 2	2 1/8	2 1/8	3 1/8	2 3/4
T-21F07	8.65	CAV	5 Ct.	@ 21	1600	117	2 1/2 x 2 1/4	2 1/8	2 1/8	3 1 1/8	5 1/4
T-21F08	3.15	BAV	6.3 Ct.	@ 1	1600	117	2 1/8	2 1/8	1 3/4	2	1 3/4
T-21F10	4.15	BAH	6.3 Ct.	@ 3	1600	117	2 3/8	2 3/8	1 3/4	2	1 1/2
T-21F11	6.15	BAV	6.3 Ct.	@ 6	1600	117	2 1 1/8	2 1/8	2	2 3/8	1 1/2
T-21F12	6.05	CAV	6.3 Ct.	@ 10	1600	117	2 x 2	2 1/8	2 1/8	3 1/8	2 3/4
T-21F14	4.15	BAH	6.3-5-2.5	@ 2.5	1600	117	2 3/8	2 3/8	1 3/4	2	1 1/2
T-21F15	4.60	BAV	7.5 Ct.	@ 4	1600	117	2 1 1/8	2 1/8	2	2 1 1/8	1 3/4
T-21F16	6.05	CAV	7.5 Ct.	@ 8	1600	117	2 x 2	2 1/8	2 1/8	3 1/8	2 3/4
T-21F17	7.50	CAV	7.5 Ct.	@ 12	1600	117	2 1/2 x 2 1/4	2 1/8	2 1/8	3 1/8	4
T-21F18	6.05	CAV	10 Ct.	@ 5	1600	117	2 x 1 3/4	2 1/8	2 1/8	3 1/8	2 1/4
T-21F19	8.65	CAV	10 Ct.	@ 12 or @ 11	1600	117	2 1/2 x 2 1/4	3 1/8	3 1/8	3 1 1/8	5 1/4

## CHOKES—REACTORS

### Universal Types—Swinging and Smoothing

Thordarson Universal Chokes are designed for use both in the input and smoothing positions. Where the current taken from the power supply is essentially constant (not varying more than a few percent) the chokes should be selected so as not to exceed the rated D.C.-M.A. If the current fluctuates considerably, as is the case where the power supply furnishes a class B modulator stage, the chokes should be selected so as not to exceed the rated D.C.-M.A. rating under the steady

state of operation, and not to exceed the Max. D.C.-M.A. rating when the modulator stage is fully excited.

These are truly universal chokes suitable for use in power supplies requiring either input, swinging or smoothing types.

The tapered S-latter Chokes are used between the modulator and Class C stage for eliminating objectionable side band splatter. Full instructions and circuit diagrams are supplied with each unit.

Type No.	List Price	Mtg. Fig.	Inductance in Henries*		Current in M.A.		D.C. Res. Ohms	Test Volts R.M.S.	Mtg. Centers	Dimensions			Wt. Lbs.	
			O.D.C.	Rated D.C.	Rated D.C.	Max. D.C.				W.	D.	H.		
T-20C50	\$3.45	BAH	475	350	75	5	25	5500	2300	2 1/2	3 1/4	2	2	1 1/2
T-20C51	2.30	BAH	70	35	15	15	25	1850	1200	2	2 3/8	1 1/4	1 3/8	1 1/2
T-20C52	2.00	BAH	13	8	4	40	65	450	1200	2	2 3/8	1 1/4	1 3/8	1 1/2
T-20C59	2.40	BAH	14	7	5	55	65	200	1600	2 1/8	2 1/8	1 1/2	1 3/8	1 1/2
T-20C53	2.95	BAH	24	12	8	83	100	375	2000	2 1/8	3 1/4	2	2	1 1/4
T-20C64	3.60	BAH	15	4	3	130	150	100	1600	2 1/8	3 1/8	2 3/8	2 1/4	1 1/2
T-20C54	4.90	GGV	16	8	4	150	200	145	2700	2x1 1/8	2 1/8	2 3/8	3 1/8	2 1/2
T-20C54-P	10.00	CHT	16	8	4	150	200	145	2700	2 1 1/8 x 2 3/8	3	2 3/4	4	3 3/4
T-20C55	6.35	GGV	11	6	2	200	300	75	2700	2 1/4 x 2 1/4	2 7/8	3 1/4	3 1/4	3 1/2
T-20C55-P	12.75	CHT	11	6	2	200	300	75	2700	2 3/8 x 2 1 1/8	3 3/8	3	4 1/2	6
T-20C56	9.25	GGV	10	7	4	300	375	60	3500	2 1/4 x 3	3 3/8	4 1/8	3 7/8	6 1/2
T-20C56-P	16.25	CHT	10	7	4	300	375	60	3500	3 3/4 x 3 3/4	4 1/4	3 3/4	4 1/4	8 1/2
T-20C57	34.50	PVV	16	10	6	500	600	65	7500	2 1 1/8 x 7	4 1/8	7 3/8	6	26
T-20C58	2.30	BAH		.75	.5			30	1100	2 1/2	2 1/8	1 1/2	1 3/4	1 1/2

\*Measured at 50 volts, 60 cycles at D.C. current shown.

### Dual Tone Control Reactor

Type No.	List Price	Mtg.	22	0	HUM-BUCKING CONSTRUCTION	220	500	1 1/8	1 1/8 Diameter	2	1 1/2
T-20C74	\$4.75	RAV									
R-1068	3.15	USED IN CONJUNCTION WITH DUAL TONE CONTROL CHOKES T-20C74									

### S-latter Chokes

Type No.	List Price	Mtg.	Application	D.C. Resistance	Mtg. Dim.	Dimensions			Wt. Lbs.
T-20C62	\$ 4.00	BAH	Inductance—.2 to 1.5 H. @ 100 M.A. D.C.	96 ohms	2 1 1/8 x 2	1 1/8	1 3/8	2 3/8	1 1/2
T-20C60	16.25	KTV	Inductance—.2 to 1.5 H. @ 300 M.A. D.C.	30 ohms	2 3/8 x 3 1/8	3 1/8	4 1/8	4 1/8	7
T-20C61	20.00	KTV	Inductance—.2 to 1.5 H. @ 500 M.A. D.C.	27 ohms	2 3/4 x 3 3/8	3 3/8	4 1/8	4 1/8	9

### Voltage Changer—Auto Transformers

Type No.	List Price	Mtg.	Application	Volts	Current	Primary	Secondary	Wt. Lbs.	
T-23V21	\$ 7.50	GGV*	225-250	110-125†	100	2 3/8 x 1 1 1/8	3 3/8	2 1/4	3 1/2
T-23V22	11.00	GGV*	220-250	110-125†	150	2 1/2 x 1 1 1/8	3 3/8	3 3/8	3 3/4
T-23V23	13.00	GGV*	220-250	110-125†	250	3 x 2 3/8	3 1 1/8	3 3/4	4 1 1/8
T-23V24	19.25	GGV*	220-250	110-125†	500	3 x 3 3/8	3 1 1/8	4 3/4	4 1 1/8

\*Furnished with primary cord and secondary receptacle. †Output is proportional to voltage applied to input.

## TELEVISION REPLACEMENT & EXPERIMENTAL POWER TRANSFORMERS

Type No.	List Price	Case Style	Secondary No. 1 A.C. Volts	Rect. D.C. MA	Rect. Fil.	Fil. No. 2	Fil. No. 3	Mtg. Centers	Dimensions			Wt. Lbs.	
T-22R40	\$15.00	GGV	1800	2	2.5V-1.8A	6.3V-.6A	Tapped at 2.5V-2.1A	2 1/2 x 2 1/2	3 3/8	3 3/4	3 1/8	4 3/4	
Use for experimental work, television replacement, oscilloscopes up to 7" tubes.													
TV-24R92	12.00	GGV	2400	10	2.5V-1.75A			2 3/8 x 2 1 1/8	3 1/2	3 3/8	4 1/2	5	
Replacement—Half Wave—2 x 2 Rectifier—High Voltage Low Current Supplies.													
TV-24R98	15.00	AGF	350-0-350	200	5V-2A	5V-3A	6.3V-7A	6.3V-.9A	3x3 3/4	3 3/4	4 1/2	4 1/2	10 1/4
Power Supply 12" and 15" Receivers.													

## THORDARSON LITERATURE

**TRANSFORMER MANUAL:** A complete book containing literature on Radio receiver replacement transformers, Sound amplifiers, amateur transmitters and current Thordarson catalogs. Bound in heavy blue and orange loose leaf cover permitting addition of future Thordarson releases. Manual No. 340—50 cents.

**TRANSFORMER CATALOG:** A complete listing of Thordarson transformers, chokes, voltage changers, and regulators for receiver replacement, amateur radio and sound amplifiers. Tables and curves give complete data on application and characteristics of output, modulation and other transformers and chokes. Catalog 400—Free.

**TRU-FIDELITY TRANSFORMER CATALOG:** Complete technical data on Thordarson broadcast units. Includes audio

transformers, filters, line equalizers, filament transformers, filter reactors, plate transformers, and modulation reactors and transformers. Highest quality units that satisfy the requirements of discriminating engineers, broadcast stations and laboratories. Catalog 500—Free.

**AMATEUR RADIO:** Carefully prepared and edited to make learning of Radio, by all beginners, easy and interesting. Presents fundamental theory and instructions for making code practice oscillators, receivers and transmitters. Has 100 pages and over 100 illustrations and drawings. Heavy book cover, finished in wear-resistant blue cloth and imprinted with gold lettering. Amateur net price—75 cents.



TRANSFORMER SPECIALISTS SINCE 1895 THORDARSON

# UNITED TRANSFORMER CO.

## PRICE LIST

Type No.	List Price	Type No.	List Price	Type No.	*Net Price	Type No.	List Price	Type No.	List Price	Type No.	*Net Price
A-10	\$15.00	CVL-1	8.00	HQC-1	\$13.00	LS-141	\$28.00	R-53	3.70	S-38	14.00
A-11	16.00	CVL-2	11.50	HQC-2	13.00	LS-142	35.00	R-55	1.75	S-39	10.50
A-12	15.00	CVL-3	17.50	HQC-3	13.00	LS-143	28.00	R-56	3.70	S-40	10.50
A-14	14.00	CVL-10	8.00	HQC-4	13.00	LS-150	25.00	R-57	5.80	S-41	9.50
A-16	13.00	CVL-11	11.50	HQC-5	13.00	LS-151	25.00	R-58	3.00	S-42	12.50
A-17	15.00	CVL-12	17.50	HQO-1	15.00	LS-180	17.00	R-59	3.50	S-43	17.50
A-18	14.00	CVM-0	8.50	HQO-2	15.00	LS-183	11.00	R-60	3.70	S-44	15.50
A-19	18.00	CVM-1	14.00	HQO-3	15.00	LS-184	170.00	R-64	70.00	S-45	12.00
A-20	15.00	CVM-2	20.50	HQO-4	15.00	LS-185	400.00	R-72	8.50	S-46	15.00
A-21	16.00	CVM-3	30.00	HQO-5	15.00	LS-190	27.00	R-73	13.00	S-47	19.00
A-24	15.00	CVM-4	50.00	HQE-1	6.00	LS-192	35.00	R-74	24.00	S-48	28.00
A-25	14.00	CVM-5	115.00	HQE-2	6.00	LS-691	350.00	R-75	35.00	S-49	26.50
A-26	15.00			HQE-3	7.00	LS-692	700.00	R-76	55.00	S-50	37.00
A-27	15.00			HQE-4	7.50	LS-693	1500.00	R-77	95.00	S-51	9.00
A-30	10.00	CVP-1	9.00	HQE-5	8.00	LS-950	14.00	R-78	18.00	S-52	12.00
A-31	5.00	CVP-2	14.00					R-79	22.00	S-53	3.20
A-32	9.00	CVP-3	20.00					R-80	30.00	S-54	3.20
		CVP-4	29.00					R-81	60.00	S-55	3.20
		CVP-5	50.00	Type No.	List Price	MA-1	14.00	R-83	18.00	S-56	3.20
						MA-1	14.00	R-84	22.00	S-57	4.50
CG-1C	60.00			LS6L1	\$42.00	MC-1	13.00	R-85	30.00	S-58	5.50
CG-1S	60.00	FT-1	2.70	LS6L3	28.00	MC-2	17.00	R-86	60.00	S-59	4.50
CG-2L6	19.00	FT-2	2.70	LS6L4	50.00	O-1	13.25	R-90	3.00	S-60	10.00
CG-4L6	29.00	FT-3	3.00	LS-5	42.00	O-2	13.25	R-91	7.00	S-61	4.50
CG-15	11.00	FT-4	3.25	LS-6	31.00	O-3	12.00	R-92	7.00	S-62	5.50
CG-16	11.00	FT-5	3.25	LS-7	31.00	O-4	10.50	R-93	14.00	S-63	10.00
CG-19	11.00	FT-6	3.25	LS-10	25.00	O-5	10.50	R-94	20.00	S-64	5.50
CG-33	7.50	FT-7	3.25	LS-12	28.00	O-6	12.00	R-95	15.00	S-65	5.50
CG-34	11.50	FT-8	6.00	LS-12X	35.00	O-7	12.00	R-101	6.00	S-66	5.50
CG-40	8.50	FT-9	6.00	LS-14	28.00	O-8	13.25	R-102	7.00	S-67	5.50
CG-41	8.50	FT-10	6.00	LS-14X	35.00	O-9	13.25	R-103	7.50	S-68	6.00
CG-44	8.50			LS-15	28.00	O-10	13.25	R-104	8.50	S-69	6.00
CG-45	8.50	HA-100	19.00	LS-15X	35.00	O-11	13.25	R-105	10.50	S-70	6.00
CG-48C	8.50	HA-100X	24.00	LS-18	31.00	O-12	12.00	R-108	6.00	S-71	10.00
CG-50	16.00	HA-101	22.00	LS-19	24.00	O-13	9.50	R-107	7.00	S-72	6.30
CG-51AX	10.50	HA-101X	27.00	LS-20	21.00	O-14	13.25	R-108	8.50	S-74	16.50
CG-53AX	12.50	HA-103A	22.00	LS-21	24.00	O-15	13.25	R-109	13.50	SC-1	2.00
CG-59AX	17.50	HA-104	20.00	LS-22	31.00	P-1	14.50	R-110	6.00	SC-2	3.50
CG-100	9.00	HA-105	14.00	LS-25	28.00	P-2	14.50	R-111	7.00	SC-3	4.00
CG-101	9.00	HA-106	16.00	LS-26	25.00	P-3	13.25	R-112	8.50	SC-4	6.00
CG-102	14.00	HA-107	24.00	LS-27	24.00	P-4	12.00	R-113	13.50	SC-5	10.00
CG-103	14.00	HA-108	19.00	LS-30	25.00	P-5	12.00	SO-1	5.60	V-0	11.50
CG-104	21.00	HA-108X	24.00	LS-30X	32.00	P-6	13.25	SO-2	5.60	V-0-B	15.00
CG-105	21.00	HA-111	19.00	LS-31	28.00	P-7	13.25	SO-3	5.60	V-1	17.50
CG-108	37.00	HA-113	18.00	LS-31X	35.00	P-8	14.50	SO-4	5.10	V-1-M	29.00
CG-109	37.00	HA-114	19.00	LS-32	28.00	P-9	14.50	SO-5	5.60	V-2	15.00
CG-120	15.00	HA-130X	27.00	LS-33	28.00	P-10	14.50	SSO-1	5.60	V-2-B	18.00
CG-121	21.00	HA-133	18.00	LS-34	42.00	P-11	14.50	SSO-2	5.60	V-3	22.00
CG-122	18.00	HA-134	20.00	LS-38	32.00	P-12	13.25	SSO-3	5.60	V-3-B	29.00
CG-124	18.00	HA-135	19.00	LS-39	25.00	P-13	10.50	SSO-4	5.60		
CG-125	21.00	HA-137	22.00	LS-40	24.00	P-14	14.50	SSO-5	5.10		
CG-128	33.00			LS-47	35.00	P-15	14.50	SSO-6	5.60	Type No.	List Price
CG-131	9.50	HC-115	13.00	LS-48	50.00	PF-1	10.00			V1-C1	\$11.00
CG-132	10.00	HC-116	20.00	LS-49	42.00	PF-2	10.00			V1-C2	11.00
CG-133	12.50	HC-117	12.00	LS-50	24.00	PF-3	4.50			V1-C3	11.00
CG-134	12.50			LS-51	20.00	PF-4	10.00			V1-C4	11.00
CG-135	13.50			LS-52	28.00	R-14	2.10			V1-C5	11.00
CG-136	13.50	HP-122	13.00	LS-53	20.00	R-15	2.10			V1-C6	11.00
CG-137	10.00	HP-123	20.00	LS-54	28.00	R-16	2.10			V1-C7	14.00
CG-140	12.00			LS-55	28.00	R-17	2.80			V1-C8	14.00
CG-141	13.50			LS-56	28.00	R-18	2.80			V1-C9	14.00
CG-233	11.00			LS-57	20.00	R-19	3.90			V1-C10	14.00
CG-235	17.50			LS-58	50.00	R-20	4.30			V1-C11	14.00
CG-238AX	32.00			LS-60A	35.00	R-21	4.30			V1-C12	14.00
CG-300	18.00	HQA-1	\$7.00	LS-61	28.00	R-22	3.90			V1-C13	14.00
CG-301	25.00	HQA-2	7.00	LS-62A	35.00	R-23	4.10			V1-C14	14.00
CG-302	30.00	HQA-3	7.50	LS-63	20.00	R-24	4.30			V1-C15	16.50
CG-303	45.00	HQA-4	7.50	LS-66	100.00	R-25	4.50			V1-C16	16.50
CG-304	120.00	HQA-5	8.00	LS-67	100.00	R-26	4.10			V1-C17	16.50
CG-305	68.00	HQA-6	8.00	LS-70	34.00	R-27	4.50			V1-C18	16.50
CG-306	120.00	HQA-7	9.00	LS-72	40.00	R-28	5.80			V1-C19	16.50
CG-307	105.00	HQA-8	10.00	LS-74	35.00	R-29	4.30			V1-C20	16.50
CG-308	144.00	HQA-9	10.00	LS-80	23.00	R-30	11.00			V1-C21	17.50
CG-309	250.00	HQA-10	10.00	LS-82	30.00	R-31	3.50			V1-C22	18.50
CG-310	185.00	HQA-11	11.00	LS-83	60.00	R-32	5.00				
CG-311	68.00	HQA-12	11.00	LS-84	23.00	R-33	2.90				
CG-312	67.00	HQA-13	11.00	LS-88A	11.00	R-34	3.00				
CG-315	15.00	HQA-14	13.00	LS-89	87.00	R-35	3.70				
CG-318	25.00	HQA-15	14.00	LS-90	14.00	R-36	3.70				
CG-333	11.00	HQA-16	15.00	LS-91	14.00	R-37	3.90				
CG-422	19.00	HQA-17	16.00	LS-92	23.00	R-38A	3.00				
CG-428	25.00	HQA-18	17.00	LS-93	40.00	R-39	3.80				
CG-429	27.50			LS-94	14.00	R-40	5.50				
CG-431	40.00	HQB-1	16.00	LS-96	67.00	R-41	7.50				
CG-433	12.00	HQB-2	16.00	LS-98	40.00	R-42	9.50				
CG-512	30.00	HQB-3	16.00	LS-99	100.00	R-43	12.50				
CG-710	11.00	HQB-4	17.00	LS-102	70.00	R-44	20.00				
CGE-1	25.00	HQB-5	17.00	LS-103	95.00	R-45	35.00				
		HQB-6	18.00	LS-104A	500.00	R-46	10.00				
		HQB-7	19.00	LS-105	100.00	R-47	13.50				
		HQB-8	20.00	LS-106	250.00	R-48					
CVA-1	10.00	HQB-9	21.00	LS-120	43.00						
CVA-2	13.00	HQB-10	22.00	LS-121Y	54.00						
CVA-3	17.50	HQB-11	23.00	LS-140	35.00						
CVA-4	26.00	HQB-12	24.00								
CVA-5	36.00										

### FILTERS AND EQUALIZERS

Type No.	*Net Price
JA	\$125.00
JAX	205.00
AC	15.00
BMI (Stock)	25.00
BMI (Stock)	25.00
HMI (Stock)	25.00
HMI (Stock)	25.00
LMI (Stock)	25.00
LMI (Stock)	25.00



# LINEAR STANDARD AUDIO TRANSFORMERS

## LINEAR STANDARD AUDIO UNITS FEATURE:

**UNIFORM FREQUENCY RESPONSE** . . . at low frequencies, is effected through the use of HIPERM-ALLOY, a STABLE nickel iron alloy of very high initial permeability. Uniform high frequency response is the result of multiple section interleaved windings arranged in a semi-toroidal coil structure. This, plus special winding methods and insulations, assures a minimum of distributed capacity and leakage reactance.

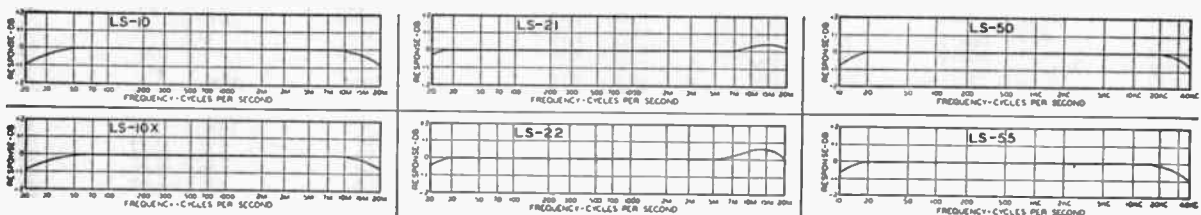
**UTC LINEAR STANDARD** transformers are the **ONLY** audio units with a **GUARANTEED** uniform response . . .  $\pm 1$  DB from 20 to 20,000 cycles.

**MINIMUM HUM PICKUP** . . . is accomplished through the use of a hum balanced, semi-toroidal, coil structure which affords maximum neutralization of external fields. In addition, all units employ high conductivity outer case for maximum shielding. For very low level applications, units whose code numbers end in X employ multiple alloy shielding, making possible a transformer with extremely low inductive pickup.

**NEGLECTIBLE WAVE FORM DISTORTION** . . . is a function of proper impedance matching, minimum phase shift, and low flux density. These elements have been given great attention in the design of Linear Standard units. It is interesting to note that an output transformer reasonably flat from 20 to 20,000 cycles may show serious distortion at 30 and 10,000 cycles. For this reason, UTC high level units have a frequency range better than guaranteed value, generally 10 cycles to 50,000 cycles (see page 6).

**MULTIPLE TAP WINDINGS** . . . make possible a wide combination of impedance terminations without impairing fidelity or efficiency. Precision winding methods result in winding accuracy of .1% . . . perfect balance of inductance and capacity . . . exact impedance reflection.

**DEPENDABILITY** . . . is a function of external and internal structure. Linear Standard units are housed in rugged die cast cases of precise dimension with reversible mounting to permit above chassis or subchassis wiring. The solid terminal posts on low absorption bakelite are arranged in a circular layout so that a round chassis hole will clear all terminals. Coils are vacuum baked and impregnated. Semi-hermetic sealing is accomplished through the use of a high adhesion compound poured through the large opening opposite the terminal board after controlled preheating of the unit for full compound penetration.



LS-1 CASE

Length  $3\frac{1}{8}$ "  
 Width  $2\frac{5}{8}$ "  
 Height  $3\frac{1}{4}$ "  
 Mounting Screws  $1\frac{1}{16}$ " x  $2\frac{3}{16}$ "  
 Cutout  $1\frac{1}{8}$ " dia.  
 Unit Weight 3 lbs.

## LOW IMPEDANCE TO GRID TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 1$ db from	Max.† Level	Relative* hum	Unbal. DC in prim'y	Case No.
LS-10	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200, 250, 333, 500/600 ohms	60,000 ohms in two sections	20-20,000	+10 DB	-74 DB	.5 MA	LS-1
LS-10X	As above	As above	50,000 ohms	20-20,000	+10 DB	-92 DB-Q	.5 MA	LS-1
LS-12	Low impedance mike, pickup, or multiple line to push pull grids	50, 125/150, 200, 250, 333, 500/600 ohms	120,000 ohms overall, in two sections	20-20,000	+10 DB	-74 DB	.5 MA	LS-1
LS-12X	As above	As above	80,000 ohms overall, split	20-20,000	+10 DB	-92 DB-Q	.5 MA	LS-1
LS-14	Low impedance mike, pickup, or parallel mixer to grid	2.5, 5.5, 10, 15, 22, 30, 38, 60 ohms	60,000 ohms in two sections	20-20,000	+10 DB	-74 DB	.5 MA	LS-1
LS-14X	As above	As above	50,000 ohms	20-20,000	+10 DB	-92 DB-Q	.5 MA	LS-1
LS-15	Three isolated lines or pads to one or two grids	30, 50, 200, 250 ohms each primary	60,000 ohms overall, in two sections	20-20,000	+10 DB	-74 DB	.5 MA	LS-1
LS-15X	As above	As above	As above	20-20,000	+10 DB	-92 DB-Q	.5 MA	LS-1
LS-18	High level multiple line to push pull grids	50, 125/150, 200, 250, 333, 500/600 ohms	50,000 ohms overall, in two sections	20-20,000	+20 DB	-50 DB	.5 MA	LS-2
LS-26	Bridging line to single or push pull grids	5,000 ohms	60,000 ohms in two sections	15-20,000	+15 DB	-74 DB	0 MA	LS-1

## MIXING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. † Level	Relative * hum	Unbal. DC in prim'y	Case No.
LS-30	Mixing, low impedance mike, pickup, or multiple line to multiple line	50, 125/150, 200, 250, 333, 500/600 ohms	50, 125/150, 200, 250, 333, 500/600 ohms	20-20,000	+15 DB	-74 DB	.5 MA	LS-1
LS-30X	As above	As above	As above	20-20,000	+15 DB	-92 DB-Q	.3 MA	LS-1
LS-31	Three isolated lines or pads to multiple line	30, 50, 200, 250 ohms each primary	50, 125/150, 200, 250, 333, 500/600 ohms	20-20,000	+15 DB	-74 DB	.5 MA	LS-1
LS-31X	As above	As above	As above	20-20,000	+14 DB	-92 DB-Q	.3 MA	LS-1
LS-32	Mixing, low impedance mike, pickup, or parallel mixer to multiple line	2.5, 5.5, 10, 15, 22, 30, 38, 60 ohms	50, 125/150, 200, 250, 333, 500/600 ohms	20-20,000	+15 DB	-74 DB	.5 MA	LS-1



## INTERSTAGE AUDIO TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	± 1 db from	Max. † Level	Relative * hum	Unbal. DC in prim'y	Case No.
LS-19	Single plate to push pull grids like 2A3, 6L6, 300A. Split secondary	15,000 ohms	95,000 ohms; 1.25:1 each side	20-20,000	+12 DB	-50 DB	0 MA	LS-1
LS-20	Single plate to single grid	15,000 ohms	60,000 ohms; 2:1 turn ratio	20-20,000	+10 DB	-74 DB	0 MA	LS-1
LS-21	Single plate to push pull grids. Split pri. and sec.	15,000 ohms	135,000 ohms; 3:1 overall	20-20,000	+10 DB	-74 DB	0 MA	LS-1
LS-40	Single plate to push pull grids. Split secondary	15,000 ohms	135,000 ohms; 3:1 overall	30-20,000	+12 DB	-74 DB	8 MA	LS-1
LS-22	Push pull plates to push pull grids. Split primary and secondary	30,000 ohms plate to plate	80,000 ohms; turn ratio 1.6:1 overall	20-20,000	+18 DB	-50 DB	.25 MA	LS-2
LS-25	Push pull plates to push pull grids. Medium level. Split primary and sec.	30,000 ohms plate to plate	50,000 ohms; turn ratio 1.3:1 overall	20-20,000	+15 DB	-74 DB	1 MA	LS-1
LS-26	Bridging line to 1 or 2 grids	5000 ohms	60,000 in two sections	15-20,000	+15 DB	-74 DB	0 MA	LS-1



LS-2 CASE

Length	4 1/16"
Width	3 1/2"
Height	4 3/16"
Mounting	2 1/16" x 3 1/16"
Screws	8-32
Cutout	2 3/4" dia.
Unit Weight	7.5 lbs.

## PLATE, CRYSTAL, PHOTOCCELL, AND BRIDGING TO LINE TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Imp. ohms	± 1 db from	Max. † Level	Relative * hum	Unbal. DC in prim'y	Case No.
LS-27	Single plate to multiple line	15,000 ohms	50, 125/150, 200, 250, 333, 500/600 cycles	30-15,000	+15 DB	-74 DB	8 MA	LS-1
LS-50	Single plate to multiple line	15,000 ohms	50, 125/150, 200, 250, 333, 500/600	20-20,000	+15 DB	-74 DB	0 MA	LS-1
LS-51	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	20-20,000	+16 DB	-74 DB	1 MA	LS-1
LS-38	Crystal microphone or pickup to multiple line, with internal equalizer	100,000 ohms	50, 125/150, 200, 250, 333, 500/600 Equalized for crystal	Equalized for crystal	+10 DB	-74 DB	0 MA	LS-1
LS-39	Photocell, high-mu triode, diode or overbiased detector to multiple line	100,000 ohms	50, 125/150, 200, 250, 333, 500/600	20-20,000	+10 DB	-74 DB	0 MA	LS-1
LS-150	Bridging from 50 to 500 ohm line to line	4,000 ohms, bridging	50, 125/150, 200, 250, 333, 500/600	15-30,000	+15 DB	-74 DB	1 MA	LS-1
LS-151	Bridging from 50 to 500 ohm line to line	16,000 ohms, bridging	50, 125/150, 200, 250, 333, 500/600	15-30,000	+18 DB	-74 DB	1 MA	LS-1



LS-3 CASE

Length	5 1/16"
Width	5"
Height	4 1/16"
Mounting	4 3/16" x 5 1/2"
Screws	10-24
Cutout	3 3/4" dia.
Unit Weight	15 lbs.

## OUTPUT TRANSFORMERS TO HIGH IMPEDANCE (RF) LOAD

Type No.	Primary will match following typical tubes	Primary Impedance	Secondary Impedance	± .4 db. from	Max. Level	Case No.
LS-56	Push pull 2A3's, 6A5C's, 300A's, 275A's, 6A3's, 6AS7, 6L6	5,000 ohms plate to plate and 3,000 ohms plate to plate	6000, 5000, 4000, 1800, 1500, 1000, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	20 watts	LS-2
LS-66	Class B 203A, 838, ZB120, 805	9,000 ohms plate to plate*	5000, 4200, 4100, 3500, 3300, 2650, 2500, 2100, 1250, 600	25-20,000	260 watts	‡
LS-67	Class B 203A, 838, ZB120, 805	9,000 and 6,900 ohms plate to plate	10000, 2500	25-20,000	260 watts	‡
LS-691	Class B 849, 833, 250TH	10,400 ohms plate to plate	4500, 4000, 3500, 2750, 2000	25-20,000	1000 watts	LS-6
LS-692	Class B push pull parallel 833's	4,750 ohms plate to plate	2500, 2000, 1750, 1500, 1250	25-20,000	2500 watts	LS-6
LS-693	To specifications			25-20,000	5000 watts	Spec.

## MODULATION REACTORS

Type No.	Application	Inductance	DC Current	DC Resistance	Insulation Test Voltage	Case No.
LS-102	Modulation reactor	50 hy	350 MA	250 ohms	5000	‡
LS-103	Modulation reactor	50 hy	900 MA	175 ohms	2500	‡
LS-104A	Modulation reactor	50 hy	1.3 amp	75 ohms	20000	LS-7
LS-106	Modulation reactor	50 hy	750 MA	120 ohms	10000	Spec.

The values of unbalanced DC shown will effect approximately 1.5 DB loss at 30 cycles.

\* Comparison of hum balanced unit with shielding to normal uncasted type.

Q Multiple alloy magnetic shield.

† .006 MW as ODB reference.

‡ See page N-39 for dimensions.

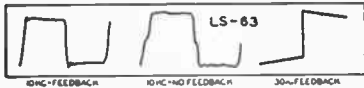
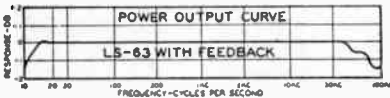
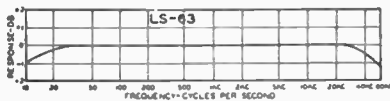




## HYBRID AND REPEAT COILS

Type No.	Application	PrI. and Sec. Impedances	± 1 db from	Max. Level	Hum Reduction	Max. Unbal. DC in Pri.	Case No.
LS-140	Line to line for isolating balanced and unbalanced circuits; balanced for maximum reduction cross talk (70 DB)	500/600 ohms split 500/600 ohms split	30-20,000	+10 DB	-92 DB Quadruple alloy shield	0 MA	LS-1
LS-141	Three sets of balanced windings for hybrid service, centertapped	500/600 ohms 500/600 ohms	30-15,000	+10 DB	-74 DB	0 MA	LS-1
LS-142	Line to line and to push pull grids for hybrid service	500/600 ohms 500/600 ohms 60,000 ohms	30-15,000	+10 DB	-74 DB	0 MA	LS-1
LS-143	High efficiency ring and talk repeat coil, for low frequency ringing	500/600 ohms 500/600 ohms	Efficient 500/600 ohms	+25 DB	-74 DB	5 MA	LS-2

# LS OUTPUT TRANSFORMERS THE FINEST



LS-6 CASE

Length ..... 15 3/4"  
 Width ..... 13"  
 Height ..... 22"  
 Mounting Hole ..... 3/8" dia.  
 Unit Weight ..... 350 lbs.

LS-7 CASE

Length ..... 20 3/8"  
 Mounting ..... 7 3/8" x 14 3/8"  
 Height ..... 16 1/2"  
 Mounting ..... 11 1/8" x 19 3/8"  
 Mounting Hole ..... 3/8" dia.  
 Unit Weight ..... 500 lbs.  
 Width ..... 17 3/4"

## DRIVER TRANSFORMERS

Type No.	Application	Primary Impedance	RefI. Sec. Impedance	± 1 db from	Max. Level	Max. Unbal. DC in Pri.	Case No.
LS-5	Driver, multiple line to class B 838's, 805's, ZB-120's, 203A's and similar tubes	50, 125, 200, 250, 333, 500/600 ohms	2,000 ohms; 1:2 overall turns ratio	20-20,000	+32 DB	5 MA	LS-2
LS-6	Driver, push pull 45's, 2A3's, 6A5G's, etc., to push pull 845 or 2110 grids	5,000 ohms plate to plate	2.25 primary impedance; turns ratio 1.5:1 overall	20-20,000	+32 DB	5 MA	LS-2
LS-7	Push pull 6C5 or similar plates to A prime 45's, 6F6's, 2A3's, 6L6's	30,000 ohms plate to plate	.45 primary impedance turn ratio 1.5:1 Pri. to Sec.	20-20,000	+25 DB	1 MA	LS-2
LS-47	Driver from push pull 2A3's, 6A5G's, or 300A's to class B 838's, 203A's, 805's, or ZB120's	5,000 ohms plate to plate	.1 pri. impedance turns ratio, Pri./1/2 Sec. 3.2:1	20-20,000	+32 DB	5 MA	LS-2
LS-48	Driver transformer push pull 845's to 204 or 849 grids in class B	12,000 ohms plate to plate	.038 pri. impedance turns ratio, Pri./1/2 Sec. 5.1:1	20-20,000	+37 DB	15 MA	LS-3
LS-49	Push pull parallel 2A3, 6A5G, or 300A tubes to four 838, 203A, 805, or ZB120 tubes	2,500 ohms plate to plate	Ratio Pri./1/2 Sec. 4:1 and 2.5:1	20-20,000	+37 DB	10 MA	LS-3

## OUTPUT TRANSFORMERS TO LINE AND VOICE COIL

Type No.	Primary will match following typical tubes	Primary Impedance	Secondary Impedance	± .2 db from	Max. Level	Case No.
LS-52	Push pull 245, 250, 6V6 or 245 A prime	8,000 ohms	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	15 watts	LS-2
LS-54	Same as above	8,000 ohms	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	15 watts	LS-2
LS-55	Push pull 2A3's, 6A5G's, 300A's, 275A's, 6A3's, 6L6's, 6AS7G	5,000 ohms plate to plate and 3,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	20 watts	LS-2
LS-57	Same as above	5,000 ohms plate to plate and 3,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	20 watts	LS-2
LS-58	Push pull parallel 2A3's, 6A5G's, 300A's, 6A3's	2,500 ohms plate to plate and 1,500 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	40 watts	LS-3
LS-60A	Push pull 2A3's, 6A3's, 6B4Q's fixed bias, cathode follower drive	4,600 ohms plate to plate	15, 10, 7.5, 5, 3.75, 2.5, 1.2	20-20,000	30 watts	LS-3
LS-62A	Same as above	As above	500, 125	20-20,000	30 watts	LS-3
LS-61	Push pull 6F6, class B 46's 6AS7G, 807-TR, 1614-TR	10,000 ohms plate to plate and 6,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	15 watts	LS-2
LS-63	Same as above	10,000 ohms plate to plate and 6,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	15 watts	LS-2
LS-6L1	Push pull 6L6's self bias	9,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	30 watts	LS-3
LS-6L3	Same as above	9,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	30 watts	LS-3
LS-6L4	Push pull 6L6's fixed bias or push pull parallel 6L6's self bias	3,800 ohms plate to plate and 4,500 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2	25-20,000	55 watts	LS-3

## HIGH LEVEL MATCHING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	± .2 db from	Max. Level	Case No.
LS-33	High level line matching	50, 125, 200, 250, 333, 500/600 ohms	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500/600	20-20,000	15 watts	LS-2
LS-34	High level line matching	50, 125, 200, 250, 333, 500/600 ohms	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500/600	20-20,000	30 watts	LS-3

# LINEAR STANDARD POWER EQUIPMENT



## COMBINED PLATE AND FILAMENT TRANSFORMERS

Type No.	Typical Application	Pri. Volts 50/60 cycles	High Voltage	Filament Windings	Case No.
LS-180	For pre-amplifier service	110	225-0-225 15 MA	6.3 V.C.T.-2A 6.3 V.C.T.-.6A	LS-1
LS-192	Power amplifier service	105, 115, 125	335-0-335 180 MA DC 60-0-60, 20 MA	5 V.-3A 6.3 V.C.T.-.75A 6.3 V.C.T.-5.25A	LS-3
LS-70	High power amplifier service	100, 105, 110, 115, 120, 125	425-375-0-375-425 200 MA 70-0-70 50 MA	5 V.C.T.-3A 5 V.C.T.-2A 2.5 V.C.T.-10A 6.3 V.C.T.-1A 6.3 V.C.T.-3A	LS-3
LS-72	For fixed or self bias 6L6's, 300A's	100, 105, 110, 115, 120, 125	525-450-0-450-525 250 MA 70-0-70 50 MA	5 V.C.T.-3A 2.5 V.C.T.-3A 2.5 V.C.T.-3A 6.3 V.C.T.-1A 6.3 V.C.T.-3A Tapped at 5 V.C.T.-6A	LS-3
LS-74	For push pull parallel 6L6's, 2A3's, 6B4's	115	415-395-0-395-415 275 MA	5 V.-6A 6.3 V.C.T.-5A	LS-3

In choosing power components for broadcast and commercial equipment, the first factor to be considered is dependability. Linear standard power components are very conservatively designed for maximum reliability. Designs provide for low temperature rise, 40°, and high insulation safety factors. Only the finest of materials and workmanship are used throughout.

## PLATE TRANSFORMERS\*

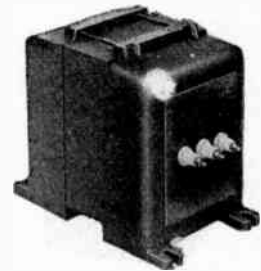
Type No.	Application	Primary Voltage	High Voltage	Approximate DC Voltage	DC Current
LS-183	Class B 805 or push pull parallel 203A's, etc.	100, 110, 120, 220, 230, 240	1750-1500-0-1500- 1750	1500-1250	400 MA
LS-184	Class B 204A, 849, HF200, HF300, 250TH, HK354, 100TH, etc.	100, 110, 120, 220, 230, 240	3500-3000-2500-0- 2500-3000-3500	3000-2500-2100	500 MA
LS-185	For combined class B and class C stages as above	100, 110, 120, 220, 230, 240	3500-3000-2500-0- 2500-3000-3500	3000-2500-2100	1.2 amp.

The low power components of the Linear Standard series are housed in the familiar rectangular LS case with top or bottom mounting facilities. High power components are housed in end castings which completely protect the winding, while directly exposing the laminations for maximum heat transfer.

## FILAMENT TRANSFORMERS

Type No.	Application	Pri. Volts 50/60 cycles	Secondary Voltage	Insulation Test Voltage	Case No.
LS-80	866 rectifiers	100, 110, 120, 220, 230, 240	2.5 V.C.T.-10A	10,000	LS-3
LS-82	872 rectifiers	100, 110, 120, 220, 230, 240	5 V.C.T.-20A	10,000	LS-3
LS-84	203A, 845, etc. HF200, HF300	100, 110, 120, 220, 230, 240	10 V.C.T.-8A	10,000	LS-3
LS-88	6.3 volt tubes	105, 115, 125	6.3 V.C.T.-2A	2,500	LS-1
LS-120	866 Bridge rectifier	100, 110, 120, 220, 230, 240	2.5 V.C.T.-10A 2.5 V.C.T.-5A 2.5 V.C.T.-5A	12,000	LS-3
LS-121Y	872 Bridge rectifier	100, 110, 120, 220, 230, 240	5 V.C.T.-20A 5 V.C.T.-10A 5 V.C.T.-10A	12,000	"
LS-83	872A, 575 or 869 rectifiers	100, 110, 120, 220, 230, 240	5 V.C.T.-20A	35,000	"
LS-89A	Three 869 rectifiers	100, 110, 120, 220, 230, 240	5 V.C.T.-60A	35,000	"

All units have a deep grey finish to obtain the highest heat radiation coefficient. Large components (up to 250 KVA) are housed in oil tanks.



## LINEAR STANDARD FILTER, SWINGING, AND AUDIO CHOKES

(Inductance values are at D.C. current shown)

Type No.	Application	Inductance	DC Current	DC Resistance	Insulation Test Voltage	Case No.
LS-90	Filter choke with hum bucking tap	Series-50 hy Parallel-12.5 hy	50 MA 100 MA	510 ohms 128 ohms	2000	LS-2
LS-91	Filter choke with hum bucking tap	Series-14 hy Parallel-3.5 hy	125 MA 250 MA	200 ohms 50 ohms	2000	LS-2
LS-92	Filter choke with hum bucking tap	Series-16 hy Parallel-4 hy	175 MA 350 MA	96 ohms 24 ohms	2500	LS-3
LS-93	Filter choke with hum bucking tap	Series-26 hy Parallel-6.5 hy	200 MA 400 MA	112 ohms 28 ohms	3500	LS-3
LS-94	Parallel feed and filter choke	Series-320 hy Parallel-80 hy	3 MA 6 MA	6400 ohms 1600 ohms	1500	LS-1
LS-950	Filter choke with hum bucking tap	Series-100 hy Parallel-25 hy	35 MA 70 MA	1000 ohms 200 ohms	1500	LS-2
LS-96	Filter choke with hum bucking tap	Series-20 hy Parallel-5 hy	500 MA 1 amp	90 ohms 22.5 ohms	7500	"
LS-980	Filter choke with hum bucking tap	Series-14 hy Parallel-3.5 hy	400 MA 800 MA	100 ohms 25 ohms	5000	LS-3
LS-98	Swinging choke	8-40 hy	400 MA	90 ohms	5000	LS-3
LS-99	Filter choke with hum bucking tap	Series-20 hy Parallel-5 hy	1 amp 2 amp	50 ohms 12.5 ohms	10000	"
LS-105	Swinging choke	8-40 hy	1 amp	50 ohms	10000	"

\* See dimension chart, this page.

## DIMENSIONS

Type No.	L	W	H	Mtg.	Wt.
LS-66	9 3/4	4 3/4	6 3/4	3 7/8 x 9 1/8	37
LS-67	9 3/4	4 3/4	6 3/4	3 7/8 x 9 1/8	37
LS-73	9 1/2	4 3/4	6 3/4	3 7/8 x 8 7/8	34
LS-83	8 3/4	4 3/4	6 3/4	3 7/8 x 8 1/8	25
LS-89A	9 9/8	7	9	6 x 8 9/8	68
LS-96	10 1/4	4 3/4	6 3/4	3 7/8 x 9 9/8	40
LS-99	14 1/8	8 1/2	10 1/4	7 1/4 x 13 1/8	80
LS-102	9 3/4	4 3/4	6 3/4	3 7/8 x 9 1/8	37
LS-103	13 1/8	8 1/2	10 1/4	7 1/4 x 12 1/8	58
LS-105	13 1/8	8 1/2	10 1/4	7 1/4 x 12 1/8	58
LS-121Y	8 1/4	3 3/4	5 1/8	3 x 7-13/16	23
LS-181	9 3/4	4 3/4	6 3/4	3 7/8 x 9 1/8	37
LS-182	10 3/4	4 3/4	6 3/4	3 7/8 x 10 1/8	45
LS-183	15 1/2	10	13 1/4	8 1/2 x 14 1/2	70
LS-184	17 1/4	10	13 1/4	8 1/2 x 16 1/4	102
LS-185	23	10	13 1/4	8 1/2 x 22	230



# HIPERM ALLOY TRANSFORMERS

The UTC Hiperm alloy audio and power transformers are specifically designed for portable and compact service. While light in weight, neither dependability nor fidelity has been sacrificed. The frequency characteristic of the Hiperm alloy audio units is uniform from 30 to 20,000 cycles. They incorporate a Hiperm-alloy nickel iron core and hum balanced coil structure. The rugged die cast case is of high conductivity alloy finished in grey, arranged for mounting with the terminals either up or down. DC in Prim'y shown is maximum unbalanced.

## LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS

Type No.	Application	Primary Imp. (ohms)	Secondary Impedance	± 1 db from	Max. Level	DC in Prim'y	Case No.
HA-100	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200, 250, 333, 500/600	60,000 ohms in two sections	30-20,000	+ 10DB	.5 MA	H-1
HA-100X	Same as above but with tri-alloy internal shield to effect very low hum pickup						H-1
HA-101	Low impedance mike, pickup, or multiple line to P.P. grids	50, 125/150, 200, 250, 333, 500/600	120,000 ohms overall, split	30-20,000	+ 10DB	.5 MA	H-1
HA-101X	As above but with tri-alloy internal shield to effect very low hum pickup		80,000 ohms overall, split				H-1
HA-103A	Low impedance mike, pickup, or parallel mixer to grid	2.5, 5.5, 10, 15, 22, 30, 38, 60	80,000 ohms in two sections	30-20,000	+ 10DB	.5 MA	H-1
HA-108	Mixing, low impedance mike, pickup, or multiple line	50, 125/150, 200, 250, 333, 500/600	50, 125/150, 200, 250, 333, 500/600	30-20,000	+ 10DB	.5 MA	H-1
HA-108X	Same as above but with tri-alloy internal shield to effect very low hum pickup						H-1
HA-130X	Three isolated lines or pads to one or two grids with tri-alloy internal shield	30, 50, 200, 250 each primary	60,000 ohms overall, in two sections	30-20,000	+ 10DB	.5 MA	H-1



TYPE H-1 CASE

Length ..... 2 3/8"  
 Width ..... 1 1/8"  
 Height ..... 3 1/8"  
 Mounting ..... 1 1/8" x 1 1/8"  
 Screws ..... 6-32  
 Cutout ..... 1 1/8" dia.  
 Unit Weight ..... 2 lbs.

## INTERSTAGE AUDIO TRANSFORMERS

Type No.	Application	Primary Imp.	Secondary Impedance	± 1 db from	Max. Level	DC in Prim'y	Case No.
HA-104	Single plate to P.P. grids like 2A3, 6L6 (split secondary)	15,000 ohms	95,000 ohms 1.25:1	30-20,000	+ 12 DB	0 MA	H-1
HA-105	Single plate to single grid (split secondary)	15,000 ohms	60,000 ohms 2:1 turn ratio	30-20,000	+ 12 DB	0	H-1
HA-106	Single plate to push pull grids (split secondary)	15,000 ohms	135,000 ohms 3:1 ratio overall	30-20,000	+ 12 DB	0	H-1
HA-107	Push pull plates to push pull grids (split primary and secondary)	30,000 ohms plate to plate	80,000 ohms 1.6:1 turn ratio overall	30-20,000	+ 20 DB	.25 MA	H-2
HA-137	Push pull plates to push pull grids (split Pri. and Sec.)	30,000 ohms plate to plate	68,000 ohms 1.5:1 turn ratio	30-20,000	+ 12 DB	0	H-1

## PLATE AND CRYSTAL TO LINE TRANSFORMERS

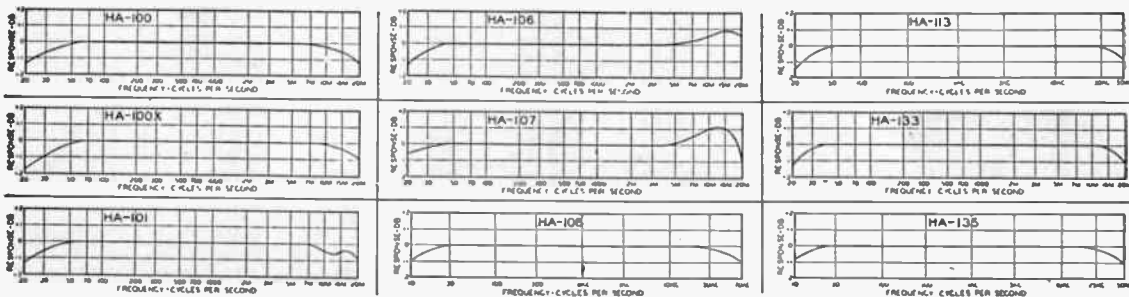
Type No.	Application	Primary Imp.	Secondary Imp. ohms	± 1 db from	Max. Level	DC in Prim'y	Case No.
HA-111	Crystal microphone or pickup, to multiple line	100,000 ohms	50, 125/150, 200, 250, 333, 500/600	30-20,000 measured with resistive source	+ 10 DB	0	H-1
HA-113	Single plate to multiple line	15,000 ohms	50, 125/150, 200, 250, 333, 500/600	30-20,000	+ 12 DB	0 MA	H-1
HA-133	Single plate to multiple line (D.C. in Pri.)	15,000 ohms	50, 125/150, 200, 250, 333, 500/600	30-20,000	+ 15 DB	8 MA	H-1
HA-114	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	30-20,000	+ 16 DB	1 MA	H-1
HA-134	Push pull 6B4's, 6L6, or 2A3's to line	5000/9400 ohms plate to plate	50, 125/150, 200, 250, 333, 500/600	30-20,000	+ 32 DB	5 MA	H-2
HA-135	Push pull 2A3's, etc. to voice coil	3000/5000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2	30-20,000	+ 34 DB	5 MA	H-2

## POWER TRANSFORMERS AND CHOKES

Type No.	Application	Primary Voltage 50/60 cycles	High Voltage	Filament Windings	Case No.
KP-122	Pre-amp. power supply using 6X4, 6X5 rectifier	115	220-0-220 15 MA	6.3 V.C.T.-.6A 6.3 V.C.T.-1.2A	H-1
WP-123	Pre-amp. or tuner power supply using 6X4, 6X5 rectifier	115	275-0-275 35 MA	6.3 V.C.T.-.6A 6.3 V.C.T.-2A	H-2

Type No.	Application	Inductance	DC Current	DC Resistance	Test Voltage	Case No.
HC-115	Parallel feed and filter choke	Series-400 hy Parallel-100 hy	2.5 MA 5 MA	7000 ohms 1750 ohms	1500	H-1
HC-116	Parallel feed and filter choke	Series-600 hy Parallel-150 hy	8 MA 16 MA	4000 ohms 1000 ohms	1500	H-2
HC-117	Parallel feed and filter choke	Series-200 hy Parallel-50-hy.	15 MA 30 MA	3000 ohms 750 ohms	1500	H-1





# ULTRA COMPACT AUDIO UNITS

The UTC Ultra compact audio units are small and light in weight, ideally suited to remote amplifier and similar compact equipment. High fidelity is obtainable in all individual units, the frequency response being  $\pm 2$  DB from 30 to 20,000 cycles.

All units except those carrying DC in Primary employ a true hum balancing coil structure, which combined with a high conductivity outer case, effects good inductive shielding. The die-cast case provides for top or bottom mounting. Maximum operating level  $+7$  DB.

## LOW IMPEDANCE TO GRID AND MIXING TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-10	Low impedance mike, pickup, or multiple line to grid	50, 125/150, 200/250, 333, 500/600 ohms	50,000 ohms	30-20,000
A-11	Low impedance mike, pickup, or line to 1 or 2 grids	50, 200, 500	50,000 ohms	50-20,000 multiple alloy shield for extremely low hum pickup
A-12	Low impedance mike, pickup, or multiple line to push pull grids	50, 125/150, 200/250, 333, 500/600 ohms	80,000 ohms overall, in two sections	30-20,000
A-14	Dynamic microphone to one or two grids	30 ohms	50,000 ohms overall, in two sections	30-20,000
A-20	Mixing, low impedance mike, pickup, or multiple line to multiple line	50, 125/150, 200/250, 333, 500/600 ohms	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000
A-21	Mixing, low impedance mike, pickup, or line to line	50, 200/250, 500/600	50, 200/250, 500/600	50-20,000 multiple alloy shield for extremely low hum pickup



## INTERSTAGE AUDIO TRANSFORMERS

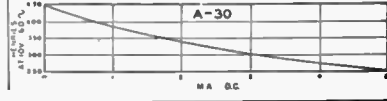
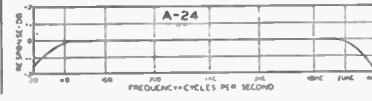
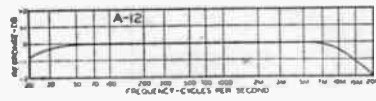
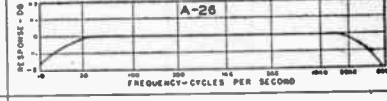
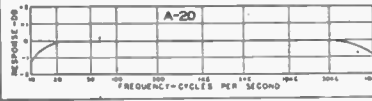
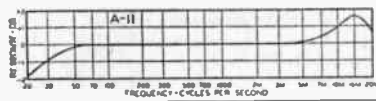
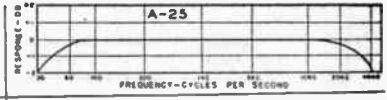
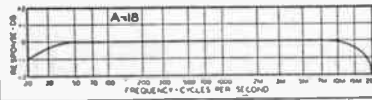
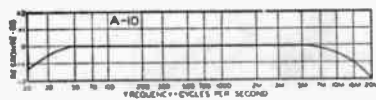
Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-18	Single plate to single grid	15,000 ohms	60,000 ohms, 2:1 turn ratio	30-20,000
A-17	Single plate to single grid 8 MA unbalanced D.C.	As above	As above	50-20,000
A-18	Single plate to two grids. Split primary, can also be used for P.P. plates	15,000 ohms	80,000 ohms overall, 2.3:1 turn ratio overall	30-20,000
A-19	Single plate to two grids 8 MA unbalanced D.C.	15,000 ohms	80,000 ohms overall, 2.3:1 turn ratio overall	50-20,000

### TYPE A CASE

Length .....  $1\frac{1}{2}$ "  
 Width .....  $1\frac{1}{2}$ "  
 Height ..... 2"  
 Mounting .....  $1\frac{1}{2}$ " sq.  
 Screws ..... 4-40  
 Cutout .....  $1\frac{1}{8}$ " dia.  
 Unit Weight .....  $\frac{1}{2}$  lb.

## PLATE AND CRYSTAL TO LINE TRANSFORMERS

Type No.	Application	Primary Impedance	Secondary Impedance	$\pm 2$ db from
A-24	Single plate to multiple line	15,000 ohms	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000
A-25	Single plate to multiple line 8 MA unbalanced D.C.	15,000 ohms	50, 125/150, 200/250, 333, 500/600 ohms	50-20,000
A-26	Push pull low level plates to multiple line	30,000 ohms plate to plate	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000
A-27	Crystal microphone to multiple line	100,000 ohms	50, 125/150, 200/250, 333, 500/600 ohms	30-20,000 measured with non-inductive source
A-30	Audio choke, 250 henrys @ 5 MA 6000 ohms D.C., 65 henrys @ 10 MA 1500 ohms D.C. 450 henrys @ 0 MA			
A-32	Filter choke 60 henrys @ 15 MA 2000 ohms D.C., 15 henrys @ 30 MA 500 ohms D.C.			



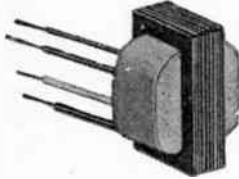


# SUBOUNCER UNITS

## FOR HEARING AIDS...VEST POCKET RADIOS...MIDGET DEVICES

UTC Sub-Ouncer units fulfill an essential requirement for miniaturized components having relatively high efficiency and wide frequency response. Through the use of special nickel iron core materials and winding methods, these miniature units have performance and dependability characteristics far superior to any other comparable items. They are ideal for hearing aids, miniature radios, and other types of miniature electronic equipment.

The coils employ automatic layer windings of double Formex wire . . . in a molded Nylon bobbin. All insulation is of cellulose acetate. Four inch color coded flexible leads are employed, securely anchored mechanically. No mounting facilities are provided, since this would preclude maximum flexibility in location. Units are vacuum impregnated and double (water proof) sealed. The curves below indicate the excellent frequency response available. Alternate curves are shown to indicate operating characteristics in various typical applications.

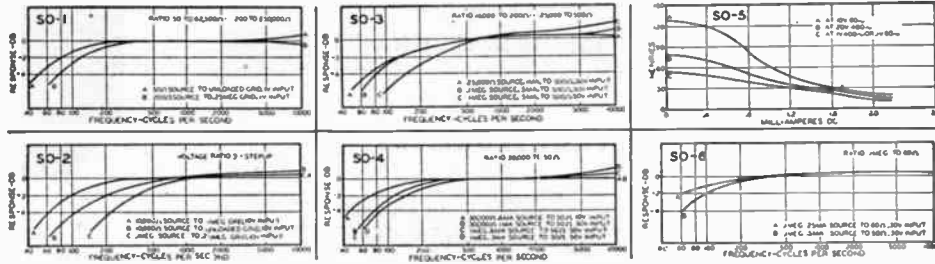


**SUBOUNCER UNIT**

Dimensions .....  $\frac{1}{16}$ " x  $\frac{3}{8}$ " x  $\frac{7}{8}$ "  
Weight ..... .03 lb.

Type	Application	Level	Pri. Imp.	D.C. in Pri.	Sec. Imp.	Pri. Res.	Sec. Res.
SO-1	Input	+ 4 V.U.	200 50	0	250,000 62,500	16	2650
SO-2	Interstage/3:1	+ 4 V.U.	10,000	0	90,000	225	1850
SO-3	Plate to Line	+ 20 V.U.	10,000 25,000	3 mil. 1.5 mil.	200 500	1300	30
SO-4	Output	+ 20 V.U.	30,000	1.0 mil.	50	1800	4.3
SO-5	Reactor 50 HY at 1 mil. D.C.	3000 ohms D.C. Res.					
SO-6	Output	+ 20 V.U.	100,000	.5 mil.	60	3250	3.8

\*Impedance ratio is fixed, 1250:1 for SO-1, 1:50 for SO-3. Any impedance between the values shown may be employed.



# SUB-SUBOUNCER UNITS

## FOR HEARING AIDS AND ULTRA-MINIATURE EQUIPMENT

UTC Sub-SubOuncer units have exceptionally high efficiency and frequency range in their ultra-miniature size. This has been effected through the use of specially selected Hiperm-Alloy core material and special winding methods. The constructional details are identical to those of the Sub-Ouncer units described above. The curves below show actual characteristics under typical conditions of application.

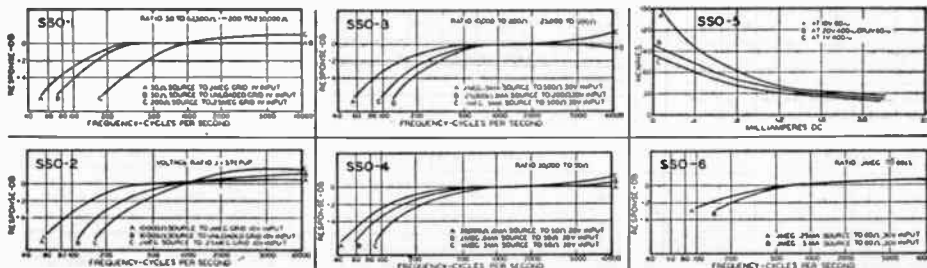


**SUB-SUBOUNCER UNIT**

Dimensions .....  $\frac{1}{16}$ " x  $\frac{3}{8}$ " x  $\frac{3}{8}$ "  
Weight ..... .02 lb.

Type	Application	Level	Pri. Imp.	D.C. in Pri.	Sec. Imp.	Pri. Res.	Sec. Res.
SSO-1	Input	+ 4 V.U.	200 50	0	250,000 62,500	13.5	3700
SSO-2	Interstage/3:1	+ 4 V.U.	10,000	0	90,000	750	3250
SSO-3	Plate to Line	+ 20 V.U.	10,000 25,000	3 mil. 1.5 mil.	200 500	2600	35
SSO-4	Output	+ 20 V.U.	30,000	1.0 mil.	50	2875	4.6
SSO-5	Reactor 50 HY at 1 mil. D.C.	4400 ohms D.C. Res.					
SSO-6	Output	+ 20 V.U.	100,000	.5 mil.	60	4700	3.3

\*Impedance ratio is fixed, 1250:1 for SSO-1, 1:50 for SSO-3. Any impedance between the values shown may be employed.



# OUNCER AUDIO UNITS

STANDARD AND PLUG-IN TYPES



UTC OUNCER components represent the acme in compact quality transformers. These units, which weigh one ounce, are fully impregnated and sealed in a drawn aluminum housing  $\frac{7}{8}$ " diameter . . . mounting opposite terminal board.

Ouncer items are ideal for portable broadcast, hearing aid, aircraft, concealed service, and similar applications. High fidelity characteristics are provided, uniform from 40 to 15,000 cycles, except for O-14, O-15, and units carrying DC which are intended for voice frequencies from 150 to 4,000 cycles. Maximum level 0 DB.

"P" series units are identical to the UTC OUNCER units but are sealed in bakelite housings with plug-in base to fit standard octal socket. While of submersion proof design, these units weigh but two ounces. Oversize pins in the base make it impossible to dislodge these units from their sockets.

OUNCER Type No.	Application	Pri. Imp.	Sec. Imp.	PLUG-IN Type No.
O-1	Mike, pickup or line to 1 grid	50, 200/250, 500/600	50,000	P-1
O-2	Mike, pickup or line to 2 grids	50, 200/250, 500/600	50,000	P-2
O-3	Dynamic mike to 1 grid	7.5/30	50,000	P-3
O-4	Single plate to 1 grid	15,000	60,000	P-4
O-5	Single plate to 1 grid, D.C. in Pri.	15,000	60,000	P-5
O-6	Single plate to 2 grids	15,000	95,000	P-6
O-7	Single plate to 2 grids, D.C. in Pri.	15,000	95,000	P-7
O-8	Single plate to line	15,000	50, 200/250, 500/600	P-8
O-9	Single plate to line, D.C. in Pri.	15,000	50, 200/250, 500/600	P-9
O-10	Push pull plates to line	30,000 ohms plate to plate	50, 200/250, 500/600	P-10
O-11	Crystal mike or pick-up to line	50,000	50, 200/250, 500/600	P-11
O-12	Mixing and matching	50, 200/250	50, 200/250, 500/600	P-12
O-13	Reactor, 300 Hys.—no D.C.; 50 Hys.—3 MA. D.C., 6000 ohms			P-13
O-14	50:1 mike or line to 1 grid	200	$\frac{1}{2}$ megohm	P-14
O-15	10:1 single plate to 1 grid	15,000	1 megohm	P-15



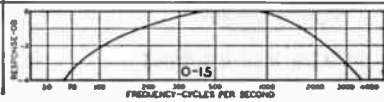
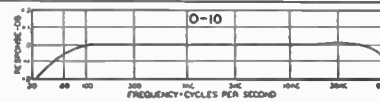
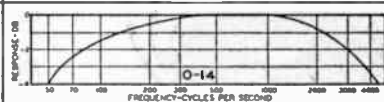
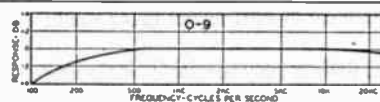
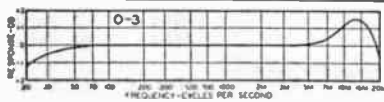
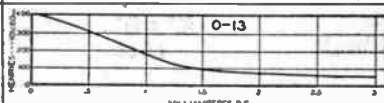
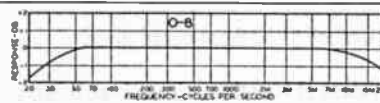
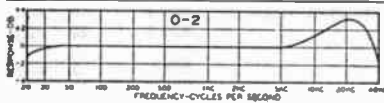
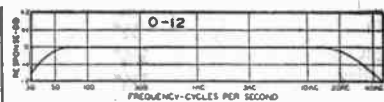
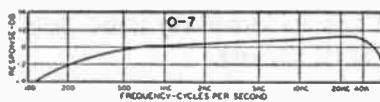
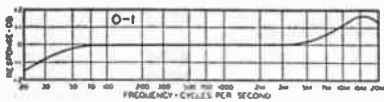
OUNCER CASE

Dia. ....  $\frac{7}{8}$ "  
 Ht. ....  $1\frac{1}{8}$ "  
 Mtg. ....  $\frac{1}{16}$ "  
 Scr. .... 2-56  
 Wt. .... 1 oz.



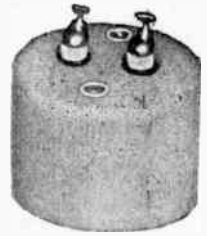
PLUG-IN CASE

Dia. ....  $1\frac{1}{2}$ "  
 Ht. ....  $1\frac{1}{2}$ "  
 Skt. .... St. Oct.  
 Wt. .... 2 oz.



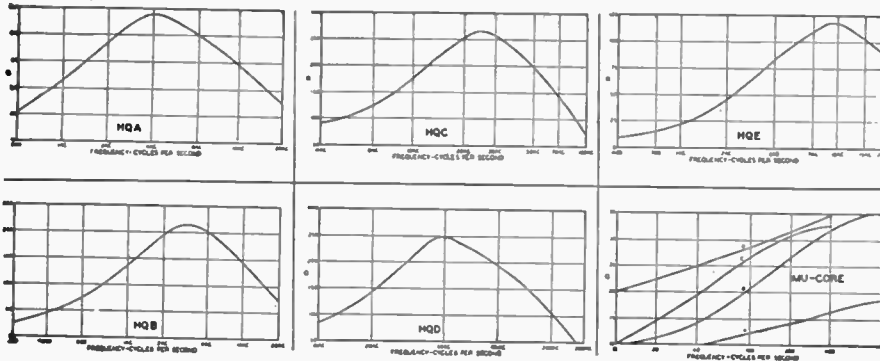


# HIGH Q TOROID INDUCTORS



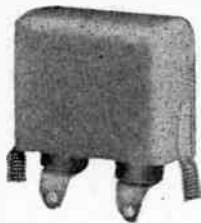
HQA, HQC, HQD CASE

Diameter	.....	1 1/8"
Height	.....	1 3/8"
Mounting	.....	1 1/8"
Screws	.....	6-32
Cutout	.....	3/16" x 1 3/8"
Weight	.....	5 oz.



HQB CASE

Length	.....	2 3/8"
Width	.....	1 1/8"
Height	.....	2 1/2"
Mounting	.....	1 1/4" x 2 1/4"
Screws	.....	6-32
Cutout	.....	3/16" x 1 1/8"
Unit Weight	.....	14 oz.



HQE CASE

Length	.....	1 3/8"
Width	.....	1/2"
Height	.....	1 3/8"
Mounting	.....	1 3/8"
Screws	.....	6/32"
Cutout	.....	3/16" x 7/8"
Unit Weight	.....	1.5 oz.



UNCASED HIGH Q TOROIDS

There are many applications in the audio, carrier, and super-sonic fields requiring inductors of high Q and great stability. The HQ series of permalloy dust toroid units developed for these applications have remarkable characteristics.

HQA coils have maximum Q (100) at approximately 5,000 cycles. HQB coils have maximum Q (200) at approximately 4,000 cycles. HQC coils have maximum Q (200) at approximately 30 Kc. HQD coils have maximum Q (200) at approximately 60 Kc. The stability is excellent and types are available for all high Q applications from 300 cycles to 300 Kc.

Stability is excellent. For the HQA-7 coil illustrated inductance change is less than 1% for applied voltages from .1 to 25 volts. For the HQB-5 coil illustrated the inductance change is less than 1% for applied voltage from .1 to 50 volts. DC is permissible through the coil. Inductance is virtually independent of frequency, temperature, and vibration.

Hum pickup is extremely low due to the toroidal winding structure . . . 70 microvolts per gauss for the HQA, 140 microvolts per gauss for the HQB. The cased toroid structure permits close spacing of units, effecting a coupling attenuation of approximately 80 DB.

All HQ coils are hermetically sealed. Units are laboratory adjusted to 1% tolerance.

Uncased HQ Coils in any of the types listed are available from stock. Deduct \$1.50 from cased price.

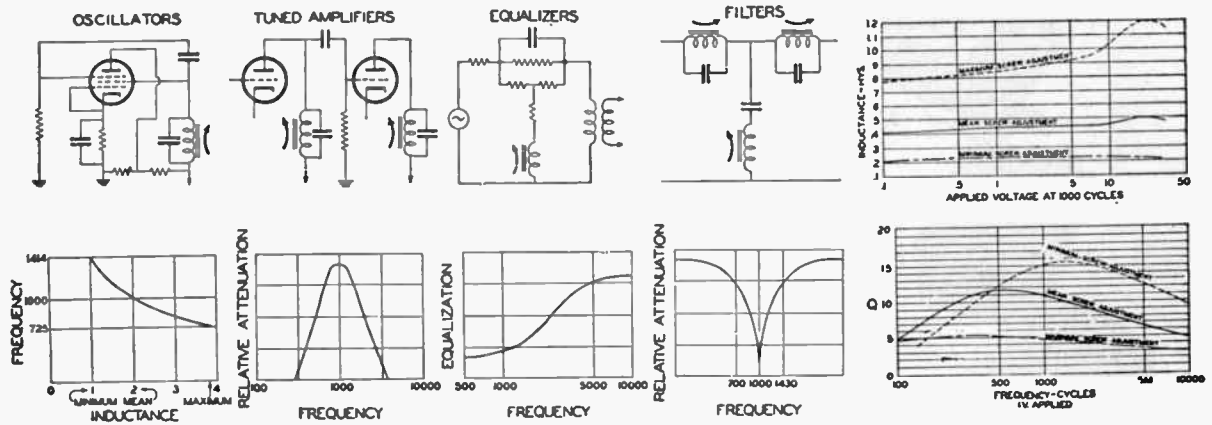
Other Values of Inductance than those listed available on special order at price of next higher listed value.

Mu-Core Coils employ special laminated core structures for good stability and low external field. The curves shown indicate approximate Q obtainable at any specific frequency by designing for that frequency.

Type No.	Inductance Value	*OC MA Max.
HQA-1	5 mhy.	400
HQA-2	12.5 mhy.	260
HQA-3	20 mhy.	200
HQA-4	30 mhy.	160
HQA-5	50 mhy.	130
HQA-6	80 mhy.	100
HQA-7	125 mhy.	85
HQA-8	200 mhy.	65
HQA-9	300 mhy.	50
HQA-10	.5 hy.	40
HQA-11	.75 hy.	35
HQA-12	1.25 hy.	26
HQA-13	2. hy.	20
HQA-14	3. hy.	16
HQA-15	5. hy.	13
HQA-16	7.5 hy.	10
HQA-17	10. hy.	9
HQA-18	15. hy.	8
HQB-1	10 mhy.	410
HQB-2	30 mhy.	240
HQB-3	70 mhy.	170
HQB-4	120 mhy.	120
HQB-5	.5 hy.	60
HQB-6	1. hy.	41
HQB-7	2. hy.	30
HQB-8	3.5 hy.	22
HQB-9	7.5 hy.	16
HQB-10	12. hy.	11
HQB-11	18. hy.	9
HQB-12	25. hy.	8
HQC-1	1 mhy.	
HQC-2	2.5 mhy.	
HQC-3	5 mhy.	
HQC-4	10 mhy.	
HQC-5	20 mhy.	
HQD-1	.4 mhy.	
HQD-2	1. mhy.	
HQD-3	2.5 mhy.	
HQD-4	5 mhy.	
HQD-5	15 mhy.	
HQE-1	5 mhy.	
HQE-2	10 mhy.	
HQE-3	50 mhy.	
HQE-4	100 mhy.	
HQE-5	200 mhy.	

\*This value of D.C. will drop the coil inductance 5%. Values of D.C. below this will show proportionately (linear) less inductance drop. For example HQA-8 will drop 1/2" in L with 6.5MA.

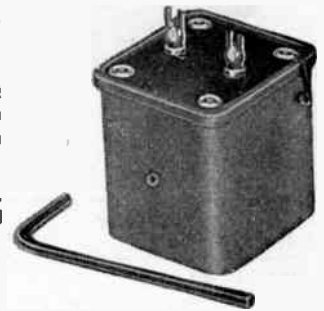
# UTC VARIABLE INDUCTORS



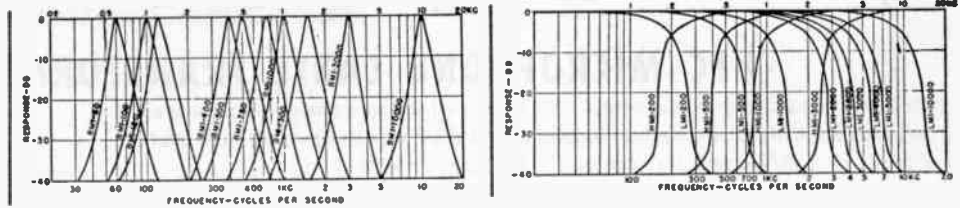
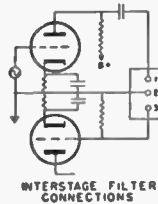
Type	Mean Hys.	Type	Mean Hys.
VI-C1	.0085	VI-C12	1.3
VI-C2	.013	VI-C13	2.2
VI-C3	.021	VI-C14	3.4
VI-C4	.034	VI-C15	5.4
VI-C5	.053	VI-C16	8.5
VI-C6	.084	VI-C17	13.
VI-C7	.13	VI-C18	21.
VI-C8	.21	VI-C19	33.
VI-C9	.34	VI-C20	52.
VI-C10	.54	VI-C21	83.
VI-C11	.85	VI-C22	130.

UTC type VIC variable inductors offer a revolutionary approach to the problem of tuned audio circuits. By adjusting a set screw in the side of the case, an inductance value of +90%, -50% from mean value is obtainable. Setting is positive. Effective Q for a wide frequency range and variation of inductance with applied AC voltage are shown on the illustrated curves, for a typical VIC unit.

The VIC inductor is housed in a rugged die cast case 1 1/2" long, 1 1/4" wide and 1 1/2" high with mounting centers on terminal board side 1 1/8" by 3/32". Weight is 5 1/2 oz.



# UTC INTERSTAGE AND LINE FILTERS



## STOCK FREQUENCIES

(Number after letters is frequency)

BMI-60	LMI-200
BMI-100	LMI-500
BMI-120	LMI-1000
BMI-400	LMI-2000
BMI-500	LMI-3000
BMI-750	LMI-5000
BMI-1000	LMI-10000
BMI-1500	BML-400
BMI-3000	BML-1000
BMI-10000	HML-200
HMI-200	HML-500
HMI-500	LML-1000
HMI-1000	LML-2500
HMI-3000	LML-4000
	LML-12000

UTC standardized filters have been designed to take care of many present day filter requirements through stock units. The interstage type filters have a nominal impedance of 10,000 ohms, and lend themselves to effecting gain simultaneously with their frequency discrimination.

BMI units (Band Pass) have 2:1 gain. They are sharply peaked, having approximately 2 DB attenuation at plus or minus 3% from center frequency and attenuation of 40 DB per octave as shown.

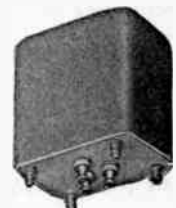
HMI units (High Pass) have a loss of less than 6 DB at cutoff frequency.

LMI units (Low Pass) have a loss of less than 6 DB at cutoff frequency, and an attenuation of 35 DB at 1.5 cutoff frequency.

BML (Band Pass), HML (High Pass), and LML (Low Pass) filters are similar to the interstage filters, in all characteristics, except that they are intended for an input and output impedance of 500/600 ohms.

All of the standard filters are housed in hermetically sealed cases, shielded to reduce hum pickup to 150 MV per gauss at 60 cycles.

In addition to the stock filters listed, any of the six types are available as special units for any frequency from 200 to 10,000 cycles. Order by type followed by frequency, as LMI-2500, designating low pass interstage filter—2500 cycles cutoff frequency. These special units are priced at \$35.00 net.



## FILTER CASE M

Base	1 1/8" x 1 1/8"
Mtg. Screws	3/8" x 1 1/4"
Mtg. Screws	6-32
Cutout	7/8" dia.
Height, BMI, LMI, BML	1 1/2"
Height, HMI, HML, LML	2 1/2"
Weight	.6 oz. and 9 oz.





# UTC VARITRAN CONTROL UNITS

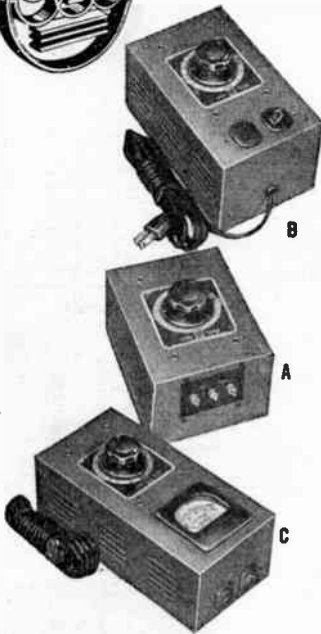
For controlling: Rectifier output . . . motors . . . heaters . . . lights . . . line voltage

The UTC Varitran is a simple autotransformer whose turns are arranged on one layer with the insulation removed so that every exposed turn may be used as a tap of the winding. A special non-fusing contact can be moved to any position on the winding, permitting the exact voltage desired to be obtained. The regulation and efficiency are excellent and no distortion of wave form occurs. The output voltage is independent of load. In addition to its many laboratory uses, the Varitran is widely employed for controlling electric ovens, fans, soldering irons, furnaces and heaters, for photographic and enlarging lighting control, for life tests of lamps and for dimming illumination.

## VARITRAN RATINGS

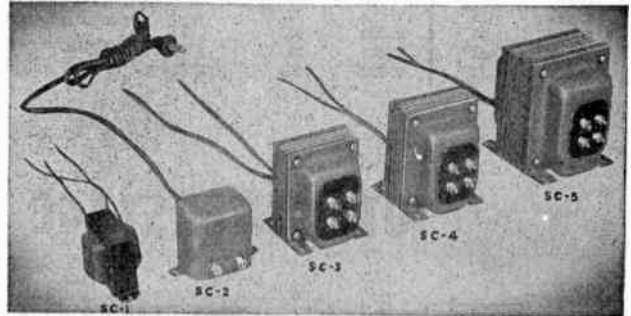
Standard Varitrans are designed for 115 or 230 volt service. The respective output voltages are 0-130 and 0-260 volts. The Varitran autotransformer current and wattage rating is based at 115 volts (115V. models). As the voltage is reduced, the wattage output is reduced correspondingly. The maximum current can be taken at any point from 0 to 20 volts and from 95 to 130 volts. Between 20 and 95 volts the current capacity tapers off from the two ends to approximately 60% of the rated maximum current at the 65 volt point. The mounting facilities are at both top and bottom of each unit to assure ease of mounting on panel, chassis or for laboratory bench service.

Type	Input Voltage	Output Voltage	Watts	Max. Amps.	Figure	Approx. Dimensions	Weight
V-0	115 volts	0-130	230	2	A	4¼ x 6½ x 4½	10
V-0-B	230 volts	0-260	230	1	A	4¼ x 6½ x 4½	11
V-1	115 volts	0-130	570	5	B	4¾ x 8 x 3¾	12
V-1-M	115 volts	0-130	570	5	C	4¾ x 9¾ x 3¾	14
V-2	115 volts	0-130	570	5	A	4¾ x 7½ x 3¾	13
V-2-B	230 volts	0-260	570	2.5	A	4¾ x 7½ x 3¾	16
V-3	115 volts	0-130	850	7.5	A	4¾ x 7½ x 3¾	16
V-3-B	230 volts	0-260	850	3.75	A	5½ x 7½ x 5½	20



## UTC SIGNALLING AND CONTROL TRANSFORMERS

TYPE	SECONDARY VOLTS	WATTS	OVERALL DIMENSIONS	WEIGHT LBS.
SC-1	6.1	20	1¾ x 3¼ x 2	1½
SC-2	6.1	20	2½ x 3¼ x 2¼	1½
SC-3	4, 8, 12, 16, 20, 24	50	3 x 3¼ x 3½	4
SC-4	4, 8, 12, 16, 20, 24	100	3¼ x 4½ x 4	5½
SC-5	4, 8, 12, 16, 20, 24	250	4 x 5 x 4¾	10½



## UTC MICROPHONE CABLE TRANSFORMERS

UTC cable transformers are designed to be inserted in the cable circuit, and are ruggedly constructed to withstand mechanical abuse. The cable connections (supplied less cable) are made through spring strain relief to terminal boards inside the end caps. 1½" diameter . . . 2½" long . . . ½ lb.

Type MC-1—primary tapped 30/50 and 200/250 ohms, secondary to grid, standard fidelity.

Type MC-2—primary tapped 30/50 and 200/250 ohms, secondary to grid, high fidelity.

UTC Telephone type MIKE/HIGH IMPEDANCE ADAPTOR is designed to match low impedance sources to an amplifier having high impedance input. Will match any source from 50 to 600 ohms, effecting a 15:1 step up ratio (225:1 impedance ratio). The plug on MA-1 goes into jack on amplifier . . . the plug from mike goes into jack on MA-1. Flat 40-10,000 cycles. Rugged die casting 7/8 x 1 1/8 x 2 1/8.

Type MA-1—primary 50 to 500 ohms . . . 15:1 ratio . . . jack input . . . plug output.

UTC Amplifier type mike/high impedance adaptor is identical to MA-1 in electrical characteristics. The high impedance side employs a connector similar to Amphenol 75-MC1F. This single conductor connector screws unit on to corresponding male plug connector usually found on amplifiers. The low impedance side employs a connector similar to Amphenol 91-MC3M . . . the usual 3 contact recessed male connector to which standard quality microphone plugs will mate.

Type MB-1—Primary 50 to 500 ohms . . . 15:1 ratio.



UTC MICROPHONE CABLE TRANSFORMERS

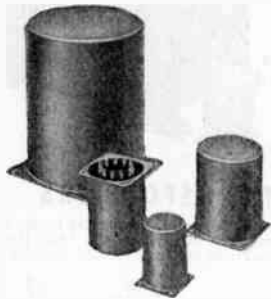


UTC Telephone type MIKE/HIGH IMPEDANCE ADAPTOR



UTC AMPLIFIER TYPE MIKE/HIGH IMPEDANCE ADAPTOR

# COMMERCIAL GRADE COMPONENTS



The commercial grade series of transformers incorporate conservative design and rugged construction to assure dependability under continuous service operation in industrial and commercial grade communication equipment. These units are mounted in uniform drawn cases finished in light grey enamel, and intended for chassis mounting. All items are poured with special sealing compound in addition to vacuum impregnation of coil structures. Type numbers are identical with the PA units except for the prefix "CG."

CG-134, 135 and 136 are of the hum-bucking type to assure low hum pick-up. All audio components are linear.  $\pm 1\frac{1}{2}$  DB from 40 to 10,000 cycles (no unbalanced D.C.), except CVL and CVM units . . . 40 to 6000 cycles. Parallel feed low level interstage units with 50,000 ohms and .25 mfd. 200 ohm windings on input transformers are balanced and may be used for 150 to 250 ohm circuits.



## INPUT, INTERSTAGE, MIXING AND LOW LEVEL OUTPUT TRANSFORMERS

Type No.	Application	Primary Impedance Ohms	Secondary Impedance Ohms	Case No.
CG-131	1 plate to 1 grid	15,000	135,000 3:1 ratio	RC-50
CG-132	1 plate to 2 grids	15,000	135,000 centertapped 3:1 ratio overall	RC-62
CG-133	2 plates to 2 grids	30,000 P to P	80,000 overall 1.6:1 ratio overall	RC-75
CG-134	Line to 1 grid hum-bucking	50, 200, 500	80,000	RC-50
CG-135	Line to 2 grids hum-bucking	50, 200, 500	120,000 overall	RC-50
CG-235	Line to 1 or 2 grids, hum-bucking; multiple alloy shielded for low hum pickup	50, 200, 500 ohms	80,000 overall	RC-75
CG-136	Single plate and low impedance mike or line to 1 or 2 grids hum-bucking	15,000, 50, 200	80,000 overall	RC-62
CG-233	PP 6CS, 12AU7, similar triodes to AB 45's, 2A3's, 6L6's, etc.	30,000 P to P	25,000 overall 9:1 ratio overall	RC-87
CG-333	PP 6CS, 12AU7, similar triodes to fixed bias 6L6's	30,000 P to P	5,000 overall 4:1 ratio overall	RC-87
CG-433	PP 45, 2A3, similar tubes to fixed bias 2 or 4 6L6's	5,000 P to P	1,250 overall 5:1 ratio overall	RC-100
CG-137	Mixing	50, 200, 500	50, 200, 500	RC-50
CG-140	Triode plate to line	15,000	50, 200, 500	RC-50
CG-141	PP triode plates to line	30,000 P to P	50, 200, 500	RC-50

## COMMERCIAL GRADE CASE

Case No.	Base Dim. (Sq.)	Mounting Dim. (Sq.)	Height	Cutout Dia.	Unit Weight (Lbs.)
RC-50	1 $\frac{1}{2}$ "	1-5/16"	2 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	$\frac{1}{2}$
RC-62	1-13/16"	1 $\frac{1}{2}$ "	2 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	$\frac{3}{4}$
RC-75	2-3/16"	1-13/16"	2 $\frac{3}{4}$ "	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$
RC-87	2-9/16"	2-3/32"	3 $\frac{1}{4}$ "	2"	2
RC-100	3"	2 $\frac{3}{4}$ "	3 $\frac{3}{4}$ "	2"	3
RC-112	3-7/16"	2-11/16"	4 $\frac{1}{4}$ "	3"	4 $\frac{1}{2}$
RC-125	3 $\frac{3}{4}$ "	3"	4 $\frac{1}{2}$ "	3"	5 $\frac{1}{2}$
RC-150	4 $\frac{1}{2}$ "	3-9/16"	5 $\frac{1}{2}$ "	4"	10
RC-152	5 $\frac{1}{4}$ "	4 $\frac{1}{4}$ "	5 $\frac{1}{2}$ "	4"	15
RC-175	5 $\frac{3}{4}$ "	4 $\frac{3}{4}$ "	7 $\frac{1}{4}$ "	4"	20

## OUTPUT TRANSFORMERS

Secondary Impedances: 500, 200, 16, 8, 5, 3, 1.5 ohms

Type No.	Imped. P.P. Ohms, Overall	Typical Tubes	Max. Watts	Case No.
CG-15	8,000	45, 6F6 triode, 6V6	20	RC-100
CG-16	3,000/5,000	2A3, 6A3, 6B4, 6AS7G, 6L6	20	RC-100
CG-19	6,000/10,000	6N7, 6F6, 6V6	20	RC-100
CG-710	14,000/20,000	6K6, 7B5	20	RC-100
CG-2L6	9,000	6L6's, AB1	30	RC-125
CG-4L6	3,800/4,500	2-6L6's, AB2 or 4-6L6's AB1	55	RC-150

## CG VARIMATCH OUTPUTS FOR P. A.

Universal units designed to match any tubes within the rated output power, to line or voice coil. Output impedance 500, 200, 50, 16, 8, 5, 3, 1.5 ohms. Primary impedance 3000, 5000, 6000, 7000, 8000, 10,000, 10,000, 14,000 ohms.

Type No.	Audio Watts	Typical Tubes	Case No.
CVP-1	12	45, 2A3, 6F6, 25L6, 6V6, 6B4	RC-100
CVP-2	30	45, 2A3, 6L6, 6V6	RC-125
CVP-3	60	50's, 300A's, 6L6's, 801, 807, 1614	RC-150
CVP-4	125	800's, 801's, 807's, 4-6L6's, 845's, 4-1614's	RC-152
CVP-5	300	211, 242A's, 203A's, 838's, 4-845's, 2B-120's	RC-175

## CG VARIMATCH LINE TO VOICE COIL TRANSFORMERS

The UTC VARIMATCH line to voice coil transformers will match any voice coil or group of voice coils to a 500 ohm line. More than 50 voice coil combinations can be obtained, as follows:

2, 4, 5, .62, 1, 1.25, 1.5, 2, 2.5, 3, 3.3, 3.8, 4, 4.5, 5, 5.5, 6, 6.25, 6.6, 7, 7.5, 8, 9, 10, 11, 12, 14, 15, 16, 18, 20, 25, 28, 30, 31, 40, 47, 50, 63, 69, 75.

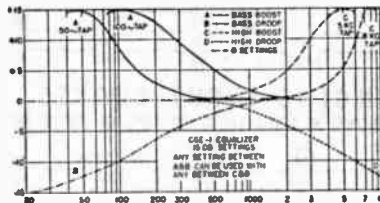
Where speakers are to be connected in groups to one transformer, it is preferable that parallel connection be used to eliminate the possibility of multiple resonance. If two speakers of different impedances are connected in parallel, the lower impedance speaker will develop greater power. If connected in series, the higher impedance speaker will develop greater power.

Type No.	Audio Watts	Primary Impedance	Secondary Impedance	Case No.
CVL-1	15	500 ohms	.2 to 75 ohms	RC-87
CVL-2	40	500 ohms	.2 to 75 ohms	RC-125
CVL-3	75	500 ohms	.2 to 75 ohms	RC-150

## CG VARIMATCH LINE AUTOFORMERS

UTC Varimatch Line Autoformer will match one to ten 500 ohm lines or CVL windings to the 500 ohm output of an audio amplifier. The CVL-10 to 12 autoformers have impedances of 500, 250, 167, 125, 100, 83, 71, 62, 50 ohms.

Type No.	Audio Watts	Case No.
CVL-10	15	RC-87
CVL-11	40	RC-125
CVL-12	60	RC-150



## UNIVERSAL INTERSTAGE EQUALIZER

This new UTC unit is the ideal device for any application requiring frequency response correction. Designed to be connected between two triode audio stages or will match a high impedance (5000 to 30000 ohms) source to grid.

The CGE-1 equalizer is not a simple R-C tone control, but employs resonant circuits to permit low or high end equalization without affecting mid-frequencies. With controls in center, no equalization is effected. Moving one control to left increases bass; to right, drops bass. Moving other control to left increases highs; to right drops highs. Controls are independent so that bass may be raised and highs dropped simultaneously, etc. Amount of equalization is continuously adjustable, up to 15 DB. The insertion loss effected is equal to the combined low frequency and high frequency settings plus 6 DB, or a maximum of 36 DB. Unless existent gain of equipment to which CGE-1 is added is high, an additional audio stage may be required. This unit comes complete so that controls with etched panel (calibrated in DB) can be mounted on a chassis (2 $\frac{1}{2}$  inch minimum) or a panel with case containing the electrical elements held by etched panel screws.

## DYNAMIC NOISE SUPPRESSION INDUCTOR

Incorporates two accurate High Q coils (.8 hy. and 2.4 hy.) for use in dynamic noise suppression circuits. Excellent circuit accompanies unit.

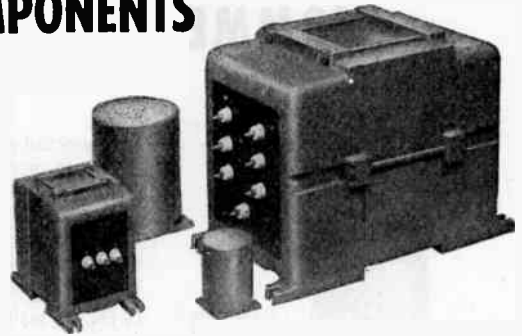
Type CG-50 RC-75 Case





# COMMERCIAL GRADE COMPONENTS

UTC CG power transformers, Varimatch units and chokes are designed to A.I.E.E. commercial standards. Ratings are conservative for continuous duty. Designs provide temperature rise less than 55 degrees C. Units are tested for breakdown at twice maximum working voltage plus 1000 volts. Plate transformers are given a surge test of 250% normal voltage at 200 cycles. All items are vacuum impregnated and sealed with special insulating compound. The conservative design and manufacturing procedure of these units make them suitable for virtually all types of commercial equipment as well as ideally suited for quality amateur and public address service.



## CG VARIMATCH MODULATION UNITS

Will match any modulator tubes to any RF load. The ever increasing number of vacuum tubes available for audio and RF applications has increased the difficulty of obtaining transformers suitable for matching to the various correct tube loads. If a standard transformer having a limited impedance range is purchased and used for a specific purpose as the "nearest thing" available, comparatively high distortion is inevitable. While a 20% mismatch caused by such an occurrence does not represent a serious loss in power, it greatly reduces the undistorted power available from a class B modulator because optimum plate load is not reflected to the tubes. The UTC Varimatch transformer eliminates this difficulty through the use of a combination of tapped windings affording an extremely wide range in impedance matching. Designs provide that for any load impedance employed, full class C plate current can be carried by secondary winding.

Primary impedances from 500 to 20,000 ohms  
Secondary impedances from 30,000 to 300 ohms

Type No.	Max. Audio Watts	Max. Class C Input	Typical Modulator Tubes	Case No.
CVM-0	12	25	2A3, 6B5	RC-100
CVM-1	30	60	6V6, 2A3, 6L6, 210	RC-125
CVM-2	60	125	801, 6L6, 809, 4-46, T-20, 1608	RC-150
CVM-3	125	250	800, 807, 845, T2-20, RK-30, 35-T	RC-152
CVM-4	300	600	50-T, 203A, 805, 838, T-55, ZB-120	RC-175
CVM-5	600	1200	805, HF-300, 204A, HK-354, 250TH	7x12x9H 60 lbs.

## CG VARIMATCH DRIVER TRANSFORMERS

Type No.	Primary	Typical Output Tubes	Case No.
CG-51AX	All single tubes like: 6C5, 6C4, 12AU7, 45, 2A3	2A3, 45, 6L6	RC-87
CG-53AX	P. P. tube like: 45, 2A3, 6L6, 6B4	46, 4-46, 841, 210, 801, RK-18, 800, 203A, 838, 805, 50T, 830B	RC-112
CG-59AX	50, 200, 500 ohm line	805, 838, 203A, ZB-120, 100TH, 800, 55T, RK-18	RC-112
CG-238AX	4-2A3, 4-45, 4-50, 2-211A, 2-845	4-805's, 4-838's, 4-203A's, 2-204's, 2-849's, 2-HF300's, 2-HF200's, 2-250TH's, 2-450TH's	RC-150
CG-512	50, 200, 500 ohm line	2-250TH, 2-450TH, 2-HF200, 2-HF300, 2-204A, 2-849	RC-150

## VARIPOWER AUTO-FORMERS

Type No.	Watts Output	Case No.	Designed for line voltage control, filament control and reduced power operation. Output voltage from 0 to 130 volts, 50/60 cycles. Varipower units permit control of filament voltage at the tube socket to within 2 1/2% of desired value simultaneously with line voltage control and plate voltage control. Can be used to reduce or increase voltages on filament transformers. Taps at 25, 55, 75, 95, 100, 105, 110, 115, 120, 125 and 130 volts permit output voltages from 0 to 130 volts in 5 volt steps.
CVA-1	150	RC-112	
CVA-2	250	RC-125	
CVA-3	500	RC-150	
CVA-4	1000	RC-152	
CVA-5	2000	RC-175	

## POWER AND BIAS TRANSFORMERS

Type No.	High Voltage	Primary 115 volts 50/60 cycles				Case No.
		DC MA.	Fil. 1	Fil. 2	Fil. 3	
CG-422	435-365-0-365-435 125-0-125	125	5V-3A	5V-2A	6.3 VCT-3A 2.5 VCT-5A	RC-150
CG-428	500-0-500 80-0-80	250 100	5V-3A	5V-2A	6.3 VCT-4A 6.3 VCT-3A, tapped 2.5 VCT-3A	RC-152
CG-429	600-525-0-525-600	250	5V-3A	6.3 VCT-3A	7.5 VCT-3A, tapped 6.3 VCT-4A	RC-152
CG-431	500-400-0-400-500 80-0-80	500 100	5V-6A	5V-2A	6.3 VCT-5A 6.3 VCT-3A	RC-175
CG-315	Tapped for any DC voltage from 15 to 100 volts within 6% -- 250 MA					RC-125
CG-316	Tapped for any DC voltage from 75 to 400 volts within 6% -- 250 MA					RC-152

## CG PLATE TRANSFORMERS

Primaries for 105, 115, 220, 230 volts, 50/60 cycles. For reduced power, secondary voltages can be reduced to half by using 220V. Pri. on 110 volts. These transformers may be used on 25 to 43 cycles if 220V. Pri. is used on 110 volts. Secondary voltage is simultaneously halved.

Type No.	High Voltage	DC Voltage	DC MA	Case No.
CG-300	625-515-0-515-625	500/400	200	RC-150
CG-301	580-530-300-0-300-530-580	475/425/250	420	RC-152
CG-302	950-750-0-750-950	760/610	360	RC-175
CG-303	1500-1235-400-0-400-1235-1500	1250/1000 300	260* 175	RC-175

\* 300MA, if used without load on low voltage winding.

## TYPE EC CASE UNITS

Type No.	High Voltage	DC Voltage	DC MA	L	W	H	Wt. Lbs.
CG-304	1500-1235-0-1235-1500	1250/1000	800	15	8 1/2	10 3/4	100
CG-305	2400-1750-0-1750-2400	2000/1500	300	10 1/2	4 3/4	6 3/4	50
CG-306	2400-1750-0-1750-2400	2000/1500	500	15	8 1/2	10 3/4	100
CG-307	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	300	14 1/2	8 1/2	10 3/4	90
CG-308	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	500	16 1/2	8 1/2	10 3/4	125
CG-309	3500-3000-2400-0-2400-3000-3500	3000/2500 2000	1000	21	10	13 1/4	185
CG-310	4600-4050-3500-0-3500-4050-4600	4000/3500 3000	600	19	10	13 1/4	150
CG-311	1500-1235-0-1235-1500	1250/1000	500	10 1/2	4 3/4	6 3/4	50
CG-312	1800-1500-0-1500-1800	1500/1250	400	10 1/2	4 3/4	6 3/4	50

## FILTER CHOKES

INDUCTANCE SHOWN IS AT RATED DC MA

Type No.	Inductance Henrys	DC MA	DC Res. Ohms	Test Volts	Case No.
CG-40	10	200	110	1750	RC-112
CG-41	4-20	200	110	1750	RC-112
CG-44	30	100	400	1750	RC-100
CG-45	250	15	5000	1750	RC-87
CG-49C	75	50	2500	1750	RC-87
CG-100	12	150	120	2500	RC-125
CG-102	12	250	105	3000	RC-150
CG-104	10	350	90	5000	RC-152
CG-108	10	500	55	7000	RC-175
CG-15	10	1000	45	9000	1 1/2 x 4 3/4 x 6 7/8 H, 60 lb.

## SWINGING INPUT CHOKES

INDUCTANCE SHOWN IS FROM 100% TO 10% OF RATED DC MA

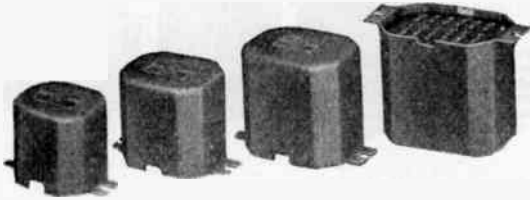
Type No.	Inductance Henrys	DC MA	DC Res. Ohms	Test Volts	Case No.
CG-101	5-25	150	120	2500	RC-125
CG-103	5-25	250	105	3000	RC-150
CG-105	5-25	350	90	5000	RC-152
CG-109	5-25	500	55	7000	RC-175
CG-1C	5-25	1000	45	9000	1 1/2 x 4 3/4 x 6 7/8 H, 60 lb.

## FILAMENT TRANSFORMERS

Primary for 105, 115, 220, 230 volts, 50/60 cycles. These transformers may be used on 25 to 43 cycles if 220 volt primary is used on 110 volts. Secondary voltage is simultaneously reduced to half. \* Two Windings.

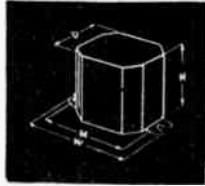
Type No.	Sec. Volts C. T.	Sec. Amps.	Working Voltage	Test Voltage	Case No.
CG-33	6.3	4	500	2000	RC-75
CG-34	2 1/2	10	2500	6000	RC-112
CG-120	2 1/2	10	5000	11000	RC-125
CG-121	5	25	5000	11000	RC-150
CG-122	7.5/6.3	10	1500	4000	RC-125
CG-124	10	10	1500	4000	RC-150
CG-125	14/12/11	10	1500	4000	RC-150
CG-126	14/11/10 14/11/10	10	1500	4000	RC-152

# SPECIAL SERIES AUDIO TRANSFORMERS



CASE SIZES

Type No.	H	W	D	M	Wt. Lbs.
G-1	1 7/8	2-13/16	1 3/4	2 3/8	1
G-2	2-5/16	3 3/8	1-15/16	2 3/8	1 1/2
G-3	2 1/2	3 3/4	2-5/32	3 1/4	2
G-4	2-15/16	4 1/8	2-5/16	3 3/8	3



## CLASS A INPUT TRANSFORMERS

Type No.	Application	Ratio	Case
S-1	1 plate* to 1 grid	3 1/2:1	G-2
S-2	1 plate* to 2 grids	2:1 4:1	G-2
S-3	1 plate* to 1 or 2 grids compact type	2:1	G-1
S-4	1 plate* to 2 grids wide range response	1:1	G-3
S-5	Single or double button mike or line to 1 grid hum-bucking type	16:1	G-2
S-6	Single or double button mike or line to 1 grid, compact type	16:1	G-1
S-7	Single plate* and carbon mike to one or two grids	3:1 16:1	G-2

\* Will match tubes like 6J5, 6C4, 12AU7, etc. Can be used with high mu triodes with loss in low frequencies.

## UNIVERSAL DRIVER TRANSFORMERS

(See Modulator chart for tube types)

Type No.	Application	Case
S-8	Single driver plate to pushpull grids	G-3
S-9	Pushpull driver plates to grids of class B tubes up to 400 watts output	G-4
S-10	Pushpull 56, 6C6 triode, 6C5, or similar plates to 45's, 2A3's or 6L6's, self or fixed bias	G-3

## MATCHING TRANSFORMERS

Type No.	Application	Pri. Ohms	Sec. Ohms	Case
S-11	Single 6J5, 6C4, 12AU7 or similar tube to line	15,000	200/500	G-2
S-12	Line to speaker 15 watts	500, 2000, 4000	2, 4, 8, 15	G-2
S-13	Line to speaker 30 watts	500, 2000, 4000	2, 4, 8, 15	G-4

## UNIVERSAL OUTPUT TRANSFORMERS TO LINE AND VOICE COIL

(Secondary impedances: 500, 15, 8, 2 ohms)

Type No. Max. Watts	Primary Impedance	Typical-Tubes	Class	Case
<b>Single Tubes:</b>				
S-14 10 W.	2500 ohms	2A3, 6A3, 6A5, 6B4, 6L6, 6Y6, 25L6, 35L6	A	G-2
	4000 ohms	45, 6V6, 12A6	A	
	7000 ohms	42, 47, 2A5, 6AC5, 6F6, 6K6, 6N6, 7B5	A	
	10,000 ohms	37, 38, 41, 1G5, 3C5, 6A4, 6N7	A	
<b>P. P. Tubes:</b>				
S-15 12 W.	4000 ohms	6Y6, 25L6	AB	
	5000 ohms	45, 2A3, 6A3, 6A5, 6B4, 6AS7	AB	
	10,000 ohms	1H4, 6AC5G, 6B5, 19, 6A6, 6N6, 6N7, 6Y7	AB B	
S-16 30-W.	3000 ohms	45, 2A3, 6A3, 6A5, 6B4, 25L6	AB	G-4
	6000 ohms	2A5, 6F6 triodes, 6AS7, 46, 6A6, 6N7	AB B	
	9000/10000 ohms	45, 2A5, 6AC5, 6B5, 6F6, 6L6, 6V6, 807-trio <sup>ds</sup>	AB	
S-17 55 W.	3800 ohms	6L6's	A32	G-5
	4500/5000 ohms	4-8L6's 46, 1608, 809	AB1 B	

## UNIVERSAL MODULATION TRANSFORMERS

Secondary carries class C current  
Any modulator tubes to any RF load. (See chart)

Type No.	Audio Power	Case
S-18	12 watts	G-3
S-19	30 watts	G-4
S-20	55 watts	G-5
S-21	110 watts	G-7
S-22	250 watts	G-9

UTC Special Series transformers are specifically designed for amateur and popular-priced PA service. The Special units are finished in a rich, commercial type medium gray enamel. A recessed terminal strip is provided permitting above chassis or breadboard wiring in addition to standard chassis type wiring. The universal windings provided on driver, matching and output transformers assure a maximum of flexibility. Modulator output units will carry the DC current of the class C stage for any of the impedances available and will match practically any audio tubes to any RF load within the power rating of the transformer. Large components are housed in formed cases with top or bottom mounting. All units are vacuum impregnated—compound filled.

## TYPICAL MODULATOR COMBINATIONS

S-18-12 WATTS MAX.

DRIVER TUBES: In the combinations shown below, typical suitable driver tubes are: 6C5, 6E6, 6N7, 6J5, 6C4, 12AU7, 6P5, 6J7-TR, 6S17-TR.

DRIVER Transf.	Sec. Term.	P.P. Tubes	Watts Output	MODULATOR STAGE P.P. Load	Plate Volts	Bias Volts
S-2	G-G	6E6	1.6	14,000	250	27
S-8	G-G	19, 1J6G	2.1	10,000	135	0
S-8	G-G	49	3.5	12,000	180	0
S-2	G-G	25L6	4	4,000	110	7.5
S-8	G'-G'	6Z7G	4.2	12,000	180	0
S-2	G-G	6Y6G	7	4,000	135	13.5
S-8	G-G	6Y7G	8	14,000	250	0
S-8	G'-G'	6AC5G	8	10,000	250	0
S-8	G'-G'	6A6, 6N6, 6N7	10	10,000	300	0
S-2	G-G	2A3, 6A3, 6A5G, 6B4G	10	5,000	325	750 ohms
S-8	G-G	45	10	5,000	275	770 ohms
S-2	G-G	6AS7G	10	5,000	250	1,250 ohms

### SINGLE TUBES

S-1	F-G	Pri. Load
		43, 45, 71A, 25A6, 25A7
		46, 6V6
		42, 46, 47, 49, 2A5, 6F6, 6B5
		10, 41, 32, 6G6, 6K6
		38, 12A7
		4,000 ohms
		6,000 ohms
		7,000 ohms
		10,000 ohms
		14,000 ohms

## S-19-30 WATTS MAX.

(6J5, 6C4, 12AU7, etc. may be substituted for 6C5 tubes)

Tube or Tubes	DRIVER Transf.	Sec. Terms.	MODULATOR STAGE P.P. Tubes	Watts Output	P.P. Load	Plate Volts	Bias Volts
6C5	S-10	G-G	6V6	13	8,000	300	20
6C5	S-10	G-G	2A3, 6A3, 45, 6A5G, 6B4G	15	3,000	325	68
6C5	S-10	G-G	2A5, 6F6 Pentode AB	10	10,000	375	340 ohms
2A5	S-8	G-G	2A5, 6F6, triode AB	18	6,000	350	38
89	S-8	G'-G'	6A6, 6N6, 6N7	19	5,000	300	0
45	S-8	G-G	10, 1602	25	8,000	425	50
45	S-8	G'-G'	46	25	6,000	425	0
45	S-8	G'-G'	841	28	7,000	425	5
6C5	S-10	G-G	6L6 self bias	30	9,000	400	23

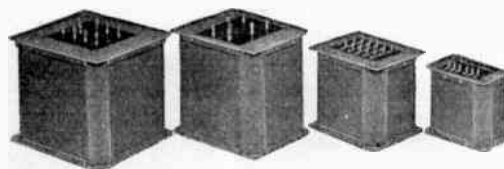
## S-20-55 WATTS MAX.

P.P. Tubes	DRIVER Transf.	Sec. Terms.	P.P. Tubes	Watts O'p't	MODULATOR STAGE P.P. Load	Plate Volts	Plate Tr'sf.	Bias Volts	Bias Trsf.
2A3	S-9	1-1	801	45	10000	600	S-45	75	S-51
2A3	S-9	3-3	1608	50	5000	425	S-44	15	S-51
2A3	S-9	1-1	T-20	50	8000	600	S-45	30	S-51
Single 45	S-8	G'-G'	4-46, 59	56	3000	425	S-44	0	
6C5	S-10	G-G	6L6, AB2	60	3800	400	S-39	25	S-51
6C5	S-10	G-G	4-6L6	60	4500	400	S-40	23	
2A3	S-8	3-3	809	60	5000	500	S-41	0	



# SPECIAL SERIES POWER EQUIPMENT

UTC Special Series power supply components are designed specifically for amateur and popular-priced PA service. The ratings are based on such applications and recommended for ICAS intermittent use. For commercial application, GG or LS grade components should be employed. Tapped coil structures on power, and bias supply transformers afford maximum flexibility, permitting a given transformer to be used with many circuits and types of tubes. Stand by service should not be obtained by interrupting high voltage center tap.



## S-21-115 WATTS MAX.

P.P.-2A3 Driver S-9 Transf. Sec. Term.	P.P. Tubes	Watts Output	MOODULATOR P.P. Lead	STAGE Plate Volts	Plate Transf.	Bias Volts	Bias Trsf.
2-2	TZ-20	70	12000	800	S-46	0	
1-1	T-20	70	12000	800	S-46	40	S-51
*	845	75	4600	1000	S-47	175	S-52
1-1	807	80	6600	600	S-45	30	S-51
1-1	800, RK-30	100	12000	1000	S-47	55	S-51
3-3	809	100	8400	750	S-45	5	S-51
2-2	825	100	6600	850	S-46	30	S-51
2-2	TZ-40	100	6000	750	S-45	0	
2-2	T-756	100	7000	850	S-46	30	S-51
1-1	50-T	100	8000	1000	S-47	90	S-51
2-2	RK-18	100	12000	1000	S-47	50	S-51
1-1	HK-354	100	15000	1000	S-47	60	S-51
*	845	105	8800	1250	S-47	225	S-52
3-3	RK-31	110	14000	1000	S-47	0	
1-1	4-6L6	110	2000	400	S-44	25	S-51
2-2	35-T	115	11000	1000	S-47	30	S-51

\* Reverse S-9 transformer using terminals 1-1 for plates and P.P. for grids.

## S-22-250 WATTS MAX.

P.P.-2A3 Driver S-9 Transf. Sec. Term.	P.P. Tubes	Watts Output	MOODULATOR P.P. Lead	STAGE Plate Volts	Plate Transf.	Bias Volts	Bias Trsf.
3-3	RK-31	140	17000	1250	S-47	0	
*	50 T	250	20000	2000	S-50	180	S-52
*	50 T	160	17000	1500	S-49	140	S-52
2-2	TZ-40	175	6800	1000	S-47	0	
1-1	T-55	175	6900	1000	S-47	40	S-51
1-1	T-55	225	9400	1250	S-47	50	S-51
2-2	HF-100	250	12000	1500	S-49	52	S-51
2-2	100 TH	250	7200	1250	S-47	0	
5	100 TL	230	7200	1250	S-47	112	S-52
2-2	ZB-120	150	4800	750	S-45	0	
2-2	ZB-120	245	9000	1250	S-47	0	
*	HK-154	225	11400	1250	S-47	210	S-52
1-1	203 A	250	9000	1250	S-47	45	S-51
3-3	203 Z	200	6900	1000	S-47	0	
1-1	211	200	6900	1000	S-47	77	S-51
1-1	211	250	9000	1250	S-47	100	S-51
1-1	HK-354	220	15000	1500	S-49	100	S-51
2-2	808	190	12700	1250	S-47	15	S-51
2-2	830 B	175	7600	1000	S-47	35	S-51
2-2	838	250	9000	1250	S-47	0	

\* Reverse S-9, using 2-2 for plates and P-P for grids.  
 † Reverse S-9, using 1-1 for plates and P-P for grids.

## FILAMENT TRANSFORMERS

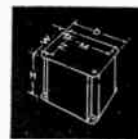
Primary Tapped 105, 115 Volts—50/60 Cycles

Type No.	Secondary Volts	Secondary Current	Insulation	Case No.
S-53	2.5 VCT	10 A.	1500 V.	G-3
S-54	5 VCT	4 A.	2500 V.	G-3
S-55	6.3 VCT	3 A.	1500 V.	G-3
S-56	7.5 VCT	3 A.	1500 V.	G-3
S-57	2.5 VCT	10 A.	10,000 V.	G-5
S-58	2.5 VCT	20 A.	10,000 V.	G-5
S-59	5 to 5.25 VCT	13 A.	5000 V.	G-5
S-60	5 to 5.25 VCT	22 A.	10,000 V.	G-7
S-61	7.5 VCT tapped 6.3 VCT	10 A.	3000 V.	G-5
S-62	10 VCT	10 A.	3000 V.	G-5
S-63	14 VCT tapped 12 VCT and 11 VCT	10 A.	5000 V.	G-7

Type No.	Fil. 1	Fil. 2	Fil. 3	Insulation	Case No.
S-64	2.5 VCT-5A	2.5 VCT-5A	5 VCT-6A	3000 V.	G-5
S-65	2.5 VCT-5A	5 VCT-4A	6.3 VCT-3A	3000 V.	G-5
S-66	2.5 VCT-10A	7.5 VCT-6.5A		3000 V.	G-5
S-67	5 VCT-6A	6.3 VCT-5A		3000 V.	G-5
S-68	5 VCT-3A	6.3 VCT-4A	7.5 VCT-5A	3000 V.	G-5
S-69	6.3 VCT-3A	7.5 VCT-6.5A		3000 V.	G-5
S-70	6.3 VCT-5A	6.3 VCT-5A		3000 V.	G-5
S-71	2.5 VCT-6A	2.5 VCT-6A	2.5 VCT-12A	10000 V.	G-7
S-72	5 VCT-3A	5 VCT-3A	5 VCT-6A	5000 V.	G-5

## CASE SIZES

Type No.	H	W	D	M	H	Wt. Lbs.
G-5	3 3/4	3 1/2	4 1/2	3 3/4	2-7/16	4 1/2
G-7	4 1/4	4 1/4	5 1/2	4-27/32	3-25/32	8
G-8	4 1/4	5 1/4	5 1/4	4-25/32	4 3/4	12
G-9	5 1/4	5 1/4	6 1/4	6-3/32	4-19/32	21
G-10	5 1/4	6 1/4	6 1/4	5-15/16	5-13/32	24
G-11	5 1/4	6 1/4	7 1/4	6-21/32	5-29/32	31
G-12	10 1/4	7 1/4	9 1/4	8 1/2	6 3/4	52



## COMBINED PLATE AND FILAMENT UNITS

Primary 115 V.—50/60 Cycles

Type No.	Voltage	O.C. Voltages*	Rectifier Fil.	Fil. No. 1	Fil. No. 2	Case No.
G-39	490-400-0-400-490 175 Ma.	400/310	5 V.-3A	2.5 V.C.T.-6A	6.3 V.C.T. 4A	G-7
G-40	525-425-0-425-525 250 Ma.	400/310	5 V.-3A	6.3 V.C.T.-3A	6.3 V.C.T. 3A	G-7
G-41	600-0-600 200 Ma.	475	5 V.-3A	7.5 V. tapped 6.3 V.-3A	6.3 V.C.T. 2A	G-7
G-42	600-525-0-525-600 300 Ma.	480/400	5 V.-6A	7.5 V. tapped 6.3 V.-3A	6.3 V.C.T. 3A	G-8
G-43	525-0-525 450 Ma. 40-0-40, 200 Ma.	400	5 V.-3A 5 V.-6A	6.3 V.-3A -2A	6.3 V.C.T. 5A	G-9

\* Based on two section filter, choke input.

## PLATE TRANSFORMERS — BIAS TRANSFORMERS

Primary 115 V.—50/60 Cycles

Type No.	High Voltage	DC Voltages*	DC Current	Case No.
S-44	575-525-0-525-575	470/430	500 Ma.	G-9
S-45	900-750-0-750-900	750/620	200 Ma.	G-8
S-46	1000-750-0-750-1000	825/600	300 Ma.	G-9
S-74	1175-500-0-500-1175 Oxplex rectifier	1000 400	±150 Ma. ±150 Ma.	G-10
S-47	1500-1250-1000-0-1000-1250-1500	1275/1050/825	300 Ma.	G-10
S-48	1500-1250-1000-0-1000-1250-1500	1300/1075/850	500 Ma.	G-11
S-49	2100-1800-1500-0-1500-1800-2100	1815/1540/1275	300 Ma.	G-11
S-50	3000-2500-0-2500-3000	2625/2175	300 Ma.	G-12
S-51	Will supply any bias voltage from 15 to 100 volts DC within approximately 6% of desired value.			200 Ma. G-5
S-52	Will supply any bias voltage from 75 to 400 volts DC within approximately 6% of desired value.			200 Ma. G-7

\* Based on two section filter for 200 Ma. and 300 Ma. units, single section filter for 500 Ma. units, both choke input.

† 200 Ma. if used alone      ‡ 300 Ma. if used alone

## FILTER, SWINGING, AND AUDIO CHOKES

Type No.	Service	Inductance	Current	Resistance	Insulation	Case No.
S-23	Audio	500 Hy.	5 Ma.	6000 ohms	1500 V.	G-2
S-24	P.P. Choke	500 Hy. C.T.	3 Ma.	400 ohms	1500 V.	G-2
S-25	Filter	30 Hy.	30 Ma.	900 ohms	1500 V.	G-2
S-26	Filter	15 Hy.	60 Ma.	230 ohms	1500 V.	G-2
S-27	Filter	30 Hy.	75 Ma.	350 ohms	1500 V.	G-4
S-28	Filter	20 Hy.	100 Ma.	350 ohms	1500 V.	G-4
S-29	Filter	10 Hy.	175 Ma.	95 ohms	1500 V.	G-4
S-30	Swinging	5/25 Hv.	175 Ma.	95 ohms	1500 V.	G-4
S-31	Filter	20 Hy.	225 Ma.	120 ohms	2700 V.	G-5
S-32	Swinging	5/25 Hv.	225 Ma.	120 ohms	2700 V.	G-5
S-33	Filter	20 Hy.	300 Ma.	90 ohms	4000 V.	G-5
S-34	Swinging	5/25 Hv.	300 Ma.	90 ohms	4000 V.	G-7
S-35	Filter	20 Hy.	400 Ma.	85 ohms	5000 V.	G-8
S-36	Swinging	5/25 Hv.	400 Ma.	85 ohms	5000 V.	G-8
S-37	Filter	20 Hy.	550 Ma.	60 ohms	6000 V.	G-8
S-38	Swinging	5/25 Hv.	550 Ma.	60 ohms	6000 V.	G-8

# REPLACEMENT TYPE COMPONENTS

(PREVIOUS POWER TRANSFORMERS TYPE R-1 THRU R-13 AND R-54 WILL BE AVAILABLE UNTIL 1951)



## DOUBLE SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rect. Fil.	Amp. Fil.	W	D	H	M	N	Wt. Lb.
R-101	275-0-275	50	5V-2A.	6.3V CT-2.7A	3	2½	2¾	2½	2-1/16	2½
R-102	350-0-350	70	5V-3A.	6.3V CT-3A.	3	2½	3¾	2½	2-1/16	3½
R-103	350-0-350	90	5V-3A.	6.3V CT-3.5A.	3½	2¾	3¾	2-13/16	2¾	4½
R-104	350-0-350	120	5V-3A.	6.3V CT-5A.	3¾	3½	3¾	3½	2½	5½
R-105	385-0-385	160	5V-3A.	6.3V CT-5A.	3¾	3½	3¾	3½	2½	7

The UTC replacement type transformers represent the culmination of years of development in this field. All units are vacuum sealed against humidity with special impregnating materials to prevent corrosion and electrolysis. Shells and brackets are finished in attractive high lustre black enamel.

The UTC shells and universal brackets employed make possible a latitude in mounting dimensions never approached heretofore. A minimum number of transformers have been developed to cover any requirement in the replacement field. Pri. 117V. 50/60 cycles.

## SINGLE SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rect. Fil.	Amp. Fil.	W	D	H	M	N	Wt. Lb.
R-106	300-0-300	50	5V-2A.	6.3V CT-2.7A	3	2½	3	2½	2-1/16	2½
R-107	350-0-350	70	5V-3A.	6.3V CT-3A.	3	2½	3¾	2½	2-1/16	3½
R-108	350-0-350	120	5V-3A.	6.3V CT-5A.	3¾	3½	3¾	3½	2½	5½
R-109	400-0-400	200	5V-3A.	6.3V CT-6A.	4½	3¾	4	3¾	3	8

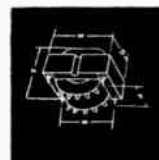


### DOUBLE SHELL TYPE

The universal feet may be used for upright or horizontal mounting, or eliminated for flush mounting.

## VERTICAL SHELL POWER TRANSFORMERS

Type No.	High V.	DC MA.	Rect. Fil.	Amp. Fil.	W	D	H	M	N	Wt. Lb.
R-110	300-0-300	50	5V-2A.	6.3V CT-2.7A	2½	2½	3¾	2	1¾	2½
R-111	350-0-350	70	5V-3A.	6.3V CT-3A.	2½	3¾	3¾	2	2¾	3½
R-112	350-0-350	120	5V-3A.	6.3V CT-5A.	3¾	3¾	4	2½	2½	5½
R-113	400-0-400	200	5V-3A.	6.3V CT-6A.	3¾	4¾	4¾	3	3¾	8



### SINGLE SHELL TYPE

UTC flush type transformers are husky units designed for low temperature rise and good regulation. The rugged solder terminals permit ease of circuit change for the experimenter.

## CHANNEL FRAME FILTER CHOKES

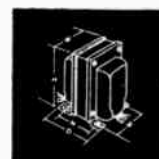
Inductance Shown is at Rated D.C.M.A.—Insulation Test: 1750 Volts

Type No.	Induct. Hys.	Current	Resistance Ohms	Dimensions, Inc.				Lbs.
				W	D	H	M	
R-55	6	40MA	300	2½	1¾	1¾	2	½
R-14	8	40MA	250	2¾	1¾	1-11/16	2¾	¾
R-15	12	30MA	450	2¾	1¾	1-11/16	2¾	¾
R-16	15	30MA	600	2¾	1¾	1-11/16	2¾	¾
R-17	20	40MA	850	3-5/16	1¾	2	2-13/16	1
R-18	8	80MA	250	3-5/16	1¾	2	2-13/16	1
R-19	14	100MA	450	3¾	1¾	2-5/16	3¾	1½
R-20	7	160MA	100	4¾	2	2¾	3-9/16	2½
R-21	4/20	160MA	100	4¾	2	2¾	3-9/16	2½
R-22	120	5MA	4000	3-5/16	1¾	2	2-13/16	1

## FILAMENT TRANSFORMERS

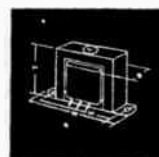
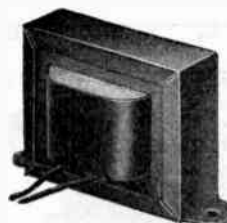
CHANNEL FRAME TYPE  
Pri. 115 V. 50/60 Cycles—1500 V. Breakdown

Type No.	Secondary	Dimensions, Inches				Wt. Lbs.
		W	D	H	M	
FT-1	2.5 V.C.T.-3A	2¾	1¾	1-11/16	2¾	¾
FT-2	6.3 V.C.T.-1.2A	2¾	1¾	1-11/16	2¾	¾
FT-3	2.5 V.C.T.-6A	3-5/16	1¾	2	2-13/16	1
FT-4	6.3 V.C.T.-2.5A	3-5/16	1¾	2	2-13/16	1
FT-5	2.5 V.C.T.-10A	3¾	1¾	2-5/16	3¾	1½
FT-6	5 V.C.T.-3A	3¾	1¾	2-5/16	3¾	1½
FT-7	7.5 V.C.T.-3A	3¾	1¾	2-5/16	3¾	1½
FT-8	6.3 V.C.T.-6A	4¾	2¾	2¾	3-9/16	2½
FT-8	2.5V CT-10A. 10000V. Test	4¾	2¾	2¾	3-9/16	2½
FT-10	24V CT-2A. or 12V-4A.	4¾	2¾	2¾	3-9/16	2½



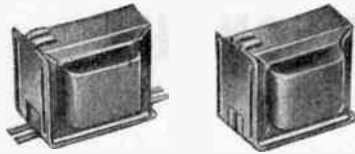
### VERTICAL SHELL TYPE

UTC vertical power transformers are unusually attractive in appearance, having smooth drawn cases finished in high lustre black enamel.

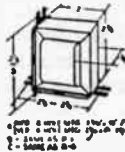


### CHANNEL FRAME TYPE

Channel frame chokes and audios are conservatively designed. Standard black enamel mounting channels are employed. Coils are tropic-sealed by vacuum-pressure method.



Varitap Duplicate audio units are extremely attractive, the double shells and universal mounting brackets being finished in high lustrous black enamel. The figure A units use the UTC universal bracket. This bracket makes possible four hole horizontal or vertical mounting and two hole, channel type, horizontal or vertical mounting. The coils of these units, in addition to efficient design and mechanical shielding, are vacuum impregnated and sealed with a special compound to assure complete protection against adverse climatic conditions.



## SHIELDED UNIVERSAL MOUNTING AUDIO TRANSFORMERS AND FILTER CHOKES

Type No.	Application	Description	Fig.	Wt. Lbs.
R-23	1 plate* to 1 grid	3½:1 ratio	A	1
R-24	1 plate* to 2 grids	2:1 ratio	A	1
R-25	2 plates* to 2 grids	1.5:1 stepup for class A triodes, 1.5:1 stepdown for 6L6's, 2A3's, 2A5's, etc.	A	1½
R-26	Driver, 1 plate to 2 grids	Single 42, 2A5, 6F6, 45, 46	A	1½
R-27	15 watt Universal Output	All tubes up to 15 watts to any voice coil from .1 to 30 ohms	A	1½
R-28	35 watt Universal Output	All tubes up to 35 watts to any voice coil from .1 to 30 ohms	B	2½
R-29	Mike to grid	Single or double button mike or line to 1 grid	A	1½
R-30	Filter choke	13 Hys-250 MA-100 ohms	C	7
R-31	Filter choke	10 Hys- 80 MA-250 ohms	A	2½
R-32	Filter choke	10 Hys-150 MA-100 ohms	B	2½

\* Will match tubes like 27, 37, 56, 6C6 triode, 6C5. Can be used with high mu triodes with loss in low frequencies.

## CHANNEL FRAME AUDIO TRANSFORMERS

Type No.	Application	Description	Dimen., ins.				Wt. Lbs.
			W	D	H	M	
R-33	1 plate* to 1 grid	4:1 ratio	2½	1¾	1-11/16	2¾	¾
R-34	1 plate* to 2 grids	2:1 ratio	2½	1¾	1-11/16	2¾	¾
R-35	Mike to 1 grid	17:1 ratio Pri. C.T.	2½	1¾	1-11/16	2¾	¾
R-80	Intercomm. speaker to grid	4 ohm to 40,000 ohm grid	2½	1¾	1¾	2¾	½
R-53	Plate & mike to grid	3:1 and 17:1 ratio	2½	1¾	1-11/16	2¾	¾
R-56	1 plate to 2 grids	2:1 ratio	3-5/16	1¾	2	2-13/16	1
R-57	1 plate to 2 grids	2½:1 ratio	4¼	2	2¾	3-9/16	2½
R-36	Driver	30, 49, etc. to class B 19, 49, 79, 89 grids	2½	1¾	1-11/16	2¾	¾
R-37	R.F. Output	Class B 19, 49, 79, 89 plates to 3500 and 5,000 ohms	2½	1¾	1-11/16	2¾	¾
R-58	5 watt Universal output	Any single tube to any voice coil, .1 to 30 ohms	2½	1¾	1¾	2¾	½
R-38A	6 watt Universal	Any tubes up to 6 watts to any voice coil, .1 to 30 ohms	2½	1¾	1¾	2¾	½
R-59	10 watt Universal	Any tubes up to 10 watts to any voice coil, .1 to 30 ohms	2½	1¾	1-11/16	2¾	¾
R-60	15 watt Universal	Any tubes up to 15 watts to any voice coil, .1 to 30 ohms	3-5/16	1¾	2	2-13/16	1
R-36	10 watt line Matching Transformer	250, 500, 1,500 ohms to 2, 8, 15 ohms	2½	1¾	1-11/16	2¾	¾
R-48	25 watt line Matching Transformer	250, 500, 1,500 ohms to 2, 8, 15 ohms	4¼	2¼	2¾	3-9/16	2½

\* Will match tubes like 27, 37, 56, 6C6 triodes, 6C5. Can be used with high mu triodes with loss in low frequencies.

## STEP DOWN AUTO-TRANSFORMERS

With 6 foot cord and female receptacle 220-240 to 110-120 Volts-50/60 Cycles

Type No.	Application	Wgt. Lbs.
R-41	85 watt capacity	4
R-42	125 watt capacity	5
R-43	175 watt capacity	5½
R-44	250 watt capacity	6½
R-45	500 watt capacity	12
R-46	1200 watt capacity	18
R-64	2500 watts, no cord	30

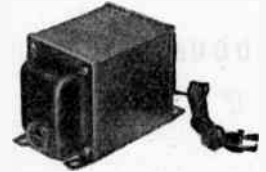


## ISOLATION TRANSFORMERS

Ideal for isolating line noise, AC-DC sets, etc. Excellent electrostatic shielding. 2000 volt breakdown test. Six foot cord and female receptacle.

Primary 110-120 volts, 50/60 cycles—Secondary 110-120 volts

Type No.	Rating	Wgt. Lbs.
R-72	40 watts	4
R-73	100 watts	6
R-74	250 watts	12
R-75	600 watts	20
R-76	1200 watts	30
R-77	2500 watts (no-cord)	70



## LINE VOLTAGE ADJUSTERS WITH METER

The perfect answer to abnormal or fluctuating line voltage. Adjust switch so that meter reads at red line and you know that your equipment is working at correct voltage.

These units combine a tapped auto-transformer with a switch and meter in a compact, rugged assembly. The nine tap switch provides for line voltages of 60 to 140 volts on 115 volt output models and 160 to 240 volts on 230 volt output models.

All units are designed for 50/60 cycle service and come complete with 6 foot input cord and plug and outlet receptacle.



Type No.	Primary Voltages	Sec. Volts	Watts	Wt. Lbs.
R-78	60, 70, 80, 90, 100, 110, 120, 130, 140	115	150	6
R-79	60, 70, 80, 90, 100, 110, 120, 130, 140	115	300	9
R-80	60, 70, 80, 90, 100, 110, 120, 130, 140	115	600	13
R-81	60, 70, 80, 90, 100, 110, 120, 130, 140	115	1200	21
R-83	160, 170, 180, 190, 200, 210, 220, 230, 240	230	150	6
R-84	160, 170, 180, 190, 200, 210, 220, 230, 240	230	300	9
R-85	160, 170, 180, 190, 200, 210, 220, 230, 240	230	600	13
R-86	160, 170, 180, 190, 200, 210, 220, 230, 240	230	1200	21

## EXPORT VOLTAGE ADAPTER

Complete with cord and plug and special locking switch providing for line voltages of 105, 115, 125, 135, 150, 210, 230, 250 volts; 42 to 60 cycles. Output voltage 115. Similar in appearance to above but without meter.

Type No.	Rating	Wgt. Lbs.
R-47	85 watts	4½
R-48	150 watts	5½

## PHOTO FLASH TRANSFORMERS

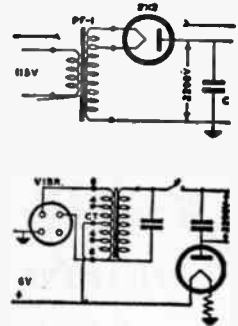
Can be used for either standard (Anglo type) or trigger (Sylvania type) multiple flash bulbs. Circuit details included with transformer.

PF-1 Primary for 115 volts, 50/60 cycles. Secondaries for power supply delivering 2200 volts DC to condenser up to 100 Mfd. Compound sealed in G-3 case 2½ x 2¼ x 2½ inches high. Weight 2 Lbs.

PF-2 For portable service. Primary tapped for 4 volt or 6 volt battery (full wave vibrator). Secondary for power supply delivering 2200 volts DC to condenser up to 60 Mfd. Compound sealed in G-3 case. Weight 2 Lbs.

PF-3 Trigger Transformer 15 KV peak. ¾ O.D. x 3" long. Weight 2 Oz.

PF-4 Dual Pri. for either 4V battery or 115V 50/60 cycles. Secondary for power supply delivering 900 volts DC to condenser up to 150 Mfd. G-3 case, 2 Lb.



## TELEVISION TRANSFORMERS

These components are quality designs, vacuum impregnated and fully compound sealed in heavy steel cases affording a high degree of shielding.

Type No.	Application	Case	Wt. Lbs.
R-81	Horizontal oscillator (15750 cycles)	RC-50	1
R-82	Vertical oscillator (60 cycles)	RC-50	1
R-83	Vertical output, tapped for different tubes	RC-100	4
R-84	Horizontal output (special core), tapped for adjustment	RC-100	4
R-95	2800 vac (4000V-2MA DC) 2.5V-1.8A., 6.3V-.6A tapped 2.5V-2.1A. 7000 V test	RC-125	5

Specify

**GRACOIL**

"One Good Turn or a Million"

Transformers

USE THIS EASY ORDERING INFORMATION TO SELECT

Transformers

FOR DEPENDABLE

**LINE VOLTAGE CONTROL**

STEP DOWN ★ ISOLATION ★ REGULATING

**STEP DOWN ISOLATION TRANSFORMERS**

Designed with completely isolated primary and secondary windings for continuous duty to reduce line voltage of 200-240 volts, 50/60 cycles, to 100-120 volts, 50/60 cycles. 6 foot input cord, plug and outlet receptacle. Made with electrostatic shields between primary and secondary.

PART NO.	MOUNTING	VA RATING	DIMENSIONS			WEIGHT LBS.	LIST PRICE
			WIDTH	DEPTH	HEIGHT		
100 K 10	A	50	3 1/4"	3"	3 3/8"	4	\$ 9.60
100 K 11	A	75	3 1/4"	3 3/8"	3 3/8"	5	10.50
100 K 12	A	100	3 1/4"	3 3/4"	3 3/8"	6	11.40
100 K 13	A	150	3 3/8"	3 3/8"	4 1/8"	7 1/4	13.50
100 K 14	A	250	3 3/8"	5 1/4"	4 3/8"	12	18.30

Note. Also available as Step Up Types at 10% INCREASE IN LIST PRICE.

**STEP DOWN AUTO TRANSFORMERS**

Designed for continuous duty to reduce line voltage of 200-240 volts, 50/60 cycles to 100-120 volts, 50/60 cycles. 6 foot input cord and plug and outlet receptacle.

PART NO.	MOUNTING	VA RATING	DIMENSIONS			WEIGHT LBS.	LIST PRICE
			WIDTH	DEPTH	HEIGHT		
100 K 1	A	75	2 7/8"	2 3/8"	3 3/8"	3 1/2	\$ 7.70
100 K 2	A	100	3 1/4"	2 7/8"	3 3/8"	3 3/4	8.90
100 K 3	A	150	3 1/4"	3 1/4"	3 3/8"	4 3/4	9.90
100 K 4	A	250	3 3/8"	3 3/8"	4 3/8"	7 1/2	12.60
100 K 5	A	500	4 7/8"	4 3/4"	5 3/8"	12 1/2	19.00
100 K 6	A	750	4 7/8"	5 1/4"	5 3/8"	16 1/2	24.50
100 K 7	C	1000	6 1/2"	5 1/4"	7"	20	38.00
100 K 8	C	1250	6 1/2"	5 3/4"	7"	25	42.25

NOTE: Also available as Step Up types at 10% increase in List Price.

**LINE REGULATING AUTO TRANSFORMERS**

Designed for continuous duty to correct abnormal or fluctuating line voltages. Input tapped at 80, 85, 90, 95, 100, 110 and 125 volts, 50/60 cycles, to provide an output of 115 volts, 50/60 cycle. Rotary input switch on all models and output volt meter on the 500 VA and larger sizes. 6 foot input cord and plug and outlet receptacle.

PART NO.	MOUNTING	VA RATING	DIMENSIONS			WEIGHT LBS.	LIST PRICE
			WIDTH	DEPTH	HEIGHT		
100 K 15	B	100	2 7/8"	2 3/4"	3 3/8"	3	\$12.50
100 K 16	B	200	2 7/8"	3 1/4"	3 3/8"	4	15.00
100 K 17	B	300	3 1/4"	3 1/2"	3 3/8"	5 1/2	17.50
100 K 18	D	500	6 1/2"	4 1/2"	7"	10	36.50
100 K 20	D	1000	6 1/2"	4 1/2"	7"	14	59.00
100 K 22	D	1500	6 1/2"	5 1/4"	7"	19	70.00

(Prices subject to change without notice)

Inquiries invited from Distributors and Dealers. Write

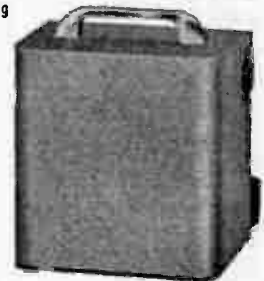
**THE GRAMER COMPANY** Electrical Coils and Transformers  
ESTABLISHED IN 1935

2730 N. PULASKI ROAD

CHICAGO 39, ILL., U.S.A.



"A" Mounting



"C" Mounting



"B" Mounting



"D" Mounting

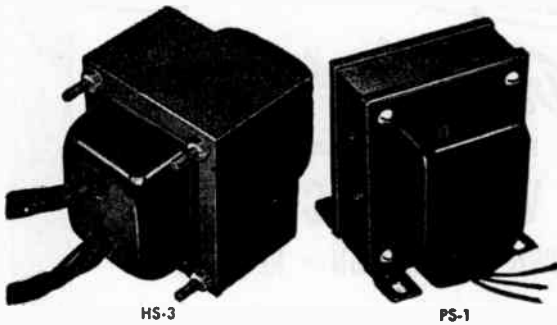


Universal Replacement

**POWER TRANSFORMERS  
TELEVISION TRANSFORMERS**

**FREED**

**TRANSFORMER CO., INC.**



This group of units provides replacement for the majority of existing radio receivers. The design of special mounting angles permits mounting in flush, vertical and horizontal positions. Leads are R.M.A. color-coded.

Freed No.	H.V. A.C. Volts	C.T. D.C. Ma.	Rect.		Fil. C.T.		Fil. C. T.		Mounting Type	Mounting Center		Dimensions			Ship. Wt.	List Price
			V.	A.	V.	A.	V.	A.		W	D	W	D	H		
F-410 A	480	40	5	2	6.8	2			PS-1	2	1 1/8	2 1/2	2 1/2	8 1/8	2 1/2	\$5.85
F-411 A	650	40	5	2	2.5	4			PS-1	2	1 1/2	2 1/2	2 1/2	8 1/8	2 1/2	5.85
F-412 A	590	50	5	2	6.8	2			PS-1	2	1 1/2	2 1/2	2 1/2	8 1/8	3	6.30
F-413 A	650	50	5/6.8	2/.6	6.8	2.5			PS-1	2	1 1/2	2 1/2	2 1/2	8 1/8	3	6.90
F-414 A	700	50	5	2	2.5	7.5			PS-1	2	1 1/2	2 1/2	2 1/2	8 1/8	3	7.30
F-415 A	700	70	5	2	2.5	9			PS-1	2 1/4	1 1/2	2 1/2	3 1/4	8 1/2	4	7.60
F-416 A	700	70	5/6.8	2/.6	6.8	2.5			PS-1	2 1/4	2	2 1/2	3 1/4	8 1/2	4 1/4	7.90
F-417 A	700	70	5	2	6.8	2.5			PS-1	2	2 1/8	2 1/2	3 1/4	8 1/8	4 1/4	7.55
F-418 A	700	90	5	2	2.5	12.5			PS-1	2 1/2	2 1/8	3 1/8	3 1/8	8 1/2	5 1/4	8.75
F-419 A	700	90	5	2	6.8	3.5			PS-1	2 1/2	2 1/2	3 1/8	3 1/8	8 1/2	5	8.30
F-420 A	700	120	5	3	2.5	3.5	2.5	12.5	PS-1	3	2 1/8	3 1/2	3 1/2	4 1/2	6 1/2	10.20
F-421 A	700	120	5	3	6.8	5			PS-1	2 1/2	2 1/8	3 1/8	3 1/8	8 1/2	5 1/4	9.10
F-422 A	750	150	5	3	6.8	5			PS-1	3	2 1/8	3 1/2	3 1/2	4 1/2	6 1/2	10.90
F-423 A	750	150	5	3	6.8	5	2.5	5	PS-1	3	2 1/8	3 1/2	3 1/2	4 1/2	7	12.00
F-424 A	800	200	5	4	6.8	5			PS-1	3	2 1/2	3 1/2	3 1/2	4 1/2	7 1/2	12.45
F-410	480	40	5	2	6.8	2			HS-3	2 1/2	2	3	2 1/2	2 1/2	3	4.50
F-411	650	40	5	2	2.5	4			HS-3	2 1/2	2	3	2 1/2	2 1/2	3	4.50
F-412	590	50	5	2	6.8	2			HS-3	2 1/2	2	3	2 1/2	2 1/2	3	4.55
F-413	650	50	5/6.8	2/.6	6.8	2.5			HS-3	2 1/2	2	3	2 1/2	2 1/2	3	5.10
F-414	700	50	5	2	2.5	7.5			HS-3	2 1/2	2	3	2 1/2	2 1/2	3	5.75
F-415	700	70	5	2	2.5	9			HS-3	2 1/2	2 1/4	3 1/4	2 1/2	3	4	6.00
F-416	700	70	5/6.8	2/.6	6.8	2.5			HS-3	2 1/2	2 1/4	3 1/4	2 1/2	3 1/4	4 1/4	6.35
F-417	700	70	5	2	6.8	2.5			HS-3	2 1/2	2	3	2	3 1/4	4 1/4	5.75
F-418	700	90	5	2	2.5	12.5			HS-3	3 1/4	2 1/2	3 1/4	3 1/4	3 1/2	5 1/4	7.05
F-419	700	90	5	2	6.8	3.5			HS-3	3 1/4	2 1/2	3 1/4	3 1/4	3 1/2	5 1/4	7.15
F-420	700	120	5	3	2.5	3.5	2.5	12.5	HS-3	3 3/4	3	4 1/2	3 3/4	3 1/2	6 1/2	8.70
F-421	700	120	5	3	6.8	5			HS-3	3 1/2	2 1/2	3 1/2	3 1/2	3 1/2	5 1/4	7.15
F-422	750	150	5	3	6.8	5			HS-3	3 3/4	3	4 1/2	3 3/4	3 1/2	6 1/2	9.40
F-423	750	150	5	3	6.8	5	2.5	5	HS-3	3 3/4	3	4 1/2	3 3/4	3 1/2	7	10.15
F-424	800	200	5	4	6.8	5			HS-3	3 3/4	3	4 1/2	3 3/4	3 1/2	7 1/2	10.90

The above transformers are designed for primary operation of 115 volts 50-60 cycles. They are also available for 220 volts 60 cycles and 115 volts 25 cycles.

**TELEVISION TRANSFORMERS**

Used in television receivers, oscilloscopes, test equipment and high voltage, low current power supplies.

Freed No.	HV AC Volts	DC MA.	Rect		Fil		Mtg. Type	Mtg. Center		Dimensions			Ship. Wt.	List Price
V	A	V	A	V	A	W		D	W	D	H			
F-950	1700	4	2.5	2			PS-1	2	1 1/2	2 1/2	3	3 1/8	3	\$10.25
F-951	2000	2	2.5	1.75	6.8	.9	PS-1	2 1/4	2 1/4	2 1/2	3 1/4	3 1/2	4 1/2	12.10
F-952	2500	2	2.5	1.75	6.8	.9	PS-1	2 1/4	2 1/4	2 1/2	3 1/4	3 1/2	4 1/2	13.35

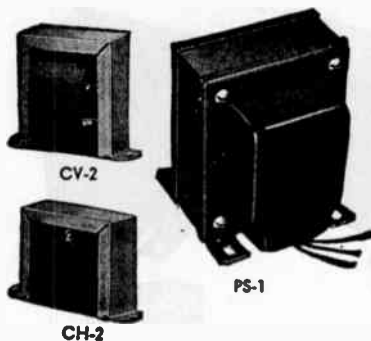
**TELEVISION TRANSFORMERS**

Used for a plate supply in television receivers (12 and 15 inch tube).

Freed No.	HV AC Volts	CT DC MA.	Rect		Fil		Mtg. Type	Mtg. Center		Dimensions			Ship. Wt.	List Price	
V	A	V	A	V	A	W		D	W	D	H				
F-960	775	225	5	3	6.8	1.75	6.8	10A	PS-1	3	3 1/2	3 1/2	4 1/2	11 1/2	\$14.80
F-961	800	300	5	3	6	6	12.6	10A (CT)	PS-1	3 1/2	4	4 1/2	5 1/2	15 1/2	30.75

**TELEVISION TRANSFORMERS**

Freed No.	Description	Mtg. Type	Mtg. Center W	Mtg. Center D	Dimensions W	Dimensions D	Dimensions H	Ship. Wt.	List Price
F-970	Horizontal Blocking Oscillator Transformer.....	CH-1	2		2 1/2	1 1/2	1 1/8	1/2	\$2.75
F-971	Vertical Blocking Oscillator Transformer.....	CH-1	2		2 1/2	1 1/2	1 1/8	1/2	2.50
F-972	Vertical Output Tr. for Magnetic Deflection CRT	FV-1	1 1/8	2	2 1/2	2 1/2	3 1/2	2 1/2	6.00
F-973	Horizontal Output Tr. for Electrostatic Deflection CRT .....	CH-1	1 1/2		1 1/2	1	1 1/2	1/4	4.50



# OUTPUT TRANSFORMERS

## REPLACEMENT and H.O.T. Series

### FREED TRANSFORMER CO., INC.

BROOKLYN 27 NEW YORK

Designed for delivering the maximum audio frequency power from an amplifier to a load (voice coil or line). Good frequency response and low harmonic distortion are the quality factors of the H.O.T. output transformers. Fully enclosed shielded type with leads. All H.O.T. series transformers have multiple secondary impedances.

#### HEAVY OUTPUT TRANSFORMERS

Freed No.	Application or Tube Type	Class	Ohms Impedance		Pri. Ma. Per Side	Max. Wat.	Inv. Feed-back %	Mtg. Type	Mounting Centers		Dimensions			Wt. Lbs.	List Price
			Pri.	Sec.					W	D	W	D	H		
F-110	1-6A3, 2A3, 6Y6, 6L6	A	2,500	2-4-8-500	80	8		PS-1	2	1 1/2	2 3/8	2 1/2	3 1/2	2 1/2	\$5.10
F-111	1-6L6	A	4,000	2-4-8-500	70	10		PS-1	2	1 1/2	2 3/8	2 1/2	3 1/2	2 1/2	6.05
F-112	1-6V6, 1-706	A	5,000	2-4-8-500	50	6		PS-1	1 1/2	1 1/2	2 3/8	2 1/2	2 1/2	1 3/4	4.35
F-113	1-6F6, 42, 2A5, 47 6N6, 6B5	A	7,000	2-4-8-500	40	5		PS-1	1 1/2	1 1/2	2 3/8	2 1/2	2 1/2	1 3/4	4.35
F-114	2-6V6-7C5 PP	AB <sub>1</sub>	8,000	2-4-8-250-500	50	15	10	PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	6.85
F-115	2-2A3-PP 6A3 PP 6B4G PP 45 PP 2-6L6 PP 6Y6 PP	AB	5,000	2-4-8-250-500	80	20		PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	6.85
F-116	2-6L6 PP	AB <sub>1</sub>	6,600	2-4-8-250-500	80	30	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	5	8.00
F-117	2-6L6 PP	AB <sub>1</sub>	8,800	2-4-8-250-500	80	20	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	5	8.00
F-118	2-6L6 PP	AB <sub>1</sub>	9,000	2-4-8-250-500	60	30	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	5	8.00
F-119	2-6L6 PP	AB <sub>2</sub>	6,000	4-8-16-250-500	80	40	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	5	8.75
F-120	2-6L6 PP	AB <sub>2</sub>	8,800	4-8-16-250-500	110	50	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	5 1/2	8.75
F-121	4-6L6 PP Par.	AB <sub>1</sub>	8,800	4-8-16-250-500	160	60	10	PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	6 1/2	9.50
F-122	4-6L6 PP Par.	AB <sub>1</sub>	8,800	50-125-200-250 333-500	160	60		PS-1	2 1/2	2 1/2	3 1/4	3 1/2	3 1/2	6 1/2	9.50
F-123	4-6L6 PP Par.	AB <sub>2</sub>	1,900	84-100-125-166 250-500	220	100	10	PS-1	3	3 1/2	3 3/8	5	4 3/8	13 1/2	21.90
F-124	2-6F6-42-2A5 1P 1-6N7, 6A6, 53 PP 2-6N6, 6B5, 2B6, 6AC5	AB <sub>2</sub> B A	10,000	4-8-15-500	45	20		PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	6.85
F-125	2-2A3, 6A3, 6B4G 2-48, 25L6	AB A	8,000	4-8-15-500	60	20		PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	6.05
F-126	4-2A3, 6A8, 6B4G, 45 PP Par.	AB	1,500	4-8-15-500	80	40		PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	5.85
F-127	2-46, 48, 25 A6 PP 1-6N7, 6A6, 53 PP	A B	8,000	4-8-15-500	86	15		PS-1	2	1 1/2	2 3/8	2 1/2	3 1/2	2 1/2	5.85
F-128	1-12A6-6K6-7B5	A	7,500	4-8-15-500	40	5		PS-1	1 1/2	1 1/2	2 1/2	2 3/8	2 1/2	1 1/2	4.35
F-129	2-12A6-6K6-7B5	A	12,000	4-8-15-500	40	15	10	PS-1	2	1 1/2	2 3/8	2 1/2	3 1/2	2 1/2	5.35
F-130	2-807 PP	AB <sub>2</sub>	4,200	50-125-200-250 333-500	120	75		PS-1	8	8 1/2	8 3/8	5	4 3/8	13 1/2	21.90
F-131	2-50 PP 2-6F6, 42, 2A5 PP	A AB <sub>2</sub>	8,000	4-8-15-500	55	80		PS-1	2 1/4	2	2 1/2	3 1/4	3 1/2	3 1/2	7.30
F-132	4-807 PP Par.	AB <sub>2</sub>	2,100	50-125-200-250 333-500	240	150		PS-1	3 1/2	3 1/2	4 1/8	4 1/2	5 1/2	14	27.50

The 500 ohms secondary is designed in such a way that it can be used with a 600 ohm line.

#### REPLACEMENT OUTPUT TRANSFORMERS

For coupling receiver audio output tube to speaker. These transformers are usually mounted on the loudspeaker frame.

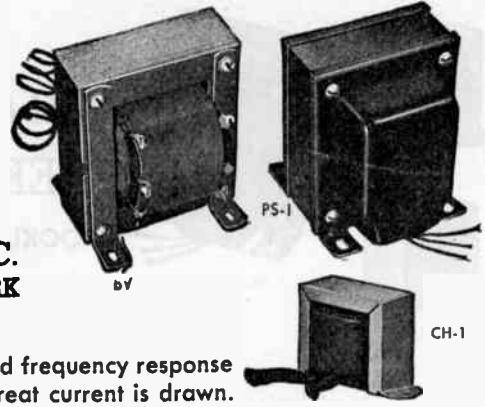
Freed No.	Application or Tube Type	Class	Ohms Impedance		Pri. MA Per Side	Max. Wat.	Mtg. Type	Mtg. Centers	Dimensions			Wt. Lbs.	List Price
			Pri.	Sec.					W	D	H		
F-314	1-251A, 48	A	1,500 or 2,000	8.2	55	5	CH-2	2"	2 3/8	1 1/2	1 1/8	1/2	\$1.40
F-315	1-43, 45, 71-A, 12A5 1-25A6	A	4,000	8.2	40	5	CH-2	2"	2 3/8	1 1/2	1 1/8	1/2	1.40
F-316	1-2A6, 6A4, 6F6, 41 1-42, 47, 89	A	7,000	8.2	40	5	CH-2	2"	2 3/8	1 1/2	1 1/8	1/2	1.40
F-317	1-3Q5, 384, 1Q5, 105 1-184, 8A4	A	8,000	8.2	10	5	CH-2	3"	2 3/8	1 1/2	1 1/8	1/2	1.45
F-318	1-1D8, 1F5, 1T5, 88	A	14,000 or 16,000	8.2	10	5	CH-2	2"	2 3/8	1 1/2	1 1/8	1/2	1.45
F-319	1-304 1-19PP, 1J6GPP, 1G6G 2-30PP, 49PP	A B B	10,000 CT	3.2	15	8	CH-2	2 3/8"	2 1/2	1 1/2	1 1/8	3/8	2.00
F-320	2-45PP-71PP, 48PP 2-25 AG PP	A	8,000 CT	3.2	40	10	CH-2	2 1/2"	8 1/4	2	2	1 1/4	2.70
F-321	2- 6F6 PP, 42 PP 2- 2A5PP, 6A4, P.P.	A	14,000 CT	8.2	40	8	CH-2	2 3/8"	2 1/2	1 1/2	1 1/8	3/8	2.00
F-322	1- 6V6	A	5,000	8.2	45	5	CH-2	2"	2 3/8	1 1/2	1 1/8	1/2	1.40

# AUDIO TRANSFORMERS

*Receiver and Amplifier*

# VIBRATOR TRANSFORMERS

**FREED TRANSFORMER CO., INC.**  
BROOKLYN 27 NEW YORK



## RECEIVER AUDIO TRANSFORMERS

Designed for use in receiver audio circuits where a reasonably good frequency response is required. To be used for Class A applications, i.e., where no great current is drawn.

Freed No.	Classification	Application	Ohms Impedance		Turns Ratio	Pri MA Per Side	Mtg. Type	Mtg. Centers W	Dimensions			Wgt. Lbs.	List Price
			Pr.	Sec.					W	D	H		
F-550	Input	DB mike to grid	200/50	100,000	1:22.4		CH-1	2 1/2	3 1/4	2	2	1 1/4	\$3.15
F-551	Input	SB mike to grid	100	100,000	1:31.6	100	CH-1	2 1/2	3 1/4	2	2	1 1/4	3.15
F-552	Input	Dyn. mike line or mixer to single or P.P. grid	200/50	100,000 CT	1:22.4		CH-1	2 1/2	3 1/4	2	2	1 1/4	3.40
F-553	Input	Line to single or P.P. class A grids	125/500	100,000 CT	1:14.1		CH-1	3 1/2	3 1/2	2 1/2	2 1/2	1 1/4	4.10
F-554	Input	Plate and single button mike to grid	10,000 100	100,000 100,000	1:3.16 1:31.6		CH-1	2 1/2	3 1/4	2	2	1 1/4	3.15
F-555	Input	Voice coil to grid	4/8	100,000	1:112		CH-1	2 1/2	3 1/4	2 1/2	2	1 1/2	3.65
F-556	Matching	DB mike to line	200/50	500/125			CH-1	3 1/2	3 1/2	2 1/2	2 1/2	1 1/4	4.50
F-557	Matching	High impedance mike to line or mixer	100,000	200/50	1:22.4		CH-1	3 1/2	3 1/2	2 1/2	2 1/2	1 1/4	4.50
F-558	Interstage	Single plate to single grid	10,000	90,000	1:3	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	2.60
F-559	Interstage	Single plate to P.P. grids	10,000	90,000 CT	1:3	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	2.70
F-560	Interstage	Single High Imp. plate to single grid	50,000	50,000	1:1	2	CH-1	2 1/2	3 1/4	2	2	1 1/4	4.25
F-561	Interstage	P.P. plates to P.P. grids	20,000 CT	20,000 CT	1:1	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	4.25
F-562	Output	Single plate to line or mixer	10,000	200/50	7.1:1	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	3.05
F-563	Output	Single plate to line	10,000	500/125	4.8:1	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	3.05
F-564	Output	P.P. plates to line or mixer	20,000	200/50	10:1	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	3.05
F-565	Output	P.P. plates to line	20,000	500/125	6.32:1	8	CH-1	2 1/2	3 1/4	2	2	1 1/4	3.05

## AMPLIFIER AUDIO TRANSFORMERS

Designed for amplifier and transmitter audio circuits. To be used for Class "A" applications.

Fully enclosed shielded type construction, conservative design and good frequency response are the quality features of the amplifier audio transformers.

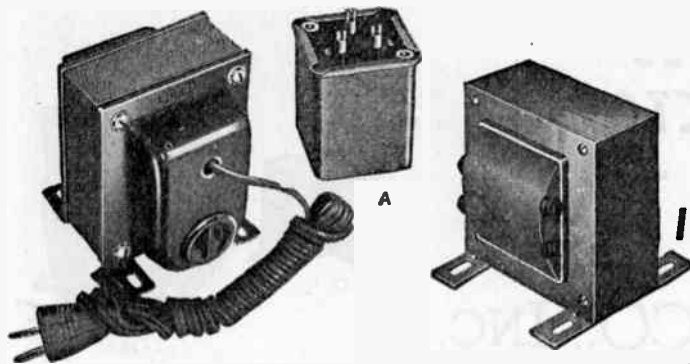
Freed No.	Classification	Application	Pr.	Sec.	Turns Ratio	Pri MA Per Side	Mtg. Type	Mtg. Centers W	W	D	H	Wgt. Lbs.	List Price	
F-500	Input	DB mike to grid	200/50	100,000	1:22.4		PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	\$3.75
F-501	Input	SB mike to grid	100	100,000	1:31.6	100	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.75
F-502	Input	Dyn. mike line or mixer to single or P.P. grids	200/50	100,000 CT	1:22.4		PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	4.00
F-503	Input	Line to single or P.P. class A grids	150/600	100,000 CT	1:12.9		PS-1	1 1/2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/4	4.75
F-504	Input	Plate and single button mike to grid	10,000 100	100,000 100,000	1:3.16 1:31.6		PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.75
F-505	Input	Voice coil to grid	4/8	100,000	1:112		PS-1	1 1/2	1 1/2	1 1/2	2 1/2	2 1/2	1 1/4	4.25
F-506	Matching	DB mike to line	200/50	500/125			PS-1	1 1/2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/4	5.10
F-507	Matching	High Impedance mike to line or mixer	100,000	200/50	1:22.4		PS-1	1 1/2	1 1/2	2 1/2	2 1/2	2 1/2	2 1/4	5.10
F-508	Interstage	Single plate to single grid	10,000	90,000	1:3	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.35
F-509	Interstage*	Single plate to P.P. grid	10,000	90,000	1:3	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.45
F-510	Interstage	Single High Imp. plate to single grid	50,000	50,000	1:1	2	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	4.80
F-511	Interstage*	PP plate to PP grids	20,000 CT	20,000 CT	1:1	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	4.80
F-512	Output	Single plate to line or mixer	10,000	200/50	7.1:1	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.65
F-513	Output	Single plate to line	10,000	500/125	4.8:1	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.65
F-514	Output	PP plate to line or mixer	20,000 CT	200/50	10:1	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.65
F-515	Output	P.P. plates to line	20,000 CT	500/125	6.32:1	8	PS-1	1 1/2	1 1/2	1 1/2	2 1/4	2 1/2	1 1/4	3.65

\*Has Spl. Secondary Winding

## VIBRATOR TRANSFORMERS

Designed for Automobile Receivers Using A Vibrator from a Six Volt Battery Source.

Freed No.	D.C. Output Deliver by Sec.		Style Mtg.	Mounting Dimensions		Dimensions			Weight	List Price
	Volts	Ma.		W	D	W	D	H		
F-450	225	40	BV	2	1 1/2	2 1/2	2	3 1/2	2	\$4.25
F-451	250	50	BV	2	1 1/2	2 1/2	2 1/2	3 1/2	2 1/4	4.60
F-452	250	60	BV	2 1/4	1 1/2	2 1/2	2 1/2	3 1/2	2 1/2	5.30
F-453	275	70	BV	2 1/4	1 1/2	2 1/2	2 1/2	3 1/2	3	6.00
F-454	350	75	BV	2 1/4	2	2 1/2	2 1/2	3 1/2	3 1/2	6.50



PS-2  
**HUM BUCKING CONSTRUCTION FILTER CHOKES**  
 Designed for Series-Parallel Operation at  
 Full Rated Load and Low Temperature Rise

# FILTER CHOKES and HI "Q" REACTORS FILAMENT, AUTO and ISOLATION TRANSFORMERS

# FREE

TRANSFORMER CO., INC.  
 BROOKLYN 27 NEW YORK

Freed No.	Induct.	D.C. Cur.	D.C. Resis.	R.M.S. Test Volts	Mounting Type	Mtg. Dimensions		Dimensions			Weight Lbs.	List Price
						W	D	W	D	H		
F-700	820/80	3/8	6000/1500	2500	OC	2 1/2	1 1/2	2 1/2	2 1/2	3 1/2	3	\$11.00
F-701	100/25	85/70	1400/350	2500	OC	3 3/8	2 1/2	4 1/2	3 1/2	4 1/2	7 1/2	11.25
F-702	50/12.5	50/100	800/150	2500	OC	2 1/2	2 1/2	3 1/2	2 1/2	3 1/2	5 1/2	11.25
F-703	50/12.5	100/200	528/182	3000	OC	4 1/2	3 1/2	5 1/2	4 1/2	5 1/2	10	20.30
F-704	16/4	125/250	240/60	3000	OC	3 3/8	2 1/2	4 1/2	3 1/2	4 1/2	7	11.25
F-705	16/4	175/350	88/22	5000	OC	4 1/2	3 1/2	5 1/2	4 1/2	5 1/2	10	20.30
F-706	24/6	200/400	180/40	7500	OC	5 1/2	5 1/2	6 1/2	6 1/2	7 1/2	20	36.50

## HI "Q" REACTORS

To be used in filters or tuned circuits. Standard values range from 10 millihenries to 50 henries.

Freed No.	Application	Ind. Hen.	Cur. MA	DC Ohms	Mounting Type	Mounting Dimensions		Dimensions			Weight Lbs.	List Price
						W	D	W	D	H		
F-750	Filters, tuned circuits	10	10	1200	A	1 1/2	*	1 1/2	1 1/2	2"	1/2	\$ 5.70
F-751	Filter or tuned circuits	1	20	315	A	1 1/2	*	1 1/2	1 1/2	2"	1/2	5.70
F-752	Filter or tuned circuits	.25	20	80	A	1 1/2	*	1 1/2	1 1/2	2"	1/2	5.70
F-753	Filter or tuned circuits	2	80	190	OC	2 1/2	1 1/2	2 1/2	2 1/2	3 1/2	2	11.40
F-754	Filter or tuned circuits	.5	80	75	OC	2 1/2	1 1/2	2 1/2	2 1/2	3 1/2	2	11.40

## FILAMENT TRANSFORMERS

The mounting dimension 1 1/2 is given between centers across corners.

Part No.	Fil. V	C.T. A	Test Volts R.M.S.	Mounting Type	Mounting Centers		Dimensions			Weight Lbs.	List Price
					W	D	W	D	H		
F-210	2.5	3	1600	CH-1	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2	1/2	\$2.05
F-211	2.5	7.5	1600	CH-1	2 1/2	2 1/2	3 1/2	2	2	1 1/2	2.90
F-212	2.5	12	1600	CH-1	3 1/2	3 1/2	3 1/2	2 1/2	2 1/2	2	3.25
F-213	5	1.5	1000	CH-1	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2	1/2	2.05
F-214	5	4	1600	CH-1	2 1/2	2 1/2	3 1/2	2	2	1 1/2	2.90
F-215	5	6	1600	CH-1	3 1/2	3 1/2	3 1/2	2 1/2	2 1/2	2	3.25
F-216	5	8	1000	FV-1	2	2 1/2	2 1/2	2 1/2	3 1/2	2 1/2	4.25
F-217	5	13	1600	FV-1	2 1/2	2 1/2	2 1/2	2 1/2	3 1/2	4	4.60
F-218	6.3	1.35	1600	CH-1	2 1/2	2 1/2	2 1/2	1 1/2	1 1/2	1/2	2.05
F-219	6.3	8	1600	CH-1	2 1/2	3 1/2	3 1/2	2	2	1 1/2	2.90
F-220	6.3	5	1600	CH-1	3 1/2	3 1/2	3 1/2	2 1/2	2 1/2	2	3.25
F-221	6.3	7	1600	FV-1	2	2 1/2	2 1/2	2 1/2	3 1/2	2 1/2	4.25
F-222	6.3	10	1600	FV-1	2 1/2	2 1/2	2 1/2	2 1/2	3 1/2	4	5.60
F-223	7.5	4	1600	CH-1	3 1/2	3 1/2	3 1/2	2 1/2	2 1/2	2	3.25
F-224	7.5	8	1600	FV-1	2 1/2	2 1/2	2 1/2	2 1/2	3 1/2	4	5.75
F-225	10	12	1600	FV-1	2 1/2	2 1/2	3 1/2	3 1/2	3 1/2	6	9.10

## AUTO TRANSFORMERS

To be used as a step-down transformer. Equipped with standard receptacle and line cord.

Freed No.	V. A. Rating	230/115 50/60 cy.	Mounting Type	Mounting Centers		Dimensions			Weight	List Price
				W	D	W	D	H		
F-900	100	" " "	PS-2	2 1/2	1 1/2	2 1/2	3	3 1/2	4 1/2	\$8.40
F-901	200	" " "	PS-2	2 1/2	2 1/2	3 1/2	3 1/2	3 1/2	6 1/2	9.55
F-902	300	" " "	PS-2	3	2 1/2	3 1/2	3 1/2	4 1/2	7 1/2	12.15
F-903	400	" " "	PS-2	3	2 1/2	3 1/2	3 1/2	4 1/2	8.0	15.20
F-904	500	" " "	PS-2	3	3 1/2	3 1/2	4 1/2	4 1/2	13 1/2	18.25
F-905	750	" " "	PS-2	3 1/2	3 1/2	4 1/2	5 1/2	5 1/2	20	24.30
F-906	1000	" " "	PS-2	3 1/2	5 1/2	4 1/2	6 1/2	5 1/2	29	30.75
F-907	1500	" " "	PS-2	3 1/2	6 1/2	4 1/2	7 1/2	5 1/2	36	45.65
F-908 (no cord)	2000	" " "	PS-2	4 1/2	5	6 1/2	8 1/2	6 1/2	36 1/2	60.00
F-909 (no cord)	2500	" " "	PS-2	4 1/2	6 1/2	6 1/2	10	6 1/2	46 1/2	70.00
F-910 (no cord)	3000	" " "	PS-2	5 1/2	5 1/2	7 1/2	9 1/2	6 1/2	54 1/2	81.25

## ISOLATION TRANSFORMERS

Electrostatic shield between primary and secondary. Equipped with standard receptacle and line cord.

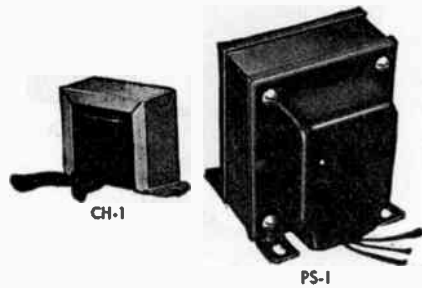
Freed No.	V. A. Rating	115/115 50/60 cy.	Mounting Type	Mounting Centers		Dimensions			Weight	List Price
				W	D	W	D	H		
F-920	50	" " "	PS-2	2 1/2	1 1/2	2 1/2	3	3 1/2	4 1/2	\$9.10
F-921	100	" " "	PS-2	2 1/2	2 1/2	3 1/2	3 1/2	3 1/2	6 1/2	13.00
F-922	300	" " "	PS-2	3 1/2	3 1/2	4 1/2	4 1/2	5 1/2	18	32.85
F-923	500	" " "	PS-2	3 1/2	4 1/2	4 1/2	6 1/2	5 1/2	27	40.00

# FILTER CHOKES and AUDIO REACTORS

# FREED

## TRANSFORMER CO., INC.

BROOKLYN 27                      NEW YORK



### REPLACEMENT FILTER CHOKES

Freel No.	Ind. Henry	D.C. Cur.	D.C. Res.	R.M.S. Test Volt.	Mounting Type	Mto. Centers		Dimensions			Weight	List Price
						W	D	W	D	H		
F-600	8	40	160	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	\$1.40
F-601	4	40	200	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-602	6	40	300	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-603	9	40	400	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-604	11	40	500	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-605	7	55	200	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-606	9	55	300	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-607	10	55	400	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-608	18	55	500	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-609	20	80	1250	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.75
F-610	6	50	400	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-611	4	60	300	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-612	8	75	200	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	1.40
F-613	15	85	625	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-614	5	75	200	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	1.45
F-615	20	50	475	1600	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.55
F-616	10	75	250	1600	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.40
F-617	6	100	150	2000	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.40
F-618	3.5	150	100	2000	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.40
F-619	2	200	60	2000	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.40

### AMPLIFIER AND SMALL TRANSMITTER FILTER CHOKES    Rated under full D.C. current.

Freel No.	Ind. Hen.	D.C. Cur.	D.C. Res.	R.M.S. Test Volts	Mount- ing Type	Mounting Dimensions		Dimensions			Weight	List Price
						W	D	W	D	H		
F-620	20	50	475	1600	PS-1	1 1/2	1 1/8	1 3/8	2 1/2	2 1/8	1 3/8	\$3.15
F-621	10	75	250	1600	PS-1	1 1/2	1 1/8	1 3/8	2 1/4	2 1/8	1 1/2	3.05
F-622	6	100	150	2000	PS-1	1 1/2	1 1/8	1 3/8	2 1/4	2 1/8	1 1/2	3.05
F-623	3.5	150	100	2000	PS-1	1 1/2	1 1/8	1 3/8	2 1/4	2 1/8	1 1/2	3.05
F-624	2	200	60	2000	PS-1	1 1/2	1 1/8	1 3/8	2 1/4	2 1/8	1 1/2	3.05
F-625	20	75	875	1600	PS-1	1 1/2	1 1/8	2 1/8	2 1/4	2 1/8	2 1/8	3.25
F-626	10	110	210	2000	PS-1	1 3/8	1 1/8	2 1/8	2 1/2	2 1/8	2 3/8	3.40
F-627	5	150	100	2000	PS-1	1 3/8	1 1/8	2 1/8	2 3/8	2 1/8	2 1/8	3.25
F-628	20	100	400	2000	PS-1	2	1 1/2	2 5/8	3	3 1/8	3 1/2	4.95
F-629	10	125	240	2000	PS-1	2	1 1/2	2 5/8	2 3/4	3 1/8	3	4.60
F-630	12	160	180	2500	PS-1	2	2 1/8	2 5/8	3 1/8	3 1/8	3 1/2	4.95
F-631	7	200	100	2500	PS-1	2	1 1/2	2 5/8	3	3 1/8	3 1/2	4.95
F-632	5	250	70	3000	PS-1	2	1 1/2	2 5/8	3	3 1/8	3 1/2	4.95
F-633	12	180	235	2500	PS-1	2 1/4	1 3/8	2 3/4	3 1/8	3 1/8	4	5.70
F-634	10	200	150	2500	PS-1	2 1/4	2	2 3/4	3 1/4	3 1/8	4 1/8	5.85
F-635	5	300	65	3000	PS-1	2 1/4	2 1/8	2 3/4	3 3/8	3 1/8	4 1/2	5.85
F-636	20	160	330	2500	PS-1	2 1/2	2 1/8	3 1/8	3 3/8	3 1/8	5 1/8	7.30
F-637	15	200	200	2500	PS-1	2 1/2	2 1/8	3 1/8	3 3/8	3 1/8	5 1/8	7.30
F-638	10	250	135	3000	PS-1	2 1/2	2 1/8	3 1/8	3 3/8	3 1/8	5 1/2	7.30
F-639	20	250	160	3000	PS-1	3	3 1/8	3 3/4	4 1/4	4 1/8	10	9.90

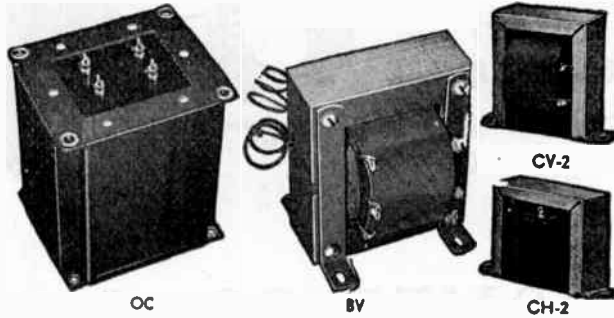
### AMPLIFIER AND SMALL TRANSMITTER SWINGING CHOKES    Rated under full D.C. current.

F-640	5-25	160	180	2500	PS-1	2	1 1/2	2 3/4	2 3/8	3 1/8	3	\$4.95
F-641	5-25	180	235	2500	PS-1	2 1/4	1 3/8	2 3/4	3 1/8	3 1/8	4	5.70
F-642	5-20	200	150	2500	PS-1	2 1/4	2	2 3/4	3 1/4	3 1/8	4 1/4	5.85
F-643	5-30	200	200	2500	PS-1	2 1/2	2 1/8	3 1/8	3 3/8	3 1/8	5 1/2	7.30
F-644	5-20	250	135	3000	PS-1	2 1/2	2 1/8	3 1/8	3 3/8	3 1/8	5 1/2	7.30

### PARALLEL FEED AUDIO REACTORS

Designed to eliminate the direct current component in the primary of audio transformers to be used as plate coupling reactor where the use of a high resistance is objectionable. Low distributed capacity insures excellent high frequency response.

F-645	100	10	8500	1600	CH-1	2		2 3/8	1 1/8	1 1/8	1/2	\$1.95
F-646	350	.5	4900	1600	CH-1	2 3/8		2 1/2	1 3/8	1 1/8	3/8	2.10
F-647	500	.5	6150	1600	CH-1	2 1/2		3 1/4	2	2	1 1/2	3.00
F-648	700	.5	6150	1600	CH-1	2 1/2		3 1/4	2	2	1 1/2	3.00
F-649	80	85	650	1600	CH-1	2 1/2		3 1/4	2	2	1 1/2	2.55



# AUDIO TRANSFORMERS

*C Series*

*Universal*

## OUTPUT TRANSFORMERS

# FREED TRANSFORMER CO., INC.

BROOKLYN 27

NEW YORK

### AUDIO TRANSFORMERS — C SERIES

A quality line of transformers used in Public Address amplifiers and transmitters. Uniform case design, universal mounting, conservative ratings, vacuum impregnation of coils and moisture proof sealing of all these transformers is one of the outstanding

features of the C Series Audio Transformers. Low level input and output transformers have a balanced hum bucking coil construction. The frequency response of all these units is flat within  $\pm 2$  db from 60 to 10,000 cps.

Freed No.	Classification	Application	Ohms Impedance		Turns Ratio	Pri MA Per Side	Mtg. Type	Mtg. Centers			Dimensions			Wgt. Lbs.	List Price
			Pr.	Sec.				W	D	W	D	H			
F-150	Input	Microphone, line or mixer to grid	500*/333 250/200* 125/50	60,000 or 15,000	1:11		OC	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	\$11.65	
F-151	Input	Microphone, line or mixer to P.P. grids	500*/333 250/200* 125/50	120,000 CT	1:22		OC	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	
F-152	Input	Dynamic mike to grid	60/38 30/22 15/10 5.5/2.5	60,000 or 15,000	1:31.6		OO	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	
F-153	Input	Microphone, line or mixer to grid; magnetic shielding	500*/333 250/200* 125/50	50,000	1:10		OC	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	14.60	
F-154	Matching	Microphone, mixer or line to low impedance line	500*/333 250/200* 125/50	500*/333 250/200* 125/50	1:1		OC	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	
F-155	Matching	Dynamic mike or mixer to low impedance line	60/38 30/22 15/10 5.5/2.5	500*/333 250/200* 125/50	1:2.9		OO	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	
F-156	Output	Single plate to line or mixer	10,000 to 15,000	500*/333 250/200* 125/50		8	OO	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	
F-157	Output	Single plate to line or mixer; magnetic shielding	10,000 or 15,000	500*/333 250/200* 125/50			OC	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	14.60	
F-158	Output	P.P. plates to line or mixer	20,000 CT	500*/333 250/200* 125/50		8	OO	2 1/2"	1 1/2"	2 1/2"	2 1/4"	3 1/2"	1 1/2"	11.65	

\*Indicates balanced C.T.

### UNIVERSAL OUTPUT TRANSFORMERS

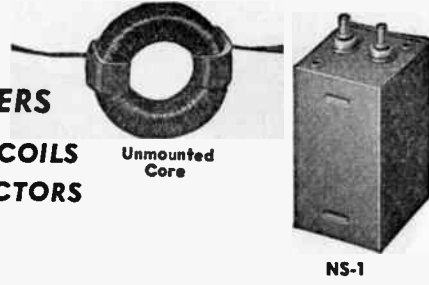
Covering most applications. Correct matching for the various conditions can be obtained by the wide range of plate or line and voice coil impedances.

Freed No.	Classification or Application	Ohms Impedance		Pri. MA	Max. Watts	Mtg. Type	Mounting Centers		Dimensions			Wt. Lbs.	List Price
		Pri.	Sec.				W	D	W	D	H		
F-300	Universal single or	From 1500	Adjustable	36	6	CH-2	2 3/4"		2 1/4"	1 3/4"	1 1/4"	3/4"	\$2.25
F-301	P.P. tubes to speaker	to 20,000	.1-20	55	10	CH-2	2 1/4"		3 1/4"	2"	2"	1 1/4"	2.90
F-302				80	15	CV-2	2 1/4"		3 1/4"	2 1/4"	2 3/4"	2 1/4"	4.25
F-303	Universal single tube to speaker			60	10	CH-2	2 3/4"		2 1/4"	1 3/4"	1 1/4"	1	2.25
F-304	Universal P.P. tubes to speaker	From 3,000 to 10,000	Adjustable .1-20	60	20	CV-2	3 1/2"		3 5/8"	2 1/2"	3 1/8"	2 1/2"	4.25
F-305	Universal single tube to line	2,500-4,000 5,000-7,000	500 600	60	12	CV-2	3 1/2"		3 5/8"	2 1/2"	3 1/8"	2 1/2"	5.35
F-306	Universal P.P. tubes to line	8,000-10,000 12,000-14,000	500 600	60	13	CV-2	3 1/2"		3 5/8"	2 1/2"	3 1/8"	2 1/2"	5.75
F-307	Line to tapped voice coil	500-1,000	Min. .06 to Max. 48	10	10	CV-2	2 1/4"		3 1/4"	2 1/4"	2 3/4"	1 1/4"	4.60
F-308		1,500-2,000		15	15	CV-2	3 1/4"		3 5/8"	2 1/4"	3 1/4"	2 1/2"	5.40
F-309		2,500-3,000		20	20	BV-2	2 1/2"	2 1/4"	2 1/4"	2 3/4"	3 1/4"	3 1/2"	6.00
F-310				30	30	BV-2	2 1/2"	2 1/4"	2 1/4"	3 1/4"	3 1/4"	4 1/4"	7.40
F-311	Line to voice coil	500/250	15-8-4-2	10	10	CV-2	2 3/4"		2 3/4"	2"	2 3/4"	1 1/4"	3.40
F-312		500/250	50-25-16-8-4	60	60	BV-2	2 1/2"	2 1/4"	3 1/4"	3 1/4"	3 1/4"	4 1/4"	9.10
F-313	Line to multiple speakers (auto-transformer)	500	250/166 125/100/84	70	70	BV-2	2 1/2"	2 1/4"	3 1/4"	3 1/4"	3 1/4"	4 1/4"	9.10



## HIGH FIDELITY OUTPUT TRANSFORMERS

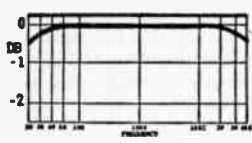
LOW FREQUENCY HIGH "Q" COILS  
HIGH "Q" TOROID INDUCTORS



# FREED TRANSFORMER CO., INC.

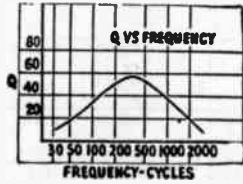
BROOKLYN 27 NEW YORK

FREED No.	Primary Matches Following Typical Tubes	Primary Impedance	Secondary Impedance	±1/2 db from	Maximum Level	Type of Case	List
F-1950	Push pull 2A3's, 6A5G's, 300A's, 275A's, 6A3's, 6L6's	5000 ohms	500, 333, 250, 200, 125, 50 cycles	20-30000	15 watts	DC-5B	\$28.00
F-1951	Push pull 2A3's, 6A5G's, 300A's, 275A's, 6A3's, 6L6's	5000 ohms	80, 20, 15, 10, 7.5, 5, 2.5, 1.2 cycles	20-30000	15 watts	DC-5B	28.00
F-1954	Push pull 2A5, 6V6, 42 or 2A5, A prime	8000 ohms	500, 333, 250, 200, 125, 50 cycles	20-30000	15 watts	DC-5B	28.00
F-1955	Push pull 2A5, 6V6, 42 or 2A5, A prime	8000 ohms	80, 20, 15, 10, 7.5, 5, 2.5, 1.2 cycles	20-30000	15 watts	DC-5B	28.00
F-1958	Push pull 6B5, 6A6, 53, 6F6, 5D, 7D, 8D, 6V6, Class B 46, 5D	10,000 ohms	500, 333, 250, 200, 125, 50 cycles	20-30000	15 watts	DC-5B	28.00
F-1959	Push pull 6B5, 6A6, 53, 6F6, 5D, 7D, 8D, 6V6, Class B 46, 5D	10,000 ohms	80, 20, 15, 10, 7.5, 5, 2.5, 1.2 cycles	20-30000	15 watts	DC-5B	28.00
F-1962	Push pull parallel 2A3's, 6A5G's, 300A's, 6A3's, 6L6	2500 ohms	500, 333, 250, 200, 125, 50 cycles	20-30000	36 watts	DC-6A	35.00
F-1963	Push pull parallel 2A3's, 6A5G's, 300A's, 6A3's, 6L6	2500 ohms	80, 20, 15, 10, 7.5, 5, 2.5, 1.2 cycles	20-30000	36 watts	DC-6A	35.00
F-1966	Push pull parallel 6L6 or 6A5G's, 300A's, 6A3's, 6L6	3800 ohms	500, 333, 250, 200, 125, 50 cycles	20-30000	50 watts	DC-7B	45.00
F-1967	Push pull parallel 6L6 or 6A5G's, 300A's, 6A3's, 6L6	3800 ohms	80, 20, 15, 10, 7.5, 5, 2.5, 1.2 cycles	20-30000	50 watts	DC-7B	45.00



### LOW FREQUENCY HIGH "Q" COILS

FREED No.	Inductance Value	Type of Case
F-1900	100 HY	DC-2
F-1901	75 HY	DC-2
F-1902	50 HY	DC-2
F-1903	25 HY	DC-2



FREED No.	Inductance Value	Type of Case
F-1904	10 HY	DC-2
F-1905	5 HY	DC-2
F-1906	1 HY	DC-2

PRICES ON REQUEST

### HIGH "Q" CHOKES . . . Used in Dynamic Noise Suppressors

FREED No.	Ind. Henry	D.C. Cur.	D.C. Res.	R.M.S. Test Volt.	Mounting Type	Mounting Centers W	W	D	H	Weight	List Price
F-1980	0.6			500	CH-1	1 1/2	1 1/2	1	1 1/2	3 oz.	\$4.90
F-1981	2.0			500	CH-1	1 1/2	1 1/2	1	1 1/2	3 oz.	4.90
F-1982	.4			500	CH-1	1 1/2	1 1/2	1	1 1/2	3 oz.	4.90
F-1983	1.8			500	CH-1	1 1/2	1 1/2	1	1 1/2	3 oz.	4.90

### HIGH Q TOROID INDUCTORS

FREED NUMBER	INDUCTANCE VALUE	TYPE OF CASE	FREED NUMBER	INDUCTANCE VALUE	TYPE OF CASE	FREED NUMBER	INDUCTANCE VALUE	TYPE OF CASE
F-800T	5 MHY	DC-1	F-850T	5 MHY	NS-1	F-1807T	30 MHY	DC-1
F-801T	10 MHY	DC-1	F-851T	10 MHY	NS-1	F-1808T	50 MHY	DC-1
F-802T	15 MHY	DC-1	F-852T	15 MHY	NS-1	F-1809T	75 MHY	DC-1
F-803T	30 MHY	DC-1	F-853T	30 MHY	NS-1	F-1810T	100 MHY	DC-1
F-804T	50 MHY	DC-1	F-854T	50 MHY	NS-1	F-1811T	150 MHY	DC-1
F-805T	75 MHY	DC-1	F-855T	75 MHY	NS-1	F-1812T	200 MHY	DC-1
F-806T	100 MHY	DC-1	F-856T	100 MHY	NS-1	F-1813T	300 MHY	DC-1
F-807T	150 MHY	DC-1	F-857T	150 MHY	DC-1	F-1814T	400 MHY	DC-1
F-808T	200 MHY	DC-1	F-858T	200 MHY	DC-1	F-1815T	500 MHY	DC-1
F-809T	500 MHY	DC-1	F-859T	300 MHY	DC-1	F-1850T	.5 MHY	DC-1
F-810T	750 MHY	DC-1	F-860T	400 MHY	DC-1	F-1851T	1 MHY	DC-1
F-811T	1000 MHY	DC-1	F-861T	500 MHY	DC-1	F-1852T	2 MHY	DC-1
F-812T	1250 MHY	DC-1	F-862T	600 MHY	DC-1	F-1853T	3 MHY	DC-1
F-813T	1500 MHY	DC-1	F-863T	700 MHY	DC-1	F-1854T	4 MHY	DC-1
F-814T	1750 MHY	DC-1	F-864T	800 MHY	DC-1	F-1855T	5 MHY	DC-1
F-815T	2000 MHY	DC-1	F-865T	900 MHY	DC-1	F-1856T	10 MHY	DC-2
F-816T	2250 MHY	DC-1	F-866T	1000 MHY	DC-1	F-1857T	15 MHY	DC-2
F-817T	2500 MHY	DC-1	F-1800T	1 MHY	DC-1	F-1858T	20 MHY	DC-2
F-818T	2750 MHY	DC-1	F-1801T	2 MHY	DC-1	F-1859T	30 MHY	DC-2
F-819T	3000 MHY	DC-1	F-1802T	3 MHY	DC-1	F-1860T	40 MHY	DC-2
F-820T	3500 MHY	DC-1	F-1803T	4 MHY	DC-1	F-1861T	50 MHY	DC-2
F-821T	4000 MHY	DC-1	F-1804T	5 MHY	DC-1	F-1862T	75 MHY	DC-2
F-822T	4500 MHY	DC-1	F-1805T	10 MHY	DC-1	F-1863T	100 MHY	DC-2
F-823T	5000 MHY	DC-1	F-1806T	15 MHY	DC-1			

STANDARD TOLERANCE ±2%

FOR TOLERANCES OF ±1%, ADD 7% TO COST

#### CASE SIZES

Type	Width	Depth	Height	Mounting	Screws	Weight
NS-1	1 1/2"	1 1/2"	2"	1 1/2" between centers	6/32	8 oz.
DC-1	2 1/8"	1 1/8"	2 1/2"	1 1/2" x 1 1/2"	6/32	14 oz.
DC-2	2 3/8"	2 1/8"	3"	2" x 1 1/2"	6/32	16 oz.
DC-5B	4 1/8"	3 1/8"	4 1/2"	3 1/2" x 2 1/2"	10/32	6 1/2 lbs.
DC-6A	4 1/8"	4 1/8"	4 1/2"	3 3/4" x 3"	10/32	10 lbs.
DC-7B	5 1/8"	4 1/8"	6"	4 3/4" x 3 1/2"	1/2-20	20 lbs.

All inductors listed above can be supplied in hermetically sealed cans, commercial type construction or open units.

PRICES ON REQUEST

# Thermador Transformers

## POWER COMPONENTS

### POWER TRANSFORMERS



TYPE NUMBER	CASE	HIGH VOLTAGE SECONDARY	SEC CUR.	RECTIFIER FIL.	FILAMENT	DIMENSIONS H W D			MOUNTING CENTERS	WT.	PRICE
5A6640	A	330-0-330	40 MA	5V-2A	6.3VCT@2A	3 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{11}{16}$	2 x 2	2 <sup>#</sup> -8 OZ.	\$5.00
5A4056	A	205-0-205	50 MA		6.3V @2.5A	2 $\frac{3}{4}$	2 $\frac{3}{8}$	3 $\frac{1}{8}$	1 $\frac{3}{4}$ x 2 $\frac{13}{16}$	2 <sup>#</sup> -5 OZ.	4.50
5A5086	A	270-0-270	60 MA	5V-2A	6.3V @2A	3 $\frac{1}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$	2 x 2 $\frac{7}{16}$	3 <sup>#</sup> -6 OZ.	5.35
5A6076	A	300-0-300	65 MA		6.3V @2.7A	3 $\frac{1}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$	2 x 2 $\frac{7}{16}$	3 <sup>#</sup>	5.25
5A6086	A	300-0-300	65 MA	5V-2A	6.3V @2.1A	3 $\frac{1}{4}$	2 $\frac{3}{4}$	3 $\frac{1}{4}$	2 x 2 $\frac{7}{16}$	3 <sup>#</sup> -6 OZ.	5.75
5A6086	A	300-0-300	75 MA	5V-2A	6.3V @2.65A	3 $\frac{9}{16}$	2 $\frac{15}{16}$	3 $\frac{1}{8}$	2 $\frac{1}{4}$ x 2 $\frac{1}{8}$	3 <sup>#</sup>	6.80
5A6096	A	350-0-350	90 MA	5V-2A	6.3VCT@3.15A	3 $\frac{9}{16}$	2 $\frac{15}{16}$	3 $\frac{7}{16}$	2 $\frac{1}{4}$ x 2 $\frac{7}{16}$	4 <sup>#</sup>	7.10
5A6116	A	310-0-310	110 MA	5V-3A	6.3VCT@5A	4 $\frac{1}{8}$	3 $\frac{5}{8}$	3 $\frac{5}{16}$	2 $\frac{3}{4}$ x 2	5 <sup>#</sup>	7.50
5A6146	A	300-0-300	135 MA	5V-3A	6.3VCT@3.3A	4 $\frac{1}{8}$	3 $\frac{5}{8}$	3 $\frac{5}{16}$	2 $\frac{3}{4}$ x 2 $\frac{1}{4}$	5 <sup>#</sup> -13 OZ.	8.10
5A6196	A	320-0-320	185 MA	5V-3A	6.3VCT@6A	4 $\frac{1}{8}$	3 $\frac{5}{8}$	4	2 $\frac{3}{4}$ x 2 $\frac{11}{16}$	7 <sup>#</sup> -8 OZ.	10.25

## THERMADOR TRANSFORMERS

Superior materials, workmanship and performance have established these Thermador transformers as America's finest. Designed, engineered and produced by the West's largest manufacturer of transformers, the name Thermador guarantees their rugged, precision construction and their longer life.

### REPLACEMENT TRANSFORMERS

*Adaptable to a Particular Job:* The transformer models listed have been engineered to cover the replacement field for both the old and new home radio receivers. The new line affords the widest range of application for use in receivers, amplifiers and small transmitters.

*Thermatite Treated to Withstand Heat and Humidity:* THERMADOR transformers are Thermatite treated, which is a well tested and approved form of vacuum impregnation. This treatment, proved on thousands of transformers under severe climatic conditions, gives these units the resistance to withstand extreme conditions of humidity and heat.

## Thermador Electrical Manufacturing Company



# Thermador Transformers

## POWER COMPONENTS

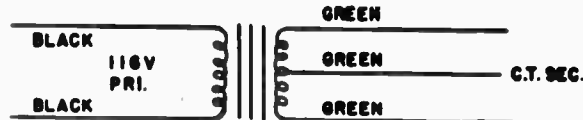
### CHOKES

RED-BLACK

RED-YELLOW

TYPE NUMBER	CASE	INDUCTANCE	CURRENT	RESISTANCE OHMS	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
					H	W	D			
7L1005	L	10HY	50 MA	450	$1\frac{5}{8}$	$2\frac{3}{4}$	$1\frac{3}{8}$	$2\frac{1}{4}$	90Z.	\$2.10
7L1008	L	10HY	75 MA	380	2	$3\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	80Z.	2.35
7A1809	A	18HY	90 MA	600	$2\frac{7}{8}$	$2\frac{3}{8}$	$2\frac{13}{16}$	$1\frac{3}{4} \times 1\frac{15}{16}$	1 <sup>#</sup> -140Z.	4.10
7A1414	A	14HY	135 MA	260	$3\frac{1}{4}$	$3\frac{3}{4}$	3	2 x $2\frac{3}{16}$	2 <sup>#</sup> -120Z.	4.85
7A0819	A	8HY CT	185 MA	212	$3\frac{3}{16}$	$2\frac{11}{16}$	$3\frac{3}{8}$	2 x $2\frac{1}{2}$	3 <sup>#</sup> -80Z.	5.15

### FILAMENT TRANSFORMERS



TYPE NUMBER	CASE	FILAMENT	CURRENT	TEST VOLTAGE	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
					H	W	D			
6L6022	L	6.3 VCT	2.25 A	2000	2	$3\frac{1}{8}$	$1\frac{7}{8}$	$2\frac{3}{4}$	1 <sup>#</sup> -80Z.	\$3.00
6A6042	A	6.3 VCT	4.0 A	2000	$2\frac{3}{4}$	$2\frac{3}{8}$	$3\frac{3}{16}$	$1\frac{3}{4} \times 2\frac{1}{4}$	2 <sup>#</sup> -50Z.	4.80
6A2422	A	12 V 12 V	2.0 A 2.0 A	2000	$3\frac{1}{2}$	$2\frac{15}{16}$	$2\frac{7}{8}$	$2\frac{1}{4} \times 1\frac{29}{32}$	3 <sup>#</sup> -40Z.	6.00
6D2515	O	2.5 VCT	10 A	5000	$3\frac{1}{2}$	3	$2\frac{7}{8}$	$2\frac{1}{4} \times 2$	2 <sup>#</sup> -120Z.	5.75
6A8082	A	6.3 CT	8 A	2000	$3\frac{1}{2}$	$2\frac{15}{16}$	$3\frac{1}{4}$	$2\frac{1}{4} \times 2\frac{9}{32}$	3 <sup>#</sup> -120Z.	6.50
6D1014	D	10 VCT	10 A	4000	$4\frac{1}{16}$	$3\frac{5}{8}$	$3\frac{1}{4}$	$2\frac{3}{4} \times 2$	4 <sup>#</sup> -120Z.	7.95

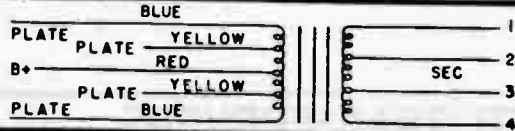
Buy the best — Buy Thermador

**Thermador Electrical Manufacturing Company**

# Thermador Transformers

## AUDIO COMPONENTS

### OUTPUT TRANSFORMERS



TYPE NUMBER	CASE	PRIMARY OHMS	SEC. OHMS	WATTS	PRI. MA	DIMENSIONS			MOUNTING CENTERS	WT	PRICE
						H	W	D			
4L1026	L	5000, 7000, 10000 SINGLE	2-6	2	15	1 $\frac{5}{16}$	1 $\frac{13}{16}$	1 $\frac{1}{8}$	1 $\frac{1}{2}$	30Z	\$2.90
4L1048	L	3500, 5000, 8000, 10000 SINGLE & P.P.	2-8	5	40	1 $\frac{7}{16}$	2 $\frac{7}{16}$	1 $\frac{1}{2}$	2	50Z	3.10
4F7050	F	7000	3, 4, 8, 16 200, 500	5	40	2 $\frac{7}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{5}{8}$ x 1 $\frac{13}{16}$	1" - 80Z	9.50
4L4056	L	2000, 2500, 3000, 4000 SINGLE & P.P.	2-6	5	55	1 $\frac{1}{2}$	2 $\frac{3}{8}$	1 $\frac{1}{2}$	2	50Z	2.75
4L1056	L	4000, 5000, 7000, 10000, 14000 C.T.	2-16	10	50	1 $\frac{15}{16}$	3 $\frac{1}{16}$	1 $\frac{3}{4}$	2 $\frac{3}{4}$	1"	3.25
4L1051	L	4000, 5000, 8000, 10000 - P.P.	2-12	10	50	2 $\frac{3}{8}$	3	1 $\frac{7}{8}$	2 $\frac{1}{2}$	1" - 50Z	3.80
4L1046	L	2000, 2500, 3500, 5000, 7000, 10000, SINGLE, 3000, 5000 7000, 10000 P.P.	1-6	7.5	45	1 $\frac{9}{16}$	2 $\frac{3}{4}$	1 $\frac{1}{2}$	2	80Z	2.95
4A8105	A	5000, 3000 C.T. P.P.	4-8 16-500	15	95	2 $\frac{3}{4}$	2 $\frac{3}{8}$	2 $\frac{7}{8}$	1 $\frac{3}{4}$ x 1 $\frac{15}{16}$	1" - 120Z	6.00
4A7145	A	5000, 6800 C.T. P.P.	3, 4, 6, 8, 16-500	26	140	3 $\frac{1}{2}$	2 $\frac{15}{16}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$ x 2 $\frac{9}{16}$	4" - 80Z	9.75

LINE TO VOICE COIL  
FOR MATCHING 500 OHM OUTPUT OF AMPLIFIER TO SERIES AND PARALLEL COMBINATIONS OF 500 OHM SPEAKERS

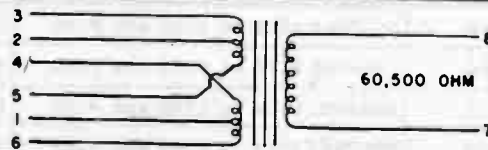
4L2016	L	2000, 1500, 1000, 830, 500, 250	3, 4, 6, 8, 16	12		2 $\frac{3}{4}$	2 $\frac{3}{8}$	3	1 $\frac{1}{2}$	1" - 60Z	\$4.75
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### TRANSCEIVER



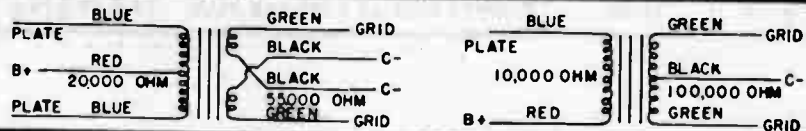
2L1726	L	100 - 10000	65000	110	1.0 255	1 $\frac{5}{16}$	1 $\frac{13}{16}$	1	1 $\frac{1}{2}$	30Z	\$3.25
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### INPUT



2F5611	F	50, 250, 125, 333, 200, 500	50000	110		2 $\frac{7}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{5}{8}$ x 1 $\frac{13}{16}$	1" - 80Z	\$16.25
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### INTERSTAGE



3A2602	A	20000 P.P.	55000 P.P.	1173		2 $\frac{7}{8}$	2 $\frac{3}{8}$	2 $\frac{3}{8}$	1 $\frac{3}{4}$ x 2	1" - 130Z	\$6.00
3L1103	L	10000 SINGLE	100000 P.P.	1316		1 $\frac{5}{8}$	2 $\frac{3}{4}$	1 $\frac{3}{8}$	2 $\frac{1}{4}$	80Z	2.85

**Thermador Electrical Manufacturing Company**

# Thermador Transformers

## TELEVISION

### POWER TRANSFORMERS

TYPE NUMBER	CASE	HIGH VOLTAGE SECONDARY	SEC. CUR.	RECT. FIL.	FIL.	FIL.	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
							H	W	D			
6A7026	A	350-0-350	200MA	5V-3A	6.3V@7A	6.3V @1A	4 $\frac{1}{16}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$	2 $\frac{3}{4}$ X 3 $\frac{1}{4}$	10 <sup>#</sup>	\$9.25
5A8026	A	380-0-380	220MA	5V-3A	6.3V@8.5A	6.3 @1.2A	4 $\frac{15}{16}$	4 $\frac{8}{16}$	4 $\frac{1}{4}$	3 $\frac{3}{8}$ X 3	11 <sup>#</sup>	12.00
6B7035	B	365-0-365	300MA	5V-6A	5V@2A	12.6CT@6A	6 $\frac{15}{16}$	4 $\frac{1}{8}$	4 $\frac{3}{4}$	3 $\frac{1}{4}$ X 4	15 $\frac{1}{2}$ <sup>#</sup>	15.00

### CHOKES

TYPE NUMBER	CASE	INDUCTANCE	CURRENT	RESISTANCE OHMS	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
					H	W	D			
7L0422	L	4 MY	220 MA	100	2 $\frac{3}{4}$	4 $\frac{1}{8}$	2 $\frac{1}{4}$	3 $\frac{5}{8}$	2 $\frac{1}{2}$ <sup>#</sup>	\$3.45
7L0130	L	1 MY	300 MA	37	2 $\frac{1}{4}$	3 $\frac{7}{8}$	2 $\frac{1}{2}$	3 $\frac{5}{16}$	2 $\frac{1}{4}$ <sup>#</sup>	4.25

### OUTPUT TRANSFORMERS

TYPE NUMBER	CASE	PRIMARY IMPEDANCE	SECONDARY IMPEDANCE	WATTS	PRI MA	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
						H	W	D			
4L8350	L	8000 OHMS	3.2 OHMS	10	50	2	3 $\frac{1}{4}$	1 $\frac{5}{8}$	2 $\frac{3}{4}$	1 <sup>#</sup> -6oz.	\$3.70
401001	D	VERTICAL OUTPUT TRANSFORMER FOR USE IN CIRCUITS USING TYPE 201D1 AND 201D2 DEFLECTION YOKES RATIO 10:1				3 $\frac{3}{16}$	2 $\frac{11}{16}$	3 $\frac{1}{4}$	2 X 2 $\frac{5}{16}$	2 $\frac{1}{2}$ <sup>#</sup>	7.50

### STEP-DOWN 230-115 VOLTS

TYPE NUMBER	CASE	RATING VA	CONNECTIONS	DIMENSIONS			MOUNTING CENTERS	WT.	PRICE
				H	W	D			
5A1150	A	150	EQUIPPED WITH AC CORD AND PLUG	3 $\frac{1}{8}$	3	3 $\frac{1}{4}$	2 $\frac{1}{4}$ X 2 $\frac{1}{8}$	4 <sup>#</sup>	\$11.00
5A1250	A	250	EQUIPPED WITH AC CORD AND PLUG	4 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	2 $\frac{3}{4}$ X 2 $\frac{1}{4}$	6 <sup>#</sup>	15.50
5A1500	A	500	EQUIPPED WITH AC CORD AND PLUG	5	4 $\frac{3}{8}$	5	3 $\frac{3}{8}$ X 3 $\frac{1}{8}$	13 <sup>#</sup>	19.85
5A1600	A	600	EQUIPPED WITH AC CORD AND PLUG	5	4 $\frac{3}{8}$	5 $\frac{1}{4}$	3 $\frac{3}{8}$ X 3 $\frac{7}{8}$	14 $\frac{1}{2}$ <sup>#</sup>	20.45
5K1800	K	800	EQUIPPED WITH AC CORD AND PLUG	6 $\frac{1}{4}$	7 $\frac{1}{4}$	5 $\frac{3}{8}$	6 $\frac{11}{16}$ X 4 $\frac{3}{8}$	22 $\frac{1}{2}$ <sup>#</sup>	43.20
5K1999	K	1000	EQUIPPED WITH AC CORD AND PLUG	6 $\frac{1}{4}$	7 $\frac{7}{8}$	6 $\frac{1}{4}$	7 $\frac{1}{4}$ X 5 $\frac{1}{8}$	25 <sup>#</sup>	56.25

Buy the best — Buy Thermador

**Thermador Electrical Manufacturing Company**

# Thermador Transformers

## STUDIO QUALITY TRANSFORMERS

### INPUT TRANSFORMERS

TYPE NUMBER	CASE	PRIMARY IMPEDANCE	SECONDARY IMPEDANCE	PRI. IND @ 1MV	TURN RATIO	SHIELDING & HUM REDUCTION	TERMINALS	RESPONSE	WT.	PRICE
SQ 2	HB	500-333-250 200-125-50	100000 PP GRIDS	6M	1:14.1	90DB REDUCTION 1PM & HUM-BUCKING	9	2DB DOWN @ 20C 2DB DOWN @ 10KC	7OZ.	\$21.00
SQ 4	HM	500-333-250 200-125-50	50000 GRIDS	6M	1:10	45DB SHIELDING 1PM	8	2DB DOWN @ 20C 2DB DOWN @ 20KC	3 1/2 OZ.	17.00

\* BALANCED WINDINGS      \*\* BALANCED DC WINDINGS

### TONE CHOKES

TYPE NUMBER	CASE	INDUCTANCE	Q	SHIELDING	TERMINALS	DC. CURRENT	WT.	PRICE
SQ 96	HB	200-163-141-121-115 110-875-83.2-71.4-67.3 63.5-53-50-46.8-37.8 35.1-32.5-25.15-22.9-20.7 13.3-11.68-7.5-5.2-1.87 HENRIES	3-8	90 DB 1PM AND HUM-BUCKING	8	8 MA MAX	7OZ	\$18.00
SQ 98	HB	16-12.45-11.35-9.62-9.4 8.4-6.95-6.08-5.9-5.07 4.87-4.7-4-3.33-3.2 3.05-2.45-2.36-1.85-1.64 1.22-86-8-41-.215 HENRIES	3-8	90 DB 1PM HUM-BUCKING	8	10 MA MAX	7OZ	17.00

BALANCED WINDINGS

### OUTPUT TRANSFORMERS

TYPE NUMBER	CASE	PRIMARY IMPEDANCE	SEC IMP	PRI OCL 60CYCLES	USE	WATTS	MAX DB LEVEL	PRI CUR	RESPONSE	WT.	PRICE
SQ 30	HG	15000 Ω OR 3750 Ω	500 125	200 H	2-6C5 2-6J5 2-6SN7 ETC	1-2	30 DB	10 MA	1 DB DOWN @ 20C 1 DB DOWN @ 25KC	1"	\$25.00
SQ 32	F5	10000 Ω OR 8000 Ω	500-125 16-12-8 6-4-2	85 H	2-6V6 2-7C5 2-6K6 ETC	10 TO 12	33 DB	80 MA	2DB DOWN @ 20C 0DB DOWN @ 25KC	3 3/4"	30.00
SQ 34	F6	5000 Ω OR 3000 Ω	500-125 16-12-8 6-4-2	45 H	2-6B4 2-2A3 2-6A3 ETC	15	34 DB	80 MA	1 1/2 DB DOWN @ 20C 0DB DOWN @ 25KC	6"	32.00
SQ 36	F7	6600 Ω OR 5000 Ω	500-125 16-12-8 6-4-2	52 H	2-6L6 A. OR AB 2-815 ETC	26.5	36.5 DB	145 MA	2DB DOWN @ 20C 0DB DOWN @ 25KC	8 3/4"	38.50
SQ 38	F7	2500 Ω OR 1500 Ω	500-125 16-12-8 6-4-2	23 H	4-2A3 4-6A3 4-6B4	30	37 DB	160 MA	1 1/2 DB DOWN @ 20C 0DB DOWN @ 25KC	9 1/2"	40.50
SQ 40	K1	6000 Ω OR 3800 Ω	500-125 16-12-8 6-4-2	48 H	2-6L6 AB	45	39 DB	205 MA	2DB DOWN @ 20C 0DB DOWN @ 25KC	15 3/4"	48.50
SQ 42	K1	3300 Ω OR 2500 Ω	500-125 16-12-8 6-4-2	27 H	4-6L6 A OR AB 2-807	60	40DB	280 MA	2DB DOWN @ 20C 0DB DOWN @ 25KC	17"	52.50

\* BALANCED WINDINGS

#### CASE SIZES

CASE	H	W	O	CASE	H	DIAMETER
F-4	3 5/16	2 3/8	2 7/8	HM	1 11/16	1 3/8
F-5	3 3/4	2 7/8	3 1/8	HB	2	1 3/8
F-6	4 7/16	3 3/8	3 5/8	HG	2 5/8	2 1/8
F-7	4 15/16	3 7/8	4 13/32			
K-1	6 1/2	4 1/4	4 3/4			

NOTE THE HM, HB, AND HG CASES ARE HERMETICALLY SEALED AND MOUNT INTO STANDARD TUBE SOCKET PUNCHING 1/2" CENTERS

**Thermador Electrical Manufacturing Company**

# Thermador Transformers

## STUDIO QUALITY TRANSFORMERS

### DRIVER TRANSFORMER

TYPE NUMBER	CASE	PRIMARY	SECONDARY	USE	PRI CURRENT	RESPONSE	WT.	PRICE
SQ-10	F-4	15000 OHM OR 3750 OHM	135000 OHM * * BALANCED SPLIT WINDINGS	SINGLE OR P.P. DRIVERS	12 MA	1 1/2 DB DOWN @ 25C 0 DB DOWN @ 25KC	3"	\$24.00

### POWER TRANSFORMER

TYPE NUMBER	CASE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	FIL. NO.1	FIL. NO.2	FIL. NO.3	WT	PRICE
SQ-80	F-7	105 115 125	380-320-80-0-320-380 @ 120 MA	5VCT @ 3A	6.3VCT @ 4A	2.5VCT @ 5A	9 1/2"	\$24.00
SQ-82	K-1	105 115 125	420-375-80-0-375-420 @ 200 MA	5VCT @ 3A	6.3V. @ 5.5A	2.5VCT @ 10A	13 1/2"	30.00
SQ-84	K-1	105 115 125	575-440-60-0-440-575 @ 325 MA	5VCT @ 6A	6.3VCT @ 4A	6.3VCT @ 2.5A	10 1/4"	34.50

### CHOKES

TYPE NUMBER	CASE	INDUCTANCE	CURRENT	D.C. RESISTANCE	VOLTAGE INSULATION	WT.	PRICE
SQ-90	F-6	16/4	120 MA OR 240 MA	250 OHMS	2000	6 1/2"	\$19.50
SQ-92	F-7	16/4	175 MA OR 350 MA	185 OHMS	2500	8 3/4"	24.00

#### STUDIO QUALITY TRANSFORMERS

THE HI-FIDELITY series of audio equipment listed above represents the highest degree of quality yet attained in audio transformers. In addition to the absolute moisture elimination provided by "Thermatite" treatment, THERMADOR hi-fidelity transformers have the following advantages:

*Wide Frequency Range:* Transformers of the SQ series are linear within one db. from 20 to 20000 cycles.

*Balanced Winding.* THERMADOR transformers are constructed to give the best practical magnetic, capacity and resistive balance. In designs where capacity balance is important, each winding is made up of two symmetrical coils. Input transformers are supplied with a static shield between primary and secondary.

*Low Harmonic Distortion:* THERMADOR transformers are designed to offer the proper load impedance to the tubes with which they operate. Maximum primary inductance, low leakage reactance and low flux densities in the core permit unusually low harmonic levels.

Catalog with case types illustrated is available upon request. For full information write to:

**Thermador Electrical Manufacturing Company**



# MERIT TRANSFORMERS

## OUTPUT TRANSFORMERS Receiver Replacement Type

To couple the plate or plates of the output stage to the speaker voice coil. Sec. impedance—3.5 ohms.

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	Dimen.			Mtg.
								H.	W.	D.	
A-3017	\$2.00	PPIA5, IAC5, IN6, ILA4	A	5000 c.t.	10	5	2	1 3/4	2 3/4	1 1/4	A
★A-3018	2.25	Single 6A3, 6L6, 6Y6, 7A5, 12A5, 25A6, 25B6, 25C6, 25L6, 50, 50A5, 50B5, 50C5, 50L6	A	3500	60	8	2 3/4	1 3/4	2 1/4	1 1/2	A
★A-3019	2.30	Single 6L6, 6V6, 6AQ5, 6AS5, 7C5, 25A6, 35A5, 35L6, 50	A	5000	50	8	2 3/4	1 3/4	2 1/4	1 1/2	A
★A-3020	2.30	Single 2A5, 6AC5, 6AD7, 6AR5, 6B5, 6F6, 6K6, 6N6, 6Y7, 7B5, 12A6, 14A5, 41, 47	A	7000	40	8	2 3/4	1 3/4	2 1/4	1 1/2	A
★A-3021	3.00	PP2A5, 6E6, 6K6 PP6AD7, 47, 49 Single 6Y7, 6Z7, 79	A A AB B	14000 c.t.	35	12	2 1/4	2	3 3/4	1 3/4	A A
A-3025	1.25	7A5, 35A5, 35C5, 50C5, 3217, 35L6, 50B5	A	2500	50	3	1 3/4	1 3/4	1 3/4	3/4	A
A-3026	1.25	6V6, 7C5, 25AC5, 35A5, 35B5, 35L6	A	5000	40	3	1 3/4	1 3/4	1 3/4	3/4	A
A-2927	1.25	Single 1C5-G, 1G5-G, 1G5, 184, 3Q4, 3Q5, 384, 6A4	A	8000	20	3	1 1/2	1 3/4	1 3/4	1	B
A-2928	1.40	Single 2A3, 6A3, 6B4, 6Y6, 25AC5, 25B6, 25N6, 25L6, 35A5, 35L6, 50L6, 48, 50B5, 35B5, 50A5	A	2000	60	5	2	1 3/4	2 3/4	1 1/4	A
A-2930	1.45	Single 6V6, 7C5, 12A, 12A5, 25A6, 25A7, 35A5, 35L6, 31, 45, 50, 59	A	5000	40	5	2	1 3/4	2 3/4	1 1/4	A
A-2935	3.00	PP 6L6	A	5000 c.t.	150	18	2 1/4	2	3 3/4	1 3/4	A
A-2931	1.45	Single 2A5, 6AC5, 6B5, 6F6, 6K6, 6N6, 7B5, 20, 31, 42, 47, 50, 6V5	A	7000	30	5	2	1 3/4	2 3/4	1 1/4	A
A-2932	1.45	Single 1C5, 1Q5, 3C5, 6A4, 6G6, 6N7, 6R7, 12A, 38, 41, 49, 3V4	A	10000	30	5	2	1 3/4	2 3/4	1 1/4	A
A-2938	2.10	Single 19, 1G6, 1J6 PP 1H4, 30, 49	B	10000 c.t.	40	5	2	1 3/4	2 3/4	1 1/4	A
A-2936	2.40	PP 6AC5 PP 6V6, 7C5	B AB1	10000 c.t.	75	10	2 3/4	1 3/4	2 3/4	1 1/4	A
A-2933	1.80	Single 1D8, 7B5, 6K6, 6G6	A	12000	10	5	2	1 3/4	2 3/4	1 1/4	A
A-2934	1.55	Single 1D8, 1F4, 1F5, 1J5, 1T5, 6V7, 12A7, 85	A	15000	10	5	2	1 3/4	2 3/4	1 1/4	A
A-2937	1.75	Single 1A5, 1N6, 6V7, 85 PP 1E7, 1J5, 6G6, 3A4, 3V4	A	25000 c.t.	10	5	2	1 3/4	2 3/4	1 1/4	A

## OUTPUT TRANSFORMER KITS

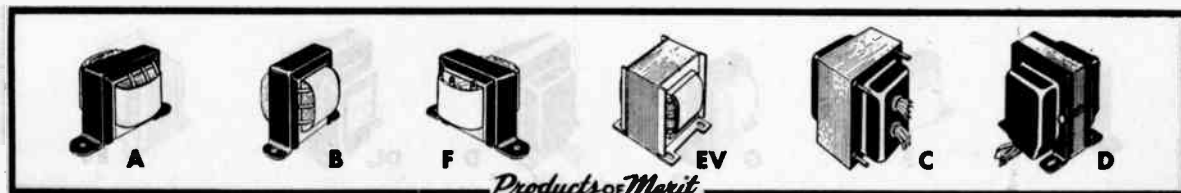
Kit No.	List Price	
Kit No. 1	\$12.85	(2 ea.) A-2928, (1 ea.) A-2930, A-2931, A-2932, A-2934, A-2936, A-2937
Kit No. 2	13.15	(2 ea.) A-2928, A-2937, (1 ea.) A-2930, A-2931, A-2934, A-2936
Kit No. 3	12.95	(1 ea.) A-2928, A-2930, A-2931, A-2932, A-2933, A-2934, A-2937, A-2938
Kit No. 4	14.00	(2 ea.) A-2928, A-2931, A-2936, A-2937

## FILTER TAPPED OUTPUT TRANSFORMERS Pri. has 3% and 6% Humbleucking Taps Sec. Impedance 3-4 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3031	\$1.75	Single 2A3, 6A3, 7A5, 25L6, 35A5, 35B5, 35L6, 45, 50B5, 50L6	A	3000	50	5	2	1 3/4	2 3/4	1 1/4	A
A-3032	1.75	Single 6V6, 6B5, 7C5, 6F6	A	6000	40	5	2	1 3/4	2 3/4	1 1/4	A

★ Indicates TV Replacements.

All prices subject to trade discount, and change without notice.



Products of Merit



# TRANSFORMERS

## SPECIAL OUTPUT TRANSFORMERS To Couple Push Pull Plates to Line or Voice Coil Sec. Impedance 2-4-8-15-250-500 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A. per Side	Max. Watts	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-3027	\$5.50	PP2A5, 6V6, 7C5, 19, 6F8 PPIH4G, 1J6, 6AC5, 49	A AB <sub>1</sub>	10000 c.t.	45	15	2 <sup>11</sup> / <sub>16</sub>	2	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	F
A-3028	6.25	PP6L6 PP2A3	B A <sub>1</sub> AB <sub>1</sub>	5000 c.t.	70	20	3 <sup>1</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>16</sub>	2	F

## VERTICAL OUTPUT TRANSFORMER

Type No.	List Price	Turns Ratio Primary to Secondary	Mtg. Centers	Dimensions			Mtg. Type
				H.	W.	D.	
★A-3035	\$5.25	10:1	1 <sup>11</sup> / <sub>16</sub> x 2	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	EV
★A-3036	3.60	10:1	2 <sup>1</sup> / <sub>16</sub>	2	3 <sup>1</sup> / <sub>4</sub>	2	A
★A-3037	3.40	11.4:1	2 <sup>1</sup> / <sub>16</sub>	2	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	A
★A-3038	4.65	10:1	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	A
★A-3039	4.50	18:1	3 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>4</sub>	A

## BLOCKING OSCILLATOR TRANSFORMER

Type No.	List Price	Turns Ratio Primary to Secondary	Mtg. Centers	Dimensions			Mtg. Type
				H.	W.	D.	
★A-3000 Vertical	\$2.00	1:4.2	2	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	A
★A-3002 Horizontal	2.25	2:1	2	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	A

## DUAL PRIMARY OUTPUT TRANSFORMERS For Use with AC-DC Battery Portable Receivers—Sec. Impedance 3-4 ohms

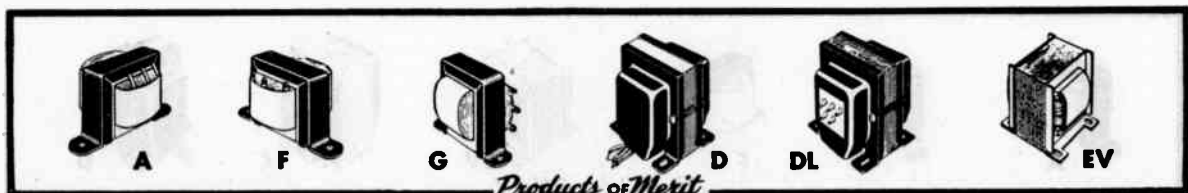
Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max. Watts	Mtg. Centers	H.	W.	D.	Mtg.
A-3029	\$1.75	Single 25AC5, 25B6, 25L6, 25N6, 35A5, 35B5, 35L6, 50A5, 50B5, 50L6 OR	A	2000 or 6000	60 or 10	5	2	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	A
A-3030	1.75	Single 184, 1Q5, 3Q4, 3Q5, 3V4 Single 25AC5, 25B6, 25L6, 25N6, 35A5, 35L6, 50A5, 50B5, 50L6 OR Single 184, 1Q5, 3Q4, 3Q5, 3V4	A	2000 or 10000	60 or 10	5	2	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	A

## UNIVERSAL OUTPUT TRANSFORMERS To Provide Correct Coupling Between a Variety of Output Tubes and Any Speaker Voice Coil

Type No.	List Price	Tube	Ohms Impedance Pri.	Sec.	Pri. M.A.	Max. Watts	Mtg. Centers	H.	W.	D.	Mtg.
A-2900	\$2.40	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	35	4	2	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	F
A-2901	2.55	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	40	8	2 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	F
A-2902	2.50	Single	1500-2000-4000-5000-7000-10000	.1 to 40	55	10	2 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	F
A-2903	2.00	Single	2000-4500-7000-10000	.1 to 3.2	30	4	2	1 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	F
A-2904	3.25	Single or Push-pull	4000-7000-8000-10000-14000 c.t.	.17 to 32	40	18	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	G
A-2905	4.25	Single or Push-pull	3000-5000-7000-8000-10000 c.t.	.17 to 32	70	24	3 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	F
A-2988	2.00	Single	3500-5000-7000-10000	3.2	35	8	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	F
A-2999	2.00	Single	12000-15000-18000-25000	3.2	10	3	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	F

★Indicates TV Replacements.

All prices subject to trade discount, and change without notice.





# TRANSFORMERS

## HEAVY DUTY OUTPUT TRANSFORMERS High Level Type to Couple to Line or Speaker. Sec. Impedance: 4-8-15-250-500 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A. per Side	Max. Watts	H.	W.	D.	Mtg.
A-3127	\$5.00	Single 6L6, 2A3, 6A3, 6Y6	A	2500	80	8	3 1/8	2 5/8	2 1/2	D
A-3128	8.00	PP6V6, 6F6	AB <sub>1</sub>	8000 c.t.*	50	14	3 1/2	2 15/16	3 1/8	D
A-3129	8.00	PP6L6	AB <sub>1</sub>	4300 c.t.*	95	25	3 1/2	2 15/16	3 1/8	D
A-3130	8.75	PP6L6	AB <sub>1</sub>	6600 c.t.*	80	34	3 1/8	3 3/8	3 3/8	D
A-3131	7.00	PP6L6, 6Y6, PP2A3, 6A3, 6B4, 45, PP6N7, 46	A AB B	5000 c.t.	80	30	3 1/2	2 15/16	3 1/8	D
A-3132	7.00	PP6F6, 2A5, 7C5, Single 6N7, 6A6	AB <sub>2</sub> B	10000 c.t.	40	25	3 1/2	2 15/16	3 1/8	D
A-3133	11.50	P.P. Par. 6L6, P.P. 807	AB <sub>1</sub>	3300 c.t.	240	55	4 3/4	3 15/16	4	D†

\* 10% Feedback Winding. † Mtg. Centers 3 x 2 15/16.

## UNIVERSAL LINE TRANSFORMERS To Couple Various Line Impedances to a Voice Coil

Type No.	List Price	Ohms Impedance		Watts	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2906	\$2.25	500-1000-1500-2000	3.2, 6-8	10	2 1/4	1 1/4	2 15/16	1 1/4	F
A-2907	3.75	500-1000-1500-2000	3.2, 6-8	18	2 1/4	2 1/4	2 1/4	1 1/4	G
A-2908	4.00	500-1000-1500-2000	6-8, 16	24	3 1/4	2 1/4	3 1/4	2 1/8	F
A-2909	2.25	45-50	3.2, 6-8	8	2	1 1/4	2 15/16	1 1/4	G
A-3005	1.75	500	3.2, 6-8	5	2	1 1/4	2 1/4	1 1/4	A

For Use With Constant 70.7V. Line as Recommended by the RMA. Rated Power is Furnished on Lowest Tap. Other Taps Provide Reduction in Power in Steps of 3DB.

A-3014	\$2.75	500-1000-2000-4000-8000	4-8-16	10	2 1/4	1 1/4	2 15/16	1 1/4	F
A-3015	4.25	275-550-1100-2200-4400-8800	4-8-16	18	2 1/4	2 1/4	2 1/4	1 1/4	G
A-3016	4.75	210-420-840-1680-3360-6720	4-8-16	24	3 1/4	2 1/4	3 1/4	2 1/8	F

## TUBE TO LINE TRANSFORMERS For Coupling Single or Push-Pull Plates to Line or Mixer

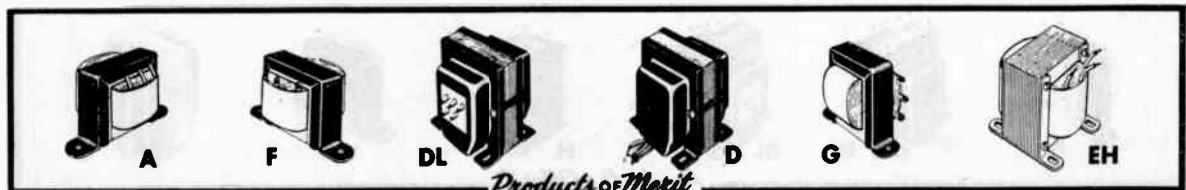
Type No.	List Price	Ohms Impedance		Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2925	\$3.75	20000 c.t.	500/125	10	2 15/16	2	3 1/4	1 1/4	A
A-2926	3.75	20000 c.t.	200/50	10	2 15/16	2	3 1/4	1 1/4	A
†A-3023	4.25	5000-10000-20000 c.t.	500/333/200/125/50	15	2 15/16	2	3 1/4	1 1/4	F
†A-3024	9.00	5000-10000-20000 c.t.	500/333/200/125/50	50	2x1 15/16	3 1/4	2 1/4	2 1/4	DL

†20,000 ohm only center tapped.

## INPUT TRANSFORMERS For Coupling Microphone or Line to Single or Push-Pull Grids

Type No.	List Price	Ohms Impedance		Turns Ratio	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.			H.	W.	D.	
A-2923	\$2.25	3.2	50000	1:125	2	1 1/4	2 1/4	1 1/4	A
A-2918	3.50	100	400000 c.t.	1:64	2 15/16	2	3 1/4	1 1/4	A
A-2919	3.25	200/50	100000	1:22	2 15/16	2	3 1/4	1 1/4	A
A-2924	3.75	500/125	100000 c.t.	1:14	2 15/16	2	3 1/4	1 1/4	A

All prices subject to trade discount, and change without notice.



Products of Merit





# TRANSFORMERS

## INTERSTAGE TRANSFORMERS To Couple a Single Plate to a Single Grid

Type No.	List Price	Ohms Impedance		Turns Ratio	Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
		Pri.	Sec.				H.	W.	D.	
A-2910	\$2.00	10000	90000	3:1	10	2	1 3/8	2 3/8	1 1/8	A
A-2911	2.25	10000	90000	3:1	10	2 3/8	1 3/8	2 3/8	1 3/8	A

### To Couple a Single Plate to Push-Pull Grids

A-2914	2.25	10000	90000 c.t.	3:1	10	2	1 3/8	2 3/8	1 1/8	A
A-2915	2.50	10000	90000 c.t.	3:1	10	2 3/8	1 3/8	2 3/8	1 3/8	A
A-2916	3.00	10000	90000 c.t.	3:1	10	2 3/8	2	3 1/8	1 3/8	A

### To Couple Push-Pull Plates to Push-Pull Grids

A-2912	3.50	10000 c.t.	90000*	3:1	10 per side	2 3/8	2	3 1/8	1 3/8	A
A-2913	3.00	20000 c.t.	20000 c.t.	1:1	10 per side	2 3/8	1 3/8	2 3/8	1 3/8	A
A-2917	3.50	20000 c.t.	45000 c.t.	1.5:1	10 per side	2 3/8	2	3 1/8	1 3/8	A

\*Split secondary.

## DRIVER TRANSFORMERS To Couple Driver Plate to Amplifier Grids

Type No.	List Price	Driver	Output	Ratio, Pri. to 1/2 Sec.	Class	Pri. M.A.	Mtg. Centers	Dimensions			Mtg.
								H.	W.	D.	
A-2920	\$2.50	6C5, 1H4, 30, 49	Single 1J6, 19, Push-pull 30, 49	2.5:1	B	10	2 3/8	1 3/8	2 3/8	1 1/8	A
A-2921	3.50	6F8, 2A5, 42	PP6F8, 2A5, 6L6	1.7:1, 1.5:1, 1.3:1	AB	35	2 3/8	2	3 1/8	1 3/8	A
A-2922	4.00	6A6, 6C5, 6N7, 46	Single 6A6, 6N7, Push-pull 46	5:1, 4:1, 3:1, 2.5:1	B	20	2 3/8	2	3 3/8	1 3/8	A
A-3120	10.50	500 ohm line	Class B Grids 15 Watt Capacity	1:1.75, 1:1.85, 1:1, 1:1.25, 1:1.45, 1:1.75, 1:2, 1:2.25, 1:2.5, 1:2.75, 1:3	B	-----	2 3/8 x 2	3 3/8	2 3/8	3 3/8	DL
A-3121	12.00	500 ohm line	Class B Grids 30 Watt Capacity		B	-----	2 3/8 x 2 3/8	3 3/8	3	3 3/8	DL
A-3123	5.00	PP6A6, 53, PP6C5, 6N7, 6J5	PP6N7, 6A6, 53, PP6L6, T21	5:1*	B AB <sub>2</sub>	15	2 x 1 1/8	3 3/8	2 3/8	2 3/8	D
A-3124	5.00	6F8, 46, 59, 2A5, 42	PP46, 59, PP6L6, 807	2.2:1	B AB <sub>2</sub>	30	2 x 1 1/8	3 3/8	2 3/8	2 3/8	D
A-3125	7.00	6F8, 2A5, 47, 42, PP2A3, 6L6	PP6L6	1.4:1*	B AB <sub>2</sub>	40	2 3/8 x 2	3 3/8	2 3/8	3 3/8	D
A-3126	5.75	45, 6V6, 6F8	PP800, 203A, 811, 812, 812A, RK18, RK58, T20, TZ40, T55, 807, 809, 838, 845, 35, 100TH	2:1	B	40	2 x 1 1/8	3 3/8	2 3/8	2 3/8	D

\*Split secondary.

## MODULATION TRANSFORMERS For Specific Applications

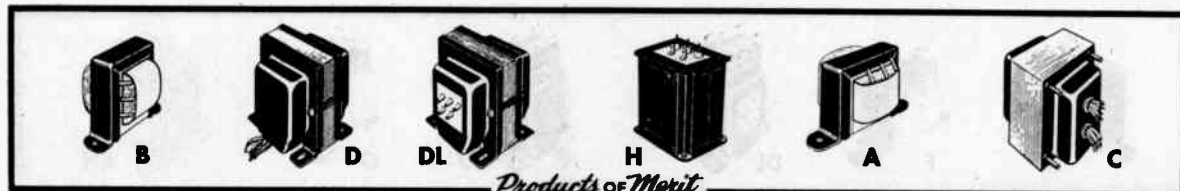
Type No.	List Price	Output Tubes	Ohms Impedance		Max. M.A.		Watts	Dimensions			Mtg.
			Pri.	Sec.	Pri.	Sec.		H.	W.	D.	
A-3008	\$3.00	PP6AQ5, 6V6, 6F6, Single 6A6, 6N7, 53	10000 c.t.	4000-5000	70	60	10	2 3/8	2 3/8	2 3/8	B
A-3109	7.00	PP2A3, 6A3, 6B4, 6L6, 45, 46, 59	6000 c.t. 3800 c.t. 3000 c.t.	7500-10000 12000 5000-3000	80	100	25	3 3/8	2 3/8	2 3/8	D
A-3110	12.00	PP6L6, 807, RK41, HY56, HY61, HK24	6800-3800 c.t.	12000 4000-5000 7500-10000	175	150	60	4 3/8	3 3/8	3 3/8	D
A-3113	18.00	PP 800, 809, TZ-40, T-55, HK-54, RK-31, HY-40, 811, 807, 812	15000-8900 c.t.	12000 3000-4000 5000-6000	250	300	175	4 3/8	3 3/8	5 3/8	D

## UNIVERSAL MODULATION TRANSFORMERS Tapped Series-Parallel Coils Provide a Wide Range of Modulation Ratios

Type No.	List Price	Pri. Impedance	Pri. M.A. per Side	Sec. Impedance	Max. Sec. M.A. †	Watts	Dimensions			Mtg.
							H.	W.	D.	
A-3104	\$8.75	2000-20000	50	2000-20000	50/100	15	3 3/8	2 3/8	2 3/8	DL
A-3105	13.00	2000-20000	150	2000-20000	150/300	60	3 3/8	3 3/8	4 3/8	DL
A-3106	18.50	2000-20000	220	2000-20000	220/440	125	4 3/8	3 3/8	4 3/8	DL
A-4007	52.00	2000-20000	250	2000-20000	250/500	300	7 3/8	6 3/8	5 3/8	H
A-4008	54.00	2000-20000	325	2000-20000	325/650 †	500	8 3/8	7 3/8	7	H

†Series/Parallel

All prices subject to trade discount, and change without notice.



Products of Merit



# TRANSFORMERS

**POWER TRANSFORMERS Receiver Replacement Type Primary for 115 V., 60 Cy. Leads R.M.A. Color Coded—Mtg. Fig. C**

Type No.	List Price	H. V. Secondary		Rectifier		Fil. Wdgs.		Mtg. Centers	Dimensions		
		Volts	DC.M.A.	Volts	Amp.	Volts	Amp.		H.	W.	D.
*P-3045	\$3.75	120	50			6.3	1.5	3 1/4	2 1/4	2 1/4	1 1/4
P-3047	4.50	240-240	50			6.3	2.5	2 x 2 1/4	2 1/4	3	2
P-3048	5.50	260-260	90			6.3	3.5	2 x 2 1/4	2 1/4	3	2 1/2
P-2949	4.90	240-240	40	5	2	6.3 c.t.	2	2 x 2 1/4	2 1/4	3	2 1/2
P-2965	5.25	325-325	40	5	2	2.5 c.t.	4	2 x 2 1/4	2 1/4	3	2 1/2
P-2966	7.25	350-350	70	5	3	2.5 c.t.	9	2 1/4 x 2 1/4	2 1/4	3 1/4	3 1/4
P-2967	8.00	350-350	90	5	3	2.5 c.t.	12.5	2 1/4 x 3 1/4	3 1/4	3 1/4	4 1/4
P-2968	10.50	400-400	110	5	3	2.5 c.t.	15	3 x 3 1/4	3 1/4	4 1/2	3 1/4
P-2950	5.15	325-325	40	5	2	6.3 c.t.	2	2 x 2 1/4	2 1/4	3	2 1/2
P-2951	6.25	325-325	70	5	3	6.3 c.t.	3.5	2 x 2 1/4	2 1/4	3	3 1/4
P-2952	6.75	350-350	90	5	3	6.3 c.t.	3.5	2 1/4 x 2 1/4	2 1/4	3 1/4	3 1/4
P-2953	7.65	350-350	120	5	3	6.3 c.t.	4.7	2 1/4 x 3 1/4	3 1/4	3 1/4	3 1/4
P-2954	9.75	375-375	150	5	3	6.3 c.t.	5	2 1/4 x 3 1/4	3 1/4	3 1/4	3 1/4
P-2955	12.00	400-400	200	5	3	6.3 c.t.	5	3 x 3 1/4	3 1/4	4 1/2	4 1/4
P-2956	14.50	435-435	250	5	3	6.3 c.t.	3	3 x 3 1/4	3 1/4	4 1/2	4 1/4
P-2957	6.00	(80-volt Bias Tap) 350-350	50	2.5	10	6.3 or 5	3		2 1/4	3 1/4	3
P-2958	5.00	240-240	50	5	2	6.3 c.t.	2.6	2 1/4 x 2 1/4	2 1/4	3	3
P-3051	6.50	260-260	70	5	2	6.3	3	2 x 2 1/4	2 1/4	3	3
P-3052	7.25	280-280	90	5	2	6.3	5	2 1/4 x 2 1/4	2 1/4	3 1/4	3 1/4
★P-3059	20.50	360-360	250	5	2	6.3	.6	3 x 3 1/4	3 1/4	4 1/2	5 1/4
★P-3061	25.00	362-362	295	5	6	6.3	8	3 1/4 x 4 1/4	6 1/4	3 1/4	4 1/4
★P-3063	20.00	360-360	250	5	3	6.3	9	3 1/4 x 4 1/4	5 1/4	3 1/4	4 1/4
★P-3066	23.50	†(375-375) (325-325)	170	5	3	12.6 c.t.	5	3 x 3 1/4	3 1/4	4 1/2	5 1/4
★P-3067	23.50	†(400-400) (212-212)	220	5	3	6.3	10		3 1/4	4 1/2	5 1/4
			90	5	3	6.3	2.6	3 x 3 1/4	3 1/4	4 1/2	5 1/4
				5	2						

\*For use with Half Wave Rectifier Type A Mtg.

†Max. M.A. High Tap Only  
Max. M.A. Low Tap Only

P-3066 320  
P-3067 340

## Fully Shielded Upright Mounting Type—Mtg. Fig. D

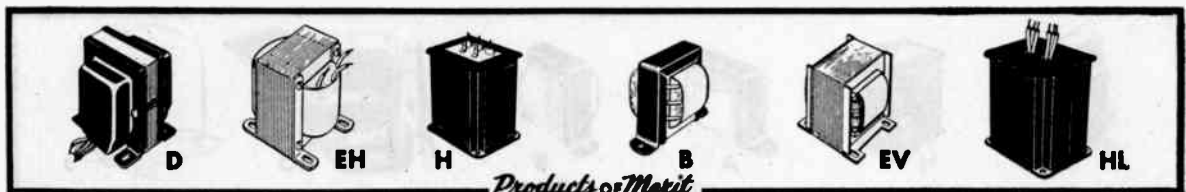
P-3147	\$4.50	240-240	50			6.3	2.5	2 x 1 1/4	3 1/4	2 1/4	2 1/4
P-3148	5.50	260-260	90			6.3	3.5	2 x 2 1/4	3 1/4	2 1/4	3 1/4
P-3149	4.90	240-240	40	5	2	6.3 c.t.	2	2 x 1 1/4	3 1/4	2 1/4	2 1/4
P-3150	5.15	325-325	40	5	2	6.3 c.t.	2	2 x 1 1/4	3 1/4	2 1/4	2 1/4
P-3154	5.00	275-275	50	5	2	6.3	2.6	2 x 2 1/4	3 1/4	2 1/4	3 1/4
P-3160	6.00	350-350	50	5	2	6.3 c.t.	2.6	2 1/4 x 1 1/4	3 1/4	2 1/4	3 1/4
P-3151	6.25	325-325	70	5	3	6.3 c.t.	3.5	2 1/4 x 1 1/4	3 1/4	3 1/4	3 1/4
P-3152	6.75	350-350	90	5	3	6.3 c.t.	3.5	2 1/4 x 2 1/4	4 1/4	3 1/4	3 1/4
P-3153	7.65	350-350	110	5	3	6.3 c.t.	4.5	3 x 2 1/4	4 1/4	3 1/4	3 1/4
P-3173	9.75	350-350	150	5	3	6.3	6.5	2 1/4 x 2 1/4	3 1/4	3 1/4	4 1/4
P-3155	12.00	400-400	200	5	3	6.3 c.t.	5	3 x 3 1/4	4 1/4	3 1/4	4 1/4
P-3156	14.50	435-435	250	5	3	6.3 c.t.	3	3 x 3 1/4	4 1/4	3 1/4	4 1/4
★P-3165	14.75	(80-volt Bias Tap) 350-350	200	2.5	10	6.3 or 5	3		4 1/4	3 1/4	5
★P-3166	24.75	400-400	300	5	3	6.3	7	3 x 3 1/4	4 1/4	3 1/4	5
★P-3169	22.00	†(390-390) (325-325)	160	5	3	6.3	8	3 x 3 1/4	4 1/4	3 1/4	4 1/4
			130	5	3	6.3	4				
P-3169				5	2						
★P-3170	8.75	1750	2	2.5	2	6.3	.9	2 x 1 1/4	3 1/4	2 1/4	2 1/4
★P-3171	11.50	2500	5	2.5	2	or 2.5	2				
						6.3	3	2 1/4 x 2 1/4	3 1/4	3 1/4	3 1/4
★P-3174	34.00	†(405-405) (325-325)	240	5	3	or 2.5	3				
			200	5	3	6.3	6	3 1/4 x 3 1/4	5 1/4	4 1/4	5 1/4
				5	3	6.3	6				
				5	3	6.3	2.6				

★Indicates TV Replacement.

†Max. M.A. High Tap Only  
Max. M.A. Low Tap Only

P-3169 270  
P-3174 400  
430

All prices subject to trade discount, and change without notice.



Products of Merit



# TRANSFORMERS

**PLATE TRANSFORMERS** For Small Transmitters. DC Voltage Ratings are Approx. Values Obtained at Output of a 2 Section Choke Input Filter Using Mercury Vapor Rectifier Tubes. Pri. is for 115 V. 60 cy.

Type No.	List Price	Sec. Rms. Volts	Sec. DC Volts	DC Sec. M.A.	Dimensions			Mtg.
					H.	W.	D.	
P-3157	\$11.50	660-660 †	500	250	4 1/4	3 1/4	4 1/4	D
		550-550	400					
P-3158	14.00	1080-1080	1000 †	125	4 1/4	3 1/4	5	D
		500-500	400	150				
P-3159	13.50	900-900	750	225	4 1/4	3 1/4	5 1/4	D
		800-800	600					
P-3167	33.75	1450-1450	1200	300	5 1/4	6 1/4	4	EH
		1175-1175	1000					
P-3168	42.50	2100-2100	1750	300	5 1/4	6 1/4	4 1/4	EH
		1800-1800	1500					
P-3175	5.40	550-550	400	150	3 1/4	3	3 1/4	D
P-4062	63.00	2900-2900	2500	500	8 1/2	6 1/2	5 1/2	H
		2385-2385	2000					
P-4063	66.00	3000-3000	2500	550	11 1/4	7 1/4	7	H
		2500-2500	2000					

†For dual operation with simultaneous use of both sec. ratings.

†Has 40-volt bias tap.

**FILAMENT TRANSFORMERS** For Amplifier, Amateur, Industrial Use. Pri.: 115 Volts, 60 Cycles

Type No.	List Price	Sec. Volts	Sec. Amp.	Insulation Volts	Dimensions			Mtg.
					H.	W.	D.	
P-2939	\$3.25	2.5 c.t.	5	2500	2	3 1/4	1 1/4	A
P-2940	4.75	2.5 c.t.	10	7500	3	3 1/4	2 1/4	B
P-3042	5.25	2.5 c.t.	10	10000	2 3/4	3 1/4	2 1/4	EH
P-2940	3.50	5 c.t.	3	2500	2	3 1/4	2 1/4	A
P-2941	4.00	5 c.t.	6	2500	2 1/4	3 1/4	1 3/4	A
P-2942	5.75	5 c.t.	12	2500	3 1/4	2 1/4	2 3/4	EV
P-2943	9.00	5 c.t.	20	2500	3 1/4	3 1/4	3	EV
P-2944	2.25	6.3 c.t.	1	2500	1 1/4	2 1/4	1 1/4	A
P-2945	2.75	6.3 c.t.	2	2500	2	3 1/4	1 1/4	A
P-2946	3.25	6.3 c.t.	3	2500	3	3 1/4	1 1/4	B
P-2947	4.75	6.3 c.t.	6	2500	3	3 1/4	2 1/4	B
P-2948	6.25	6.3 c.t.	10	2500	3 1/4	2 1/4	2 1/4	EV
P-2960	4.00	7.5 c.t.	4	2500	2 3/4	3 1/4	1 1/4	B
P-2961	5.75	6.3 c.t.	3	2500	3	3 1/4	2 1/4	B
		6.3 c.t.	3					
P-3041	5.75	6.3 c.t.	3.6	2500	2 1/4	4	2 1/4	A
		5 c.t.	3					
P-3143	7.00	7.5 c.t.	8	2500	3 1/4	2 1/4	3 1/4	D
P-3145	7.00	10 c.t.	8	2500	3 1/4	2 1/4	3	D
P-3146	8.50	10 c.t.	10	3000	3 1/4	3 1/4	3 1/4	D

**VIBRATOR TRANSFORMERS** For Operation From 6V Battery and Vibrator

Type No.	List Price	Sec. DC Volts to Filter	Sec. M.A.	Dimensions			Mtg.
				H.	W.	D.	
P-2969	\$4.25	150	40	2 1/4	2 3/4	1 1/4	B
P-2970	4.75	225	40	2 5/8	3 1/4	2 1/4	B
P-2971	5.00	250	50	2 5/8	3 1/4	2 1/4	B
P-2972	5.75	280	60	3	3 5/8	2 1/4	B
P-3068	4.50	280	60	2 1/4	2 5/4	1 1/4	C
P-4073	9.00	285	75	3 1/4	3 1/4	2 1/4	HL
P-4074	9.50	330	100	3 3/4	3 1/4	2 1/4	HL

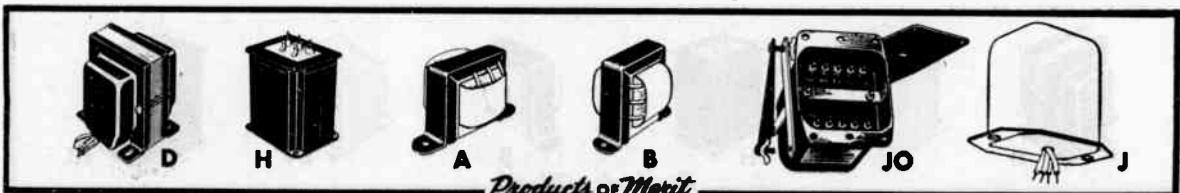
**AC-DC VIBRATOR TRANSFORMER** For Operation from 6 V. Battery and Vibrator or 115 V. 60 cy. Line

Type No.	List Price	H.V. Secondary		Filament		Dimensions			Mtg.
		DC Volts	MA	Volts	Amps	H.	W.	D.	
P-3176	\$12.50	300	160	6.3	4.5	4 1/4	3 1/4	4 1/4	D
P-4075	11.50	330	100	6.3	4	3 1/4	4 1/4	3	HL

**PHOTO-FLASH POWER TRANSFORMER** Primary for 117 V. 60 Cy. Line or 4 V. Battery Vibrator (or Charger Winding)

Type No.	List Price	Secondary		Mtg. Centers	Dimensions			Mtg.
		AC Volts	DC M.A.		H.	W.	D.	
P-3065	\$6.50	1100	1.5	2 1/4	2 3/4	3 1/4	2	B

All prices subject to trade discount, and change without notice.



Products of Merit



# TRANSFORMERS

**STEP-DOWN AUTOTRANSFORMERS** Input 220-250 V. 60 cy. Output 110-125 V. Pri. Cord and Plug. Sec. Receptacle.

Type No.	List Price	Output Watts	Dimensions			Mtg.
			H.	W.	D.	
P-3161	\$8.00	80	3 1/2	2 1/4	3	D
P-3162	10.75	150	3 1/2	3 1/4	3 1/2	D
P-3163	13.75	250	4 1/2	3 1/2	4	D
P-3164	17.75	500	4 1/2	3 1/2	4 1/2	D
P-4065	41.00	1000	7 1/2	6 1/2	5 1/2	H

**REPLACEMENT TYPE FILTER CHOKES** Inductance Ratings are at 10 V. 60 cy. with Rated Current Flowing as Recommended by the R.M.A.

Type No.	List Price	Inductance Henries	Current Rating M.A.	DC Res. Ohms	Volts Insul.	Mtg. Centers	Dimensions			Mtg.
							H.	W.	D.	
★C-2973	\$1.25	1.5	10	95	1500	1 3/4	1 1/4	1	A	
C-2974	3.25	2.0	200	50	1500	2 1/4	2	1 1/2	A	
C-2977	1.75	4.5	50	200	1500	2 1/4	1 3/4	1 1/2	A	
C-2975	1.50	5.5	50	330	1500	2	1 1/2	1 1/2	A	
C-2976	1.50	8	40	500	1500	2	1 1/2	1 1/2	A	
C-2981	1.75	8.5	50	400	1500	2 1/4	1 1/2	1 1/2	A	
CC-2985	1.75	20	15	900	1500	2 1/4	1 1/2	1 1/2	A	
CC-2987	2.00	16	50	550	1500	2 1/4	2	1 1/2	A	
CC-2990	2.75	15	75	400	1500	3 1/4	2 1/4	2 1/2	A	
★C-2991	2.75	2	250	53	2000	3 1/4	2 1/4	2 1/2	A	
★C-2993	3.50	10.5	110	220	1500	3 1/4	2 1/4	2 1/2	A	
★C-2994	1.70	1.5	200	90	1500	2 1/4	1 1/2	1 1/2	A	
★C-2995	2.30	8.0	100	375	1500	2 1/4	2	1 1/2	A	
★C-2996	2.80	1.0	300	60	1500	3 1/4	2 1/4	2	A	

**FILTER CHOKES** For Small Transmitter and Amplifier Applications

Type No.	List Price	Inductance Henries	Current Rating M.A.	DC Res. Ohms	Volts Insul.	Dimensions			Mtg.
						H.	W.	D.	
C-3192	\$4.00	15	85	325	1500	3 1/4	2 1/4	2 1/4	D
C-3193	4.00	10	110	200	1500	3 1/4	2 1/4	2 1/4	D
C-3194	5.00	12	150	230	1500	3 1/4	2 1/4	2 1/4	D
C-3195	7.00	15	150	180	2000	3 1/4	3 1/4	3 1/4	D
C-3196	6.00	5	200	80	1500	3 1/2	2 1/4	3 1/4	D

**FILTER SMOOTHING CHOKES** For Transmitter Power Supplies

C-3180	\$5.25	10	150	210	3000	3 1/4	2 1/4	2 1/4	D
C-3181	6.50	10	200	140	3000	3 1/4	2 1/4	3 1/2	D
C-3182	9.00	10	250	125	3000	3 1/4	3 1/4	3 1/4	D
C-3183	9.50	8	300	80	3000	3 1/4	3 1/4	3 1/4	D

**FILTER INPUT OR SWINGING CHOKES**

C-3187	\$5.25	4-16	150	210	3000	3 1/4	2 1/4	2 1/4	D
C-3188	6.50	4-16	200	140	3000	3 1/4	2 1/4	3 1/2	D
C-3189	9.00	4-16	250	125	3000	3 1/4	3 1/4	3 1/4	D
C-3190	9.50	3-14	300	80	3000	3 1/4	3 1/4	3 1/4	D

**ISOLATION TRANSFORMERS** To Provide Isolation Between Line and Associated Circuits. Primary for 50-60 Cy. Static Shielding Between Primary and Secondary.

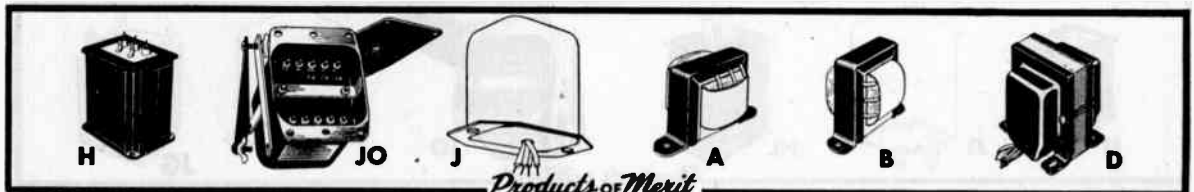
Type No.	List Price	Primary Volts	Secondary Volts	Watts	Dimensions			Mtg.
					H.	W.	D.	
P-3096	\$5.75	117	117	40	3 1/4	2 1/4	2 1/4	B
P-3197	8.50	117	117	80	3 1/2	3 1/4	3 1/2	D

**ISOLATION TRANSFORMERS** Equipped with Line Cord and Standard Receptical

Type No.	List Price	Primary Volts	Secondary Volts	Watts	Dimensions			Mtg.
					H.	W.	D.	
P-3172	\$41.00	117	117	500	5 1/4	4 3/4	6 1/4	D
P-3198	15.50	117	117	100	4 1/4	3 1/4	3 1/2	D
P-3199	29.50	117	117	250	4 3/4	3 1/4	4 1/2	D

★ Indicates TV Replacement.

All prices subject to trade discount, and change without notice.



Products of Merit



# TRANSFORMERS

## HEAVY DUTY OUTPUT TRANSFORMERS High Level Type to Couple to Line or Voice Coil. Sec. Impedance 4-8-15-250-500 Ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. Ma. per Side	Max. Watts	H.	W.	D.	Mtg.
A-4027	\$9.00	Single 6L6, 2A3, 6A3, 6Y6	A	2500	80	8	3 1/8	3 1/8	2 1/8	H
A-4028	12.00	PP6V6, 6F6	AB <sub>1</sub>	8000 C.T.*	50	14	3 1/8	4 1/2	3	H
A-4029	12.00	PP6L6	AB <sub>1</sub>	4300 C.T.*	95	25	3 1/8	4 1/2	3	H
A-4030	13.00	PP6L6	AB <sub>1</sub>	6600 C.T.*	80	34	3 1/8	4 1/2	3	H
A-4031	11.00	PP6L6, 6Y6, PP2A3 6A3, 6B4, 45, PP6N7, 45	A AB B	5000 C.T.	80	30	3 1/8	4 1/2	3	H
A-4032	11.50	PP6F6, 2A5, 7C5 Single 6N7, 6A6	A AB <sub>2</sub> B	10000 C.T.	40*	25	3 1/8	4 1/2	3	H
A-4033	16.50	P. P. Par. 6L6, PP807	AB <sub>1</sub>	3300 C.T.	240	55	5	5	3 3/8	H

\*10% Feedback Winding.

## OUTDOOR TYPE UNIVERSAL LINE TRANSFORMER To Couple Various Line Impedances to a Voice Coil Universal Mounting Bracket

Type No.	List Price	Ohms Impedance		Watts	Mtg. Center Case	Dimensions			Mtg. Type
		Primary	Sec.			H.	W.	D.	
A-4040	\$8.75	250-500-1000-1500-2000	4-8-16	8	2 3/8 x 3 3/8	4 1/4	4 1/8	3 3/8	JO
A-4041	9.75	250-500-1000-1500-2000	4-8-16	12	2 3/8 x 3 3/8	4 1/4	4 1/8	3 3/8	JO
A-4042	13.75	250-500-1000-1500-2000	4-8-16	25	2 3/8 x 3 3/8	4 1/4	4 1/8	3 3/8	JO
A-4043	9.75	45-50	4-8	12	2 3/8 x 3 3/8	4 1/4	4 1/8	3 3/8	JO

## DRIVER TRANSFORMERS To Couple Driver Plates to Amplifier Grids

Type No.	List Price	Driver Tube	Output Tube	Turn Ratio Pri. to 1/2 Sec.	Class	Pri. M.A.	H.	W.	D.	Mtg.
A-4020	\$5.50	6C5, 30, 49, 1H4	Single 1J6, 19, PP30, 49	2.5:1	B	10	2 1/8	2 1/8	2	H
A-4021	6.50	6F6, 42, 2A5	PP6F6, 6L6	1.7:1, 1.5:1, 1.3:1	AB	35	2 1/8	2 1/8	2	H
A-4022	7.00	6A6, 6C5, 6N7, 46	Single 6A6, 6N7, PP46	5:1, 4:1, 3:1	B	20	2 1/8	2 1/8	2	H
A-4023	8.50	PP6A6, 53	PP6N7, 6A6, 53	2.5:1*	B	15	3 3/8	3 1/8	2 1/8	H
A-4024	8.00	PP6AC5, 6J5, 6N7, 46, 6F6, 59, 2A5, 42	PP6L6, T21 PP46, 59 PP6L6, 807	2.2:1	AB <sub>2</sub> B	30	3 3/8	3 1/8	2 1/8	H
A-4025	11.50	6F6, 2A5, 47, 42	PP6L6	1.4:1*	AB <sub>2</sub>	40	3 3/8	4 1/8	3	H
A-4026	10.00	PP2A3, 6L6, 45, 6V6, 6F6	PP800, 203A, 811, 812, RK18, RK58, T20, TZ40, T55, 812A, 807, 809, 838, 845, 35, 100TH	2:1	AB <sub>2</sub> B	40	3 3/8	3 1/8	2 1/8	H
A-4046	14.00	Line to Grid	Class B Grids 15 watt capacity	1:1.75, 1:85, 1:1, 1:1.25, 1:1.45, 1:1.75	B		3 3/8	4 1/8	3	H
A-4047	16.00	Line to Grid	Class B Grids 30 watt capacity	1:2, 1:2.25, 1:2.5, 1:2.75, 1:3	B		3 3/8	4 1/8	3	H

\*Split Secondary

## BLOCKING OSCILLATOR TRANSFORMER

Type No.	List Price	Turns Ratio Primary to Secondary	Mtg. Centers	H.	W.	D.	Mtg. Type
★A-4000 Vertical	\$2.75	1:4.2	1 1/8	1 1/2	2 1/8	1 1/2	J
★A-4002 Horizontal	3.00	2:1	1 1/8	1 1/2	2 1/8	1 1/2	J

★Indicates TV Replacements.

## UNIVERSAL MODULATION TRANSFORMER Tapped Series-Parallel Coils Provide a Wide Range of Modulation Ratios

Type No.	List Price	Pri. Impedance	Pri. M.A. per Side	Sec. Impedance	Max. Sec. M.A.†	Watts	H.	W.	D.	Mtg.
A-4004	\$11.00	2000-20000	50	2000-20000	50/100	15	3 3/8	3 1/8	2 1/8	H
A-4005	17.50	2000-20000	150	2000-20000	150/300	60	5	5	3 3/8	H
A-4006	25.50	2000-20000	220	2000-20000	220/440	125	5	5	5 1/8	H
A-4007	52.00	2000-20000	250	2000-20000	250/500	300	7 1/2	6 3/8	5 5/8	H
A-4008	54.00	2000-20000	325	2000-20000	500	325/650†	8 3/4	7 1/2	7	H

†Series/Parallel.

All prices subject to trade discount, and change without notice.





# TRANSFORMERS

## MODULATION TRANSFORMERS Compound Filled Cases—For Specific Applications

Type No.	List Price	Output Tubes	Ohms Impedance		Max. M.A.		Watts	Dimensions			Mtg.
			Pri.	Sec.	Pri.	Sec.		H.	W.	D.	
A-4010	\$6.50	PP6A Q5, 6V6, 6F6 Single 6A6, 6N7, 53	10000 C.T.	4000-5000 7500-10000	70	60	10	2 1/4	2 1/4	2	H
A-4013	11.00	PP2A3, 6A3, 6B4, 6L6 45, 46, 59	6000 C.T. 3800 C.T. 3000 C.T.	5000-8000 10000	80	100	25	3 3/4	3 1/4	2 1/2	H
A-4014	17.50	PP6L6, 807, RK-41, HY56, HY61, HK24	6800-3800 C.T.	4000-5000 7500-10000	175	150	60	5	5	3 1/2	H
A-4015	20.00	PP800, 809, TZ-40, T-55, HK-54, RK-31, HY-40, 811, 807, 812	15000 C.T. 6900 C.T.	3000-4000 5000-6000	250	300	175	5	5	5 1/2	H

## FILAMENT TRANSFORMERS For Amplifier, Amateur, Industrial Use, 115 Volts, 60 Cycles

Type No.	List Price	Sec. Volts	Sec. Amp.	Insulation Volts	Dimensions			Mtg.
					H.	W.	D.	
4049	\$10.75	2.5 c.t.	10	10000	3 1/2	4 1/2	3	H

## PLATE TRANSFORMERS For Small Transmitters, Amateur, or Experimental Use, DC Voltage Ratings are Approx. Values Obtained at Output of a 2 Section Choke Input Filter Using Mercury Vapor Rectifier Tubes. PRI. is for 115 V. 60 Cy.

Type No.	List Price	Sec. Rms. Volts	Sec. DC Volts	Sec. DC M.A.	H.	W.	D.	Mtg.
P-4057	\$16.00	{ 660-680 }	{ **{ 500 }	250	5	5	4 1/2	H
P-4058	18.50	{ 550-550 }	{ 400 }	125	5	5	5 1/2	H
		{ 1080-1080 }	{ *{ 1000 }					
P-4059	18.00	{ 500-500 }	{ 400 }	150	5	5	5 1/2	H
		{ 900-900 }	{ 750 }	225				
P-4067	45.00	{ 800-800 }	{ 600 }	300	7 1/2	6 3/4	5 3/4	H
		{ 1450-1450 }	{ 1200 }					
P-4061	49.50	{ 1175-1175 }	{ 1000 }	300	7 1/2	6 3/4	6 3/4	H
		{ 2100-2100 }	{ 1750 }					
P-4062	63.00	{ 1800-1800 }	{ 1500 }	300	8 3/4	6 3/4	5 3/4	H
		{ 2900-2900 }	{ 2500 }					
		{ 2385-2385 }	{ 2000 }					

\*\* Has 40V. Bias Tap.

\* For Dual Operation with Simultaneous Use of Both Sec. Ratings.

## STEP-DOWN AUTOTRANSFORMER Input 220-250 V. 60 Cy. Output 110-125 V. Pri.-Cord and Plug—Sec. Receptical

Type No.	List Price	Output Watts	H.	W.	D.	Mtg.
P-4065	\$41.00	1000	7 1/2	6 3/4	5 3/4	H

## FILTER SMOOTHING CHOKES

Type No.	List Price	Inductance Henries	Current Rating M.A.	DC Res. ohms	Volts Inaul.	H.	W.	D.	Mtg.
C-4080	\$8.00	10	150	210	3000	3 3/4	3 1/4	2 3/4	H
C-4081	9.50	10	200	140	3000	3 3/4	4 1/2	3	H
C-4082	12.00	10	250	125	3000	5	5	4	H
C-4083	13.00	8	300	80	3000	5	5	4	H
C-4084	19.20	8	500	75	7500	5	5	4	H

All prices subject to trade discount, and change without notice.





# TRANSFORMERS

## FILTER INPUT OR SWINGING CHOKES

Type No.	List Price	Inductance Henries	Current Rating M.A.	DC Res. ohms	Volts Insul.	H.	W.	D.	Mtg.
C-4087	\$8.00	4-16	150	210	3000	3 1/8	3 1/8	2 1/8	H
C-4088	9.50	4-16	200	140	3000	3 1/8	4 1/2	3	H
C-4089	12.00	4-16	250	125	3000	5	5	4	H
C-4090	13.00	3-14	300	80	3000	5	5	4 1/8	H
C-4091	19.20	3-14	500	75	7500	6 1/8	6 1/8	5 1/8	H

## VIBRATOR TRANSFORMERS

Sealed in Compound Filled Cases for Interference or Hash Reduction. For Operation from 6 V. Battery and Vibrator

Type No.	List Price	Sec. DC Volts to Filter	Sec. M.A.	H.	W.	D.	Mtg.
P-4069	\$5.75	150	40	3	2 1/8	2 1/8	JT
P-4070	6.00	225	40	3	2 1/8	2 1/8	JT
P-4071	6.25	250	50	3	2 1/8	2 1/8	JT
P-4072	8.25	260	60	3 1/8	3 1/8	2 1/8	HL
P-4073	9.00	285	75	3 1/8	3 1/8	2 1/8	HL
P-4074	9.50	330	100	3 1/8	3 1/8	2 1/8	HL
P-4076	5.60	265	55	3 1/8	2 1/8	2 1/8	JG
P-4077	6.00	280	65	3 1/8	2 1/8	2 1/8	JT
P-4078	6.00	270	60	2 1/8	2 1/8	2 1/8	JT
P-4079	6.50	270	75	3 1/8	2 1/8	2 1/8	JT

## AC-DC VIBRATOR TRANSFORMER

For Operation From 6 V. Battery and Vibrator or 115 V. 60 Cy. Line

Type No.	List Price	H.V. Secondary		Filament		Dimensions			Mtg.
		DC Volts	M.A.	Volts	Amps.	H.	W.	D.	
P-4075	\$11.50	330	100	6.3	4	3 1/8	4 1/2	3	HL

## TV COMPONENTS

### HORIZONTAL OUTPUT AND HI-VOLTAGE TRANSFORMERS

Type No.	List Price	Picture Tube	Equivalent Type
HVO-1	\$7.00	7 DP4-10 BP4	211T1
HVO-3	7.00	10 BP4 Etc.	211T3
HVO-5	9.00	16 AP4 Etc.	211T5
HVO-6	10.00	7" to 19"	GE 77J1

### FOCUS COILS

Type No.	List Price	Tube Size	Equivalent Type	DC. Res. Ohms
MF-1	\$7.50	10"-12"		360
MF-2	11.00	16"	202D2	470
MF-3	7.50	10"-12"	202D1	247

### DEFLECTION YOKES

Type No.	List Price	Tube Size	Equivalent RCA Type	Def. Angle
MD-1	\$7.50	10"-12"	201D1	50°
MD-3	7.50	10"-12"	201D3	50°
MD-12	7.50	16"	201D12	53°
MD-70	7.50	12"-16"		70°
MD-70F	9.00	12"-19"	206D1	70°

All prices subject to trade discount, and change without notice.





# TRANSFORMERS

for REPLACEMENT AND SPECIAL PURPOSE  
OUTPUT, POWER, VIBRATOR, FILAMENT and OPERATION of  
WAR SURPLUS EQUIPMENTS

## OUTPUT TRANSFORMERS

### RECEIVER REPLACEMENT TYPE

To couple the plate or plates of the output stage to the speaker voice coil. Sec. Impedance—3.5 ohms

Type No.	List Price	Tube	Class	Pri. Impedance	Pri. M.A.	Max Watts	Mtg. Cntrs.	Mtg. Dimen.			Mtg.
								H.	W.	D.	
A-7001	\$1.25	Single 1C5-G, 1G5-G, 1G5, 194, 3Q4, 3S4, 6A4, 3Q5	A	8000	20	3	1 1/2"	1 1/2"	2 1/2"	1"	A
A-7003	1.50	Single 2A3, 6A3, 6B4, 6Y6, 25AC5, 25B6, 25N6, 25L6, 35A5, 35L6, 50L6, 48, 50B5, 35B5, 50A5	A	2000	60	5	2"	1 1/2"	3 3/4"	1 1/2"	A
A-7007	1.55	Single 6V6, 7C5, 12A, 12A5, 25A6, 25A7, 35A5, 35L6, 31, 45, 50, 59	A	5000	40	5	2"	1 3/4"	2 3/4"	1 1/2"	A
A-7018	1.55	Single 2A5, 6AC5, 6B5, 6F6, 6K6, 6N6, 7B5, 20, 31, 33, 42, 47, 50, 6V5	A	7000	30	5	2"	1 1/2"	2 3/4"	1 1/2"	A
A-7022	1.60	Single 1C5, 1Q5, 3C5, 6A4, 6G6, 6N7, 6R7, 12A, 38, 41, 49, 3V4	A	10000	30	5	2"	1 1/2"	2 3/4"	1 1/2"	A
A-7023	2.30	Single 19, 1G6, 1J6 PP 1H4, 30, 49	B	10000 c.t.	40	5	2"	1 1/2"	2 3/4"	1 1/2"	A
A-7029	2.30	PP 6V6, 7C5	AB-	10000 c.t.	40	10	2 3/4"	1 1/2"	2 1/2"	1 1/2"	A
A-7033	1.60	Single 1D8, 7B5, 6K6, 6G6	A	12000	10	5	2"	1 1/2"	2 3/4"	1 1/2"	A
A-7041	1.60	Single 1D8, 1F4, 1F5, 1J5, 1T5, 6V7, 12A7, 85	A	15000	10	5	2"	1 1/2"	2 3/4"	1 1/2"	A
A-7047	1.70	Single 1A5, 1N6, 6V7, 85 PP 1E7, 1J5, 6G6, 3A4, 3V4	A	25000 c.t.	10	5	2"	1 1/2"	2 3/4"	1 1/2"	A

## POWER TRANSFORMERS

Replacement Type Pri. 115 V. 60 Cycle. Leads RMA Color Coded

Type No.	List Price	H.V. Secondary		Rectifier		Fil. Wdgs.		Mtg. Centers	Mtg. Dimensions			Mtg.
		Volts	Dc.M.A.	Volts	Amp.	Volts	Amp.		H.	W.	D.	
P-6004	\$ 4.85	240-240	40	5	2	6.3 c.t.	2	2" x 2 1/2"	2 1/2"	3"	2 1/2"	C
P-6008	4.85	325-325	40	5	2	6.3 c.t.	2	2" x 2 1/2"	2 1/2"	3"	2 1/2"	C
P-6009	6.35	350-350	70	5	3	6.3 c.t.	2.5	2" x 2 1/2"	2 1/2"	3"	3 1/2"	C
P-6013	6.70	350-350	90	5	3	6.3 c.t.	3.5	2 1/2" x 2 1/2"	2 1/2"	3 1/2"	3 1/2"	C
P-6021	7.45	350-350	120	5	3	6.3 c.t.	4.7	2 1/2" x 3 1/2"	3 1/2"	3 1/2"	3 1/2"	C
P-6027	9.40	375-375	150	5	3	6.3 c.t.	5	2 1/2" x 3 1/2"	3 1/2"	3 1/2"	4 1/2"	C
P-6032	10.90	400-400	200	5	3	6.3 c.t.	5	3" x 3 1/2"	3 1/2"	4 1/2"	4"	C

## FULLY SHIELDED UPRIGHT MOUNTING TYPE

Type No.	List Price	H.V. Secondary	Rectifier	Fil. Wdgs.	Mtg. Centers	Mtg. Dimensions			Mtg.			
						H.	W.	D.				
P-6024	\$ 5.85	240-240	40	5	2	6.3 c.t.	2	2" x 1 1/2"	3 1/2"	2 1/2"	2 1/2"	B
P-6037	5.85	325-325	40	5	2	6.3 c.t.	2	2" x 1 1/2"	3 1/2"	2 1/2"	2 1/2"	B
P-6031	6.30	350-350	50	5	2	6.3 c.t.	2.6	2 1/2" x 1 1/2"	3 1/2"	2 1/2"	3 1/2"	B
P-6033	7.55	350-350	70	5	3	6.3 c.t.	3	2 1/2" x 1 1/2"	3 1/2"	3 1/2"	3 1/2"	B
P-6036	8.30	350-350	90	5	3	6.3 c.t.	3.5	2 1/2" x 2 1/2"	4 1/2"	3 1/2"	3 1/2"	B
P-6041	9.10	350-350	110	5	3	6.3 c.t.	4.5	3" x 2 1/2"	4 1/2"	3 1/2"	3 1/2"	B
P-6047	12.90	400-400	200	5	3	6.3 c.t.	5	3" x 3 1/2"	4 1/2"	3 1/2"	4 1/2"	B

## VIBRATOR TRANSFORMERS

For Operation from 6 V. Battery and Vibrator

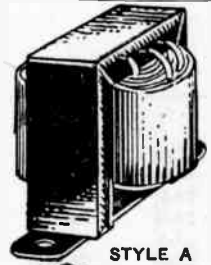
Type No.	List Price	Sec. DC Volts to Filter	Sec. M.A.	Mtg. Dimensions			Mtg.
				H.	W.	D.	
VP-4201	\$4.00	150	40	2 1/2"	2 1/2"	1 1/2"	D.
VP-4207	4.25	225	40	3 1/2"	2 1/2"	2 1/2"	E.
VP-4213	4.60	250	50	3 1/2"	2 1/2"	2 1/2"	E.
VP-4221	5.15	280	60	3 1/2"	2 1/2"	2 1/2"	E.

## MULTI-USE FILAMENT TRANSFORMERS

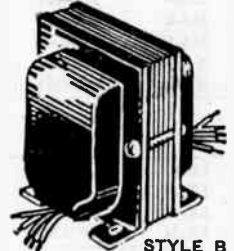
For Amplifier, Amateur, Industrial Use. Pri.: 115 Volts, 60 Cycles.  
All windings center tapped except those marked \*

Type No.	Use #1	Use #2	Use #3	Volt Inaul.	Mtg.	Mtg. Dimensions			Ship. Wt.	List Price
						H.	W.	D.		
F5049	Two Sec. of 2.5 V. @ 2.5 A	5 V. @ 2.5 A	2.5 V. @ 5 A	2000	D	2 1/2"	2"	1 1/2"	3	\$2.95
F5050	Two Sec. of 2.5 V. @ 5 A	5 V. @ 2.5 A	2.5 V. @ 10 A	10000	E	3 1/2"	2 1/2"	3 1/2"	3	4.80
F5051	Two Sec. of 2.5 V. @ 5 A	5 V. @ 5 A	2.5 V. @ 10 A	2000	E	3 1/2"	2 1/2"	2 1/2"	3	4.00
F5052	Two Sec. of 2.5 V. @ 7.5 A	5 V. @ 7.5 A	2.5 V. @ 15 A	2000	D	3 1/2"	2 1/2"	2 1/2"	5	4.75
F5053	Two Sec. of 5 V. @ 3.25 A	10 V. @ 3.25 A	5 V. @ 6.5 A	2000	D	3 1/2"	2 1/2"	2 1/2"	5	4.25
F5054	Two Sec. of 5 V. @ 10 A	10 V. @ 10 A	5 V. @ 20 A	10000	E	4 1/2"	3 1/2"	3 1/2"	7	8.50
F5055	Two Sec. of 5 V. @ 10 A	10 V. @ 10 A	5 V. @ 20 A	2000	E	4 1/2"	3 1/2"	3 1/2"	7	7.50
F5056			6.3 V. @ .8 A	2000	D	1 1/2"	1 1/2"	1 1/2"	2	2.90
F5057			6.3 V. @ 1.2 A	2000	D	1 1/2"	1 1/2"	1 1/2"	2	3.15
F5058			6.3 V. @ 3 A	2000	D	2 1/2"	2"	1 1/2"	3	3.50
F5058			6.3 V. @ 2 A	2000	D	2 1/2"	2"	1 1/2"	3	3.50
**F5006	Two Sec. of 6.3 V. @ 3 A	12.6 V. @ 3 A	6.3 V. @ 6 A	2000	D	3 1/2"	2 1/2"	2 1/2"	5	5.55
**F5004	Two Sec. of 6.3 V. @ 6.5 A	12.6 V. @ 6.5 A	6.3 V. @ 13 A	2000	E	3 1/2"	3 1/2"	2 1/2"	6	7.75
F5059	Two Sec. of 7.5 V. @ 1.5 A	15 V. @ 1.5 A	7.5 V. @ 3 A	2000	D	2 1/2"	2 1/2"	2 1/2"	3	4.25
F5060	Two Sec. of 7.5 V. @ 2.3 A	15 V. @ 2.3 A	7.5 V. @ 4.6 A	2000	D	3 1/2"	2 1/2"	2 1/2"	5	5.25
F5061	Two Sec. of 11 V. @ 5 A	22 V. @ 5 A	11 V. @ 10 A	2000	E	3 1/2"	3 1/2"	3 1/2"	7	7.50
**F5005*	Two Sec. of 12 V. @ 4 A	24 V. @ 4 A	12 V. @ 8 A	2000	E	3 1/2"	3 1/2"	2 1/2"	6	7.25
**F5009*	One Sec. of 24 V. @ 3 A			2000	E	3 1/2"	3 1/2"	2 1/2"	2 1/2	6.50
**F5075*	One Sec. of 24 V. @ 1 A			2000	D	2 1/2"	3 1/2"	2"	1 1/2	4.00

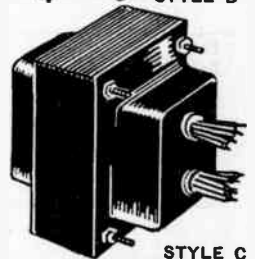
\*\* Types F5004, F5005, F5006, F5069, and F5075 designed for operation of 12 and 24 volt War Surplus Equipment.



STYLE A



STYLE B



STYLE C



STYLE D



STYLE E





**AUTO-TRANSFORMERS • ISOLATED PRIMARY TRANSFORMERS • METERED TRANSFORMERS**

# Adjust-A-Volt

## VARIABLE TRANSFORMER

### METERED MODELS



**TYPES  
PA-CA-MA-NA**



**TYPE  
LR**

### AUTO-TRANSFORMER MODELS

Type	Code Word	Input Voltage	Output Voltage	Output Rated	Amperes Max.	Maximum Rating (V.A.)	Overall Dimensions	Shipping Weight for One Unit	Net Prices	Type
PA-5	PADRE	115	0-140	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 5"	25 lbs.	\$23.50	PA-5
PA-10	PAMMY	115	0-140	10.0	15.0	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 7 $\frac{3}{4}$ "	37 lbs.	45.50	PA-10
CA-5	CADDY	115	0-280	2.5	3.5	430	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 7 $\frac{3}{4}$ "	30 lbs.	27.50	CA-5
CA-10	CAMMY	115	0-280	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	40 lbs.	52.50	CA-10
MA-5	MADRE	230	0-280	2.5	3.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 7 $\frac{3}{4}$ "	30 lbs.	31.50	MA-5
MA-10	MAMMY	230	0-280	5.0	7.5	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	40 lbs.	52.50	MA-10
NA-5	NADDDY	230	0-140	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 5"	27 lbs.	28.50	NA-5
NA-10	NAMMY	230	0-140	10.0	15.0	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	40 lbs.	55.50	NA-10

### ISOLATION TRANSFORMER MODELS ELECTROSTATICALLY SHIELDED

Type	Code Word	Input Voltage	Output Voltage	Output Rated	Amperes Max.	Maximum Rating (V.A.)	Overall Dimensions	Shipping Weight for One Unit	Net Prices	Type
LR-5	LARKE	115	70-140	5.0	5.0	500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 6 $\frac{3}{8}$ "	27 lbs.	\$29.50	LR-5
LR-10	LAMBE	115	70-140	10.0	10.0	1000	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	40 lbs.	57.50	LR-10
LR-22	LOOSE	230	70-140	5.0	5.0	500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 6 $\frac{3}{8}$ "	27 lbs.	31.50	LR-22
LR-24	LOOKE	230	70-140	10.0	10.0	1000	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	40 lbs.	61.50	LR-24

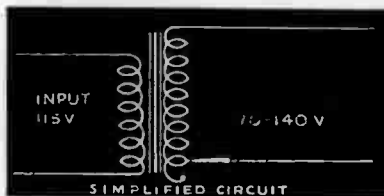
### METERED AUTO-TRANSFORMER MODELS

Type	Code Word	Input Voltage	Output Voltage	Output Rated	Amperes Max.	Maximum Rating (V.A.)	Overall Dimensions	Shipping Weight for One Unit	Net Prices	Type
PAL-5	PALLE	115	0-140	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 6 $\frac{3}{8}$ "	27 lbs.	\$35.50	PAL-5
PAL-10	LALLE	115	0-140	10.0	15.0	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	39 lbs.	57.50	PAL-10
CAL-5	MALLE	115	0-280	2.5	3.5	430	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	32 lbs.	38.50	CAL-5
CAL-10	NALLE	115	0-280	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	42 lbs.	64.50	CAL-10
MAL-5	QALLE	230	0-280	2.5	3.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{3}{8}$ "	32 lbs.	43.50	MAL-5
MAL-10	RALLE	230	0-280	5.0	7.5	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	42 lbs.	64.50	MAL-10
NAL-5	TALLE	230	0-140	5.0	7.5	860	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 7 $\frac{3}{4}$ "	29 lbs.	40.50	NAL-5
NAL-10	SALLE	230	0-140	10.0	15.0	1500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	42 lbs.	67.50	NAL-10

### METERED ISOLATION TRANSFORMER MODELS ELECTROSTATICALLY SHIELDED

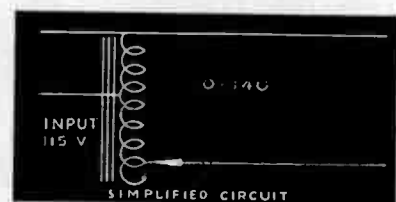
Type	Code Word	Input Voltage	Output Voltage	Output Rated	Amperes Max.	Maximum Rating (V.A.)	Overall Dimensions	Shipping Weight for One Unit	Net Prices	Type
LRL-5	BARKE	115	0-140	5.0	5.0	500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 6 $\frac{3}{8}$ "	29 lbs.	\$41.50	LRL-5
LRL-10	BAMBE	115	0-140	10.0	10.0	1000	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	42 lbs.	69.50	LRL-10
LRL-22	BOOSE	230	0-140	5.0	5.0	500	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 6 $\frac{3}{8}$ "	29 lbs.	43.50	LRL-22
LRL-24	BOOKE	230	0-140	10.0	10.0	1000	6 $\frac{3}{4}$ " x 9 $\frac{1}{8}$ " x 11"	42 lbs.	73.50	LRL-24

#### ISOLATED TRANSFORMER



**LR and LRL\* MODELS  
\* 0-140 volts**

#### AUTO-TRANSFORMER



**PA-CA-MA-NA-PAL-CAL-  
MAL-NA MODELS**

SMOOTH, CONSTANT CONTROL IN 4/10 VOLT STEPS. CONSERVATIVE RATINGS. PROVIDES CONTROL OF VOLTAGE TO REGULATE A.C. LINES • POWER • HEAT • LIGHT AND SPEED.

ALL MODELS FINISHED IN BLACK WRINKLE BAKED ENAMEL.

MANUFACTURED UNDER U. S. PATENT 2,009,013 AND OTHER PATENTS PENDING



# TRANSFORMERS

STEP

UP

DOWN

STEP

## ISOLATION AND LINE CORRECTION



FIG. 1



FIG. 2



FIG. 3



FIG. 4

### STEP-DOWN AUTOTRANSFORMERS

Input 220-240 V. 60 cy. Output 115 V. Pri. Cord and Plug Sec. Receptacle

Cat. No.	Code	Mount Fig. No.	Cap. in Watts	Input. Volts	Output. Volts	Cycles	Dimensions in Inches			Net Wt. in Lbs.	List Price	Cat. No.
							H.	W.	D.			
SB-0075	STEB A	1	75	200/240	115	50/60	3 1/8"	2 3/8"	3 3/8"	3 1/2	\$ 7.00	SB-0075
SB-0150	STEC A	1	150	200/240	115	50/60	3 1/8"	3 1/4"	3 3/8"	4 1/2	9.25	SB-0150
SB-0250	STED A	1	250	200/240*	115	50/60	4 1/8"	3 3/8"	4 3/8"	8 1/2	13.50	SB-0250
SB-0500	STEF A	1	500	200/240*	115	50/60	4 3/8"	3 3/8"	6 1/8"	12 1/2	22.50	SB-0500
SB-1000	STEG A	3	1000	200/240*	115	50/60	4 3/8"	7 1/2"	9"	22 1/2	38.50	SB-1000
SB-2000	STEL A	3	2000	200/240*	115	50/60	5 1/4"	8 3/8"	11 1/4"	40 1/2	61.90	SB-2000

\* These models have primary taps of 200-220-240 Volts. Simply remove cover plate (see Figure 2) and connect to required taps.

### LINE CORRECTION STEP-UP AUTOTRANSFORMERS

Models SU 100/105 Volt. Input. Models RU 200/210 Volt Input  
All SU Models Boost Input 10 Volts. All RU Models Boost Input 20 Volts

SU-0100	SUBAT	1	100	100/110	110/120	50/60	3 1/8"	2 3/8"	2 3/8"	2 3/4	\$ 5.15	SU-0100
SU-0250	SUCAT	1	250	100/110	110/120	50/60	3 1/8"	2 3/8"	3 1/8"	3 1/2	7.35	SU-0250
SU-0500	SUDAT	1	500	100/110	110/120	50/60	3 1/8"	3 1/8"	3 3/8"	4 1/2	8.85	SU-0500
SU-1000	SUFAT	1	1000	100/110	110/120	50/60	4 3/8"	3 3/8"	4 3/8"	8 1/2	17.65	SU-1000
SU-2000	SUGAT	1	2000	100/110	110/120	50/60	4 3/8"	3 3/8"	5 3/8"	14 1/2	35.40	SU-2000
RU-0100	SREBA	1	100	200/210	220/230	50/60	3 1/8"	2 3/8"	2 3/8"	2 3/4	5.15	RU-0100
RU-0250	SRECA	1	250	200/210	220/230	50/60	3 1/8"	2 3/8"	3 1/8"	3 1/2	7.35	RU-0250
RU-0500	SREDA	1	500	200/210	220/230	50/60	3 1/8"	3 1/8"	3 1/8"	4 1/2	8.85	RU-0500
RU-1000	SREFA	1	1000	200/210	220/230	50/60	4 3/8"	3 3/8"	4 3/8"	8 1/2	17.65	RU-1000
RU-2000	SREGA	1	2000	200/210	220/230	50/60	4 3/8"	3 3/8"	5 3/8"	14 1/2	35.40	RU-2000

### ISOLATION TRANSFORMERS

All Models 115 V. Input. 115 V. Output. Electrostatically Shielded.

SI-050	SICAR	1	50	115	115	50/60	3 1/8"	2 3/8"	3"	4 1/2	\$ 7.50	SI-050
SI-100	SICER	1	100	115	115	50/60	3 3/8"	3 3/8"	3 3/8"	7 1/2	14.50	SI-100
SI-250	SICOR	1	250	115	115	50/60	4 3/8"	3 3/8"	5 1/8"	14 1/2	27.50	SI-250

### LINE VOLTAGE ADJUSTORS, METERED

8 Position Rotary Switch Corrects Low or High Line to 115 V. from 85-95-105-115-125-135 V-AUTOTRANSFORMER

LC-150	LABAD	4	150	85-135	115	50/60	6 1/2"	4 3/8"	5"	7 1/2	\$24.75	LC-150
LC-350	LAFAD	4	350	85-135	115	50/60	6 1/2"	4 3/8"	5"	10 1/2	31.50	LC-350
LC-500	LAJAD	4	500	85-135	115	50/60	6 1/2"	4 3/8"	5"	11 1/2	37.50	LC-500

**STACO Transformers are compact and modern in design. Only the highest quality silicon lamination steel is used which assures cool operating transformers. Each coil is layer wound with the best quality enameled wires, each layer is insulated with heavy insulating material, each coil is varnished impregnated and high temperature baked. High Voltage Breakdown Test is performed on each coil and transformer in accordance with existing RMA Specs. This combination of high quality materials plus the finest workmanship is assurance of better and lasting performance at highest operating efficiency, yet costs no more than average.**

**Finishes: Mount type # 1, Black baked enamel, Mount type # 2, Black baked enamel, Mount type # 3, Natural Buffed Aluminum, Mount type # 4, Black Wrinkle baked enamel.**

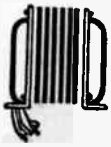
# Transformers



Peerless Electrical  
Products Division



1161 N. Vine Street  
Hollywood 38, Calif.  
161 Sixth Avenue  
New York 13, N.Y.



CASE A



CASE D



CASE E



CASE G



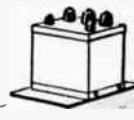
CASE K



CASE L



CASE Q



CASE S



CASE X

The Peerless standard commercial line includes power, filament, plate, isolation, TV, input, interstage, bridging, hybrid, output, impedance matching transformers, reactors, autotransformers and power chokes. These transformers are flat  $\pm 1$  db from 30-15,000 cps. Power transformers rated for maximum heat rise of 50°C. Output transformers deliver full rated power  $\pm 3$  db 30-10,000 cps.

Unsurpassed 20-20 line audio transformers include input, interstage, bridging, output and impedance matching. Frequency response is flat  $\pm 1$  db 20-20,000 cps, with good transmission up to 50 KC. Output transformers deliver rated power  $\pm 3$  db 20-20,000 cps.

See the latest Peerless catalog for complete information on these and other types. Engineering and manufacturing service for special transformers to meet all civilian and government specifications.

\* Suffix Letter on Type Number Indicates Case Style.

## COMBINATION PLATE AND FILAMENT TRANSFORMERS

Type Number*	High Voltage Secondary AC Volts	DC MA.	Filament Current, Amperes			Dimensions, Inches			Weight Lbs.	List Price
			2.5 V. C.T.	5 V.	6.3 V. C.T.	Height	Depth	Width		
R-080-A	275-0-275	20			2.	3 1/4	2 1/2	2 1/4	2 1/4	\$8.75
R-196-A	800-0-800	50		2.	2.5	3 1/4	3 3/4	2 1/4	3 1/4	7.90
R-320-A	825-0-825	70		8.	8.	3 1/4	3 3/4	2 1/4	4	8.60
R-400-A	350-0-350	90		8.	4.	4 1/4	3 3/4	3 3/4	6 1/4	9.50
R-480-A	850-0-850	120		8.	5.	4 1/4	3 3/4	3 3/4	6 3/4	10.90
R-482-A	850-0-350	120		8.	3. - 8.	4	3 1/2	3 1/4	4	11.25
R-560-A	400-0-400	200		8.	6.	5	4 3/4	4 3/4	11 3/4	15.50
R-561-A	400-0-400	200		8.	2. - 4.	5	4 3/4	4 3/4	11 3/4	16.75
R-640-A	575-0-575	225		8.		5	6	4 3/4	15 1/4	19.50
R-720-A	750-700-0-700-750	200-250†		8.		5	6 1/4	4 3/4	16 1/4	23.00
R-800-A	400-0-400	800		4.	4. - 5.	5	6 1/4	4 3/4	16 3/4	24.00

## PLATE TRANSFORMERS

Type Number*	Secondary AC Volts	DC Volts Choke Input	DC MA. ICAS	DC MA. CCS	Primary Volts 50-60 Cycle	Dimensions, Inches			Weight Lbs.	List Price
						Height	Depth	Width		
P-110-K	900-725-0-725-900	600-750	425	800	117	7	8	5 3/4	25	\$37.00
P-330-K	1175-880-0-880-1175	750-1000	425	800	117	7	8 1/2	5 3/4	27	40.00
P-440-K	1750-1450-0-1450-1750	1250-1500	450	825	117-234	7	10	7 3/4	47	60.00
P-550-K	2800-1725-0-1725-2800	1500-2000	550	400	117-234	7	10 3/4	7 3/4	57	80.00
P-660-K	2850-2275-0-2275-2850	2000-2500	625	450	117-234	9 1/4	11 1/2	9 1/4	70	110.00
P-770-K	3375-2800-2250-0-2250-2800-3375	2000-2500-3000	800	600	117-234	9 1/4	13	9 1/4	92	200.00
P-880-K	3350-2800-2250-0-2250-2800-3350	2000-2500-3000	1250	1000	117-234	9 1/4	15 1/4	9 1/4	135	245.00

## FILAMENT TRANSFORMERS

Type Number*	Secondary Current, Amperes					Test Volts R.M.S.	Primary Volts 50-60 Cycle	Dimensions, Inches			Weight Lbs.	List Price
	2.5 V. C.T.	5 V. C.T.	6.3 V. C.T.	7.5 V. C.T.	10 V. C.T.			Height	Depth	Width		
F-012-X			1.			2000	117	1 1/2	2 1/2	1 1/2	1/2	\$2.80
F-036-X			1.8			2000	117	2	3 1/2	2	1	3.40
F-060-X		4.				2000	117	2 1/2	3 3/4	2 1/4	1 1/2	4.25
F-072-X			3.6			2000	117	2 1/2	3 3/4	2 1/4	1 1/2	4.25
F-104-X			5.			2000	117	2 1/2	4 1/4	2 1/2	2 1/2	6.00
F-138-E		10.				2000	117	3 1/2	3 3/4	2 1/2	3 1/2	6.95
F-139-E			8.			2000	117	3 1/2	3 3/4	2 1/2	3 1/2	6.95
F-140-E				5.		2000	117	3 1/2	3 3/4	2 1/2	3 1/2	6.95
F-156-E					10.	2000	117	3 1/2	3 3/4	2 1/2	3 3/4	7.25



**20-20 INPUT TRANSFORMERS**

20-20 Type Number*	Descriptive Data	Impedance, Ohms		Max. Level	Primary DC MA.		Dimensions, Inches			Weight Lbs.	List Price
		Primary	Secondary**		Max.	Unbal.	Height	Depth	Width		
K-221-Q	Secondary may be used single ended or Push-Pull—has two secondaries with balanced capacitance to ground. Static shield between primary and secondary. 90 db magnetic shielding.	500, 250 80 or 600, 300 36	70,000 or 84,000	-20 db 6 mw ref.	0	—	3 1/2	2%	2 1/2	1%	\$36.50
K-281-Q	For Push-Pull only—two secondaries with balanced capacitance to ground.	500, 220 125, 56, 14 or 600, 265 150, 67, 17	30,000 or 38,000	+30 db 6 mw ref.	0	—	4%	3%	3 1/2	5%	52.50

\*\*Secondary impedance is total of two separate windings.

**20-20 INTERSTAGE TRANSFORMERS**

20-20 Type Number*	Descriptive Data	Impedance, Ohms		Max. Level	Primary DC MA.		Dimensions, Inches			Weight Lbs.	List Price
		Primary	Secondary		Max.	Unbal.	Height	Depth	Width		
G-212-Q	Both primary and secondary may be used single-ended or in Push-Pull—has two secondary windings with balanced capacitance to ground—static shield between primary and secondary—parallel feed recommended. 90 db magnetic shielding.	10,000 2,500	40,000 10,000	-20 db 6 mw ref.	5 Per Winding Push-Pull Only	0	3 1/2	2%	2 1/2	1%	\$36.50

**20-20 OUTPUT TRANSFORMERS**

20-20 Type Number*	Descriptive Data	Impedance, Ohms		Max. Level	Primary DC MA.		Dimensions, Inches			Weight Lbs.	List Price
		Primary	Secondary		Max.	Unbal.	Height	Depth	Width		
S-215-Q	Primary may be used single ended or in Push-Pull—two secondaries with balanced capacitance to ground—parallel feed is recommended. 60 db magnetic shield.	20,000 5,000 or 24,000 6,000	500, 250 125, 62 1/2 or 600, 300 150, 75	+15 db 6 mw ref.	15 Per Winding Push-Pull Only	0	4 1/2	3 1/8	3 1/8	2 1/2	\$45.00
S-220-Q	Same data as S-215-Q.	12,500 8125 or 15,000 3750	500, 250 125, 62 1/2 or 600, 300 150, 75	+15 db 6 mw ref.	15 Per Winding Push-Pull Only	0	4 1/2	3 1/8	3 1/8	2 1/2	45.00
S-225-Q	Primary may be used single ended or in Push-Pull. Will carry tube plate current. Has two secondary windings with balanced capacitance to ground. Has 40 db electro-magnetic shield.	8000 2000 or 9600 2400	500, 250 125, 62 1/2 or 600, 300 150, 75	+18 db	12	12	4 1/2	3 1/8	3 1/8	2%	40.00
S-230-Q	Secondary may be operated with one end grounded.	6600 C.T.	16, 8, 4, 2	20 watts +35 db	70	7	4%	3%	3 1/2	6	26.00
S-235-Q	Secondary should be operated balanced to ground.	6600 C.T.	500, 250 125, 62 1/2	20 watts +35 db	70	7	4%	3%	3 1/2	6	26.50
S-240-Q	Same as S-230-Q.	5000 C.T.	16, 8, 4, 2	20 watts	90	9	4%	3%	3 1/2	6	26.00
S-242-Q	Same as S-235-Q.	5000 C.T.	500, 250 125, 62 1/2	20 watts +35 db	90	9	4%	3%	3 1/2	6	26.50
S-245-Q	Same as S-230-Q.	8000 C.T.	16, 8, 4, 2	20 watts	110	11	4%	3%	3 1/2	6	26.00
S-250-Q	Same as S-235-Q.	3000 C.T.	500, 250 125, 62 1/2	20 watts	110	11	4%	3%	3 1/2	6	26.50
S-265-Q	Two center-tapped primaries may be used in series or parallel. Secondary may be operated with one end grounded.	10,000 C.T. 2500 C.T.	16, 8, 4, 2	40 watts +38 db	110 220	22	5	4 1/8	4 1/8	10	45.00
S-270-Q	Same as S-265-Q except secondary should be operated balanced to ground.	10,000 C.T. 2500 C.T.	500, 250 125, 62 1/2	40 watts +38 db	110 220	22	5	4 1/8	4 1/8	10	45.00
S-275-S	For operation from triodes. Load impedances may be varied over range of 3 to 1. May be operated at 100 watts in restricted freq. range 25-16,000 cps.	4000 C.T. to 12,000 C.T.	16, 8, 4, 2 to 48, 24, 12, 6	80 watts +41 db See Data	120	12	6	6	5%	24	80.00
S-280-S	Same data as S-275-S.	4000 C.T. to 12,000 C.T.	125, 62 1/2 81, 16 1/2 to 375, 187 1/2 93, 46 1/2	80 watts +41 db See Data	120	12	6	6	5%	24	80.00

**INPUT TRANSFORMERS**

Type Number*	Application	Impedance, Ohms		Turns Ratio	Freq. Range ±1 db	Dimensions, Inches			Weight Lbs.	List Price
		Primary	Secondary			Height	Depth	Width		
K-007-X	Single-Button Mic. to 1 or 2 Grids.	100	700,000 C.T.	1:84	Voice	1 1/2	2%	1%	1 1/2	\$3.85
K-049-D	Line to P-P. Grids Max. Level-34 db. Level=0 db. 30 db Mag. Shielding.	500 C.T.-833-250 200 C.T.-125-50	60,000		30-15,000	2%	1%	1%	1	17.50
K-049-Q	Same as K-049-D except has 90 db Magnetic Shielding	500 C.T.-833-250 200 C.T.-125-50	60,000		30-15,000	3 1/2	2%	2 1/2	1 1/2	24.00
K-054-Q	Line, Mixer, or Micropone to 2 Grids Max. Level=+10 db 30 db Hum-bucking.	500 C.T.-833-250 25-200 C.T.-125-50	70,000		20-20,000	3 1/2	2%	2 1/2	1 1/2	23.50



**REACTORS**

Type Number*	Application	Res. Ohms	Ind. Henries	DC MA.		Dimensions, Inches			Weight Lbs.	List Price
				Normal	Max.	Height	Depth	Width		
L-370-D	Low Pass Filter	725	4	0	10	1 3/4	1 3/4	Round	3/8	\$10.00

**IMPEDANCE MATCHING TRANSFORMERS**

Type Number*	Application	Impedance, Ohms		Audio Watts	Freq. Range	Dimensions, Inches			Weight Lbs.	List Price
		Primary	Secondary			Height	Depth	Width		
E-372-Q	Mic. or Line to Line—Static Shield Btwn. Pri. & Sec. 60 db Mag. Shield.	500 C.T.-333-250 200 C.T.-125-50	500 C.T.-333-250 200 C.T.-125-50	+10 db	30-15,000	3 1/2	2 3/4	2 3/4	1 1/2	\$27.00
E-374-Q	Line to Speaker—RMA Standardized line for Sound Distribution. Insertion Loss 0.6 db—1/4 watt tap for lines of 500 or less ohms.	10,000 C.T.-7,500 5000 C.T.-2500-1250	16-12-8-4-2	4	30-15,000	4 3/4	3 1/4	3 1/4	2 1/4	19.00
E-374-X	Same Data as E-374-Q.	10,000 C.T.-7,500 5000 C.T.-2500-1250	16-12-8-4-2	4	30-15,000	2 3/4	3 3/4	2 1/4	1 3/4	9.00
E-377-X	Line to Speaker.	500	16-8	5	40-10,000	2	3 1/2	2	1	4.50
E-386-E	Line to Speaker—RMA Standardized line for Sound Distribution. Insertion Loss 0.6 db Max.	1600 C.T.-1200 800 C.T.-400-200	16-12-8-4-2	24	30-15,000	3 3/4	3	3 3/4	4 1/4	18.50
E-386-Q	Same Data as E-386-E.	1600 C.T.-1200 800 C.T.-400-200	16-12-8-4-2	24	30-15,000	4 3/4	3 3/4	3 3/4	6	30.50
E-392-E	Same Data as E-386-E.	625 C.T.-470 312 C.T.-166-78	16-12-8-4-2	64	30-15,000	4 3/4	4 3/4	3 3/4	9	28.00
E-392-S	Same Data as E-386-E.	625 C.T.-470 312 C.T.-166-78	16-12-8-4-2	64	30-15,000	5 3/4	4 3/4	5 3/4	11 1/4	39.50

**REPLACEMENT OUTPUT TRANSFORMERS**

Type Number*	Application	Turns Ratio	Impedance, Ohms		Max. Pri. MA. DC	Audio Watts	Dimensions, Inches			Weight Lbs.	List Price
			Primary	Secondary			Height	Depth	Width		
X-404-X	1-1Q5, 3Q5, 1G6, 184, 384, 1C6, etc.	50:1	8000	4 to 2 3/4 8.2 Nominal	15	1	1 1/4	1 1/4	1 1/4	3/4	\$2.90
X-408-X	1-25L6, 35L6, 50L6, etc.		2500-2000-1500	6 to 2	60	5	1 1/4	2 1/2	1 1/2	3/8	2.90
X-424-X	1 or 2-41, 42, 6K6, 6V6, etc		10,000-7000 5000-3500 C.T.	6 to 1.04	40	7	1 3/4	2 3/4	1 3/4	1/2	3.00
X-428-X	Universal 1 or 2 tubes.		14,000-10,000 7000-5000-4000 C.T.	16 to .18	50	10	2	3 1/2	2	1	3.75
X-432-X	2-6F6, 6V6, 6K6, 42, 2A5, 45, 71, 50, 6L6		10,000 8000 C.T.	10-6 4-2 1/4	50	15	2 3/4	3 3/4	2 1/4	1 1/2	4.25

**STANDARD OUTPUT TRANSFORMERS**

Type Number*	Application	Freq. Range ±1 db	Impedance, Ohms		Pri. DC MA.		Audio Watts	Dimensions, Inches			Weight Lbs.	List Price
			Primary	Secondary	Max.	Unbal.		Height	Depth	Width		
S-472-X	S. plate to VC or line.	100-5000	7000	500-200-15 8-4-2 1/4	40	40	10	2 3/4	3 3/4	2 1/4	1 1/2	6.50
S-508-A	P.-P. plates to VC.	30-15,000	8000 C.T.	16-12-8-4	45	5	10	2 1/4	2 1/4	2 1/4	1 3/4	9.25
S-516-A	P.-P. plates to VC.	30-15,000	6600 C.T.	16-12-8-4	70	7	20	3 1/4	3	2 3/4	2 1/2	11.75
S-524-A	P.-P. plates to VC or line.	30-15,000	6600 C.T. 5000 C.T.	500 C.T. 125 16-12-8-4	70	7	20	3 1/4	3 1/4	2 3/4	3	12.50
S-530-A	P.-P. plates to speaker or line.	30-15,000	5000 C.T. 3000 C.T.	500 C.T.-125 16-12-8-4	90	9	20	3 3/4	3 3/4	2 3/4	3	12.50
S-532-A	P.-P. plates to VC.	30-15,000	5000 C.T. 3000 C.T.	16-12-8-4	90	9	20	3 3/4	3	2 3/4	2 1/2	12.00
S-540-A	P.-P. plates to VC or line.	30-15,000	2500 C.T. 1500 C.T.	500 C.T. 125 16-12-8-4	200	20	40	4 1/4	3 3/4	3 3/4	6 1/4	18.50
S-548-A	P.-P. plates to VC or line.	30-15,000	3800 C.T. 3200 C.T.	500 C.T. 125 16-12-8-4	250	25	60	5	4 3/4	4 3/4	12	29.00
S-552-A	P.-P. plates to speaker or line.	30-15,000	3800 C.T. 3200 C.T.	380, 82 1/2 16-12-8-4-2	250	25	60	4 3/4	4 3/4	3 3/4	9	29.00

# CREST TRANSFORMER CORP.



FIGURE J



FIGURE F



FIGURE D

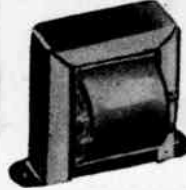


FIGURE A



## AUDIO TRANSFORMERS

### Driver

Stock No.	Driver Tubes	Output Tubes	Class	Ratio Pri. to 1/2 Sec.	Pri. M.A.	Mtg. Fig.	Mtg. Ctrs.	Dimensions			Wt. Lbs.	List Price
								H.	W.	D.		
6115	1-30, 49, 6C5 1-1J6G	19, 2-30, 49	B	2.4:1	8	B	2"	1 1/2"	2 1/2"	1 1/2"	.7	\$1.80
6118	1-33, 41, 42, 46, 59, 2A5, 6F6	P.P. 46, 59 6L6, 6F6	AB2	2.2:1	32	K	2x1 1/2"	3 1/2"	2 1/2"	2 1/2"	2.6	3.80
6116	1-42, 45, 2A5, 6C5, 6F6, 6N7	P.P. 42, 2A5, 6F6, 6L6, 6V6	AB	1.7:1 1.5:1 1.3:1	35	A	2 1/2"	2	3 1/4"	1 1/2"	1.7	3.50
6117	1-42, 47, 2A5, 6F6	P.P. 2A5, 6F6, 6L6	AB2	1.4:1	40	K	2 1/4x2"	3 1/2"	3	3 1/2"	3.5	5.50
6122	P.P. 45, 2A3, 6F6, 6L6	35T, 203A, 800, 806, T20, T55, 100TL, RK57	B	3.2:1 2:1	40	K	2x1 3/4"	3 1/2"	2 1/2"	2 1/2"	2.7	5.25
6119	P.P. 45, 6C5, 6F6, Tri. 59, 2A3, 4-2A3, 6L6	59, 805, 100TH, HY57, RK18, TZ40, P.P. 6L6, 4-46, 4-2A3	A B	5:1 4:1 3.2:1	60	K	2x1 3/4"	3 1/2"	2 1/2"	2 1/2"	2.7	5.50

### Input or Microphone Mike to Grid

Stock No.	Application	Ohms Impedance		Turns Ratio	Mtg. Fig.	Mtg. Ctrs.	H.	W.	D.	Wt.	List Price
		Pri.	Sec.								
6100	S.B. Mic. to Single or P.P. Grids	100	400000/C.T.	1:64	F	2	2	2 1/2"	1 1/2"	.9	\$2.15
6105	D.B. Mike to Line	200/50	500/125	1:1.68	F	2 1/2"	2 1/2"	2 1/2"	2 1/2"	1.8	4.20
6101	Voice Coil to Grid	3.2 CT	38,000		F	1 1/2"	1 1/2"	2	1 1/2"	.8	1.95
6103	Low Imp. Ribbon Mike to Grid	150-250 CT	53,000		F	2	2	2 1/2"	2	1.0	2.20

### Interstage

Stock No.	Ohms Impedance	Sec.	Turns Ratio	M.A. Pri.	Fig. Mtg.	Ctrs. Mtg.	Dimensions			Wt. Lbs.	List Price
							H.	W.	D.		
6302	10000	90000	Sgl. 3:1	10	A	2	1 1/2"	2 1/2"	1 1/2"	.6	\$1.90
6301	10000 CT	90000 CT	P.P. 3:1	10	A	2 1/2"	1 1/2"	2 1/2"	1 1/2"	.8	2.15
6305	10000	125000 CT	P.P. 3.5:1	10	A	2 1/2"	2	3 1/4"	1 1/2"	1.2	2.45
6306	10000 CT	90000 CT	P.P. 3:1	10	A	2 1/2"	2	3 1/4"	1 1/2"	1.2	2.45

### Modulation

Stock No.	Typical Tube	Impedance		M.A. Pri.	D.C. Sec.	Class	Watts	Mtg. Fig.	Mtg. Ctrs.	Dimensions			Wt. Lbs.	List Price
		Pri.	Sec.							H.	W.	D.		
6850	P.P. 6V6, 6F6, 1-53, 6A6, 6K6, 7C5, 6N7, 14C5	10000 CT	7500 5500 3500	60	60	A	12	F	2 1/2"	2 1/2"	2 1/2"	1.4	\$2.65	
6851	P.P. 6L6, 45, 50, 2A3, 6A3, 6F6, 6V6	6000 CT 3000 CT	10000 7500 9000	100	100	AB	25	K	3 1/2"	2 1/2"	2 1/2"	2.9	5.80	
6852	P.P. 6L6, 46, HY56, 807	6600 CT	12000 8000 4000	150	150	AB	40	L	4 1/4"	3 1/2"	4 1/2"	6.4	9.95	

### Output

Stock No.	Typical Tube	Class	Ohms Impedance		Pri. M.A.	D.C. Sec.	Watts	Mtg. Fig.	Mtg. Ctrs.	Dimensions			Wt. Lbs.	List Price
			Pri.	Sec.						H.	W.	D.		
6018	P.P. 50L6, 25B5, 25AC5, 25L6, 6V6, 6W6, 6V6	AB	4000	3.2	50	4	A	2	1 1/2"	2 1/2"	1 1/2"	.4	\$1.35	
6013	Sgl. 89, 95, 6F6, 6D5, 6B5, 12A6	A	7000	3-6	30	3	A	2	1 1/2"	2 1/2"	1 1/2"	.4	1.35	
6012	Sgl. 1C5G, 1Q5G, 3A4, 1G5, 1S4, 3S4, 3Q5	A	8000	3.2	20	5	A	2	1 1/2"	2 1/2"	1 1/2"	.5	1.30	
6008	P.P. 1-19, 1-1J6G, 1-1G6G, 2-30, 49, 25A6	B AB	10000	4/8	30	8	A	2 1/2"	2	3 1/4"	1 1/2"	1.0	1.80	
6019	P.P. 43, 6F6, 59B, 25A6, 6V6, 7C5, 71A	AB	10000	3.2	45	10	A	2 1/2"	2	3 1/4"	1 1/2"	1.0	1.85	
6016	P.P. 6F6, 6D5, 6AC5, 6K6, 6B5, 6AD7, 6N6, 7B5, 12A6, 18	AB	14000	3-6	42	10	A	2 1/2"	2	3 1/4"	1 1/2"	1.0	1.15	
6009	P.P. 1B8, 1E7, 1F4, 1T5, 6G6, 1299, 1602 Sgl. 6V7, 55, 85	A	25000	3.2	12	5	A	2	1 1/2"	2 1/2"	1 1/2"	.4	1.75	
6026	P.P. Par 4-6L6, P.P. 2-6L6, 45, 6A3	AB1	3300	4/8/15 250/500	155	60	K	2 1/2x2 1/4"	4	3 1/4"	3 1/2"	5.2	8.60	
6021	P.P. 6L6	AB2	3800	4/8 15/500	115	60	K	2 1/2x2 1/4"	4	3 1/4"	3 1/2"	4.6	7.00	
6024	P.P. 6L6, 2A3	AB1	4300	4/8/15 250/500	95	25	K	2 1/4x2"	3 1/2"	2 1/2"	3	3.6	5.65	
6025	P.P. 6L6, 6F6, 6AL6	AB2	5500	4/8/15 250/500	90	40	K	2 1/2x2"	4	3 1/4"	3 1/4"	4.7	7.90	
6005	Universal Sgl. or P.P.	A	4000/7000 8000/10000 14000 Ct.	Adj.	30	4	C	2	2	2 1/2"	1 1/2"	.6	1.80	
6000	Universal Sgl. or P.P.	A	4000/7000 8000/10000 14000 Ct.	Adj.	35	8	C	2 1/2"	1 1/2"	2 1/2"	1 1/2"	.7	1.90	
6003	Universal Sgl. or P.P.	A	4000/7000 8000/10000 14000 Ct.	Adj.	40	12	D	2 1/2"	2 1/2"	2 1/2"	1 1/2"	1.0	2.25	
6004	Universal Sgl. or P.P.	A	4000/7000 8000/10000 14000 Ct.	Adj.	40	18	D	2 1/2"	2 1/2"	3 1/2"	2 1/4"	1.5	2.60	

WRITE FOR LATEST CATALOG SHOWING COMPLETE LINE

# CREST TRANSFORMER CORP.



FIGURE K



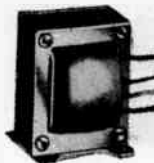
### CHOKES

FIGURE G



### Filter

FIGURE E



### Heavy Duty

FIGURE P



### Swinging

### FILAMENT TRANSFORMERS

### FULLY ENCLOSED POWER TRANSFORMERS

### UNIVERSAL POWER TRANSFORMERS

### TELEVISION TRANSFORMERS

V.B.O. & H.B.O.  
Vertical Output

### TELEVISION Power Transformers

### LINE REGULATORS STEP UP OR STEP DOWN 50-60 CYCLE

### ISOLATION TRANSFORMERS 50-60 CYCLE

### AUTOFORMERS STEP UP OR STEP DOWN 50-60 CYCLE

Stock No.	Inductance Henries	Current Rating M.A.	D.C. Res. Ohms	Volts Ins. U.L.	Mtg. Fig.	Mtg. H.	Dimensions W. D.	Wt. Lbs.	Price List
6200	13.5	35	850	1600	A	1 7/8	3 1/4 1 1/2	1.0	\$1.80
6208	6.5	40	530	1600	A	1 7/8	2 3/4 1 1/2	0.8	1.40
6201	7.0	60	200	1600	A	1 7/8	3 1/4 1 1/2	1.0	2.00
6204	16	75	400	1600	A	2 1/4	3 1/2 1 1/2	1.8	2.50
6221	5.0	80	138	1600	A	1 7/8	3 1/4 1 1/2	1.5	2.10
6202	7.5	80	250	1600	A	1 7/8	3 1/4 1 1/2	1.4	2.20

Inductance									
At zero DC	At rated DC								
6223	34	10	150	231	1600	K	3 1/2 2 1/2 3/8	2.6	4.00
6224	10.2	4.2	215	80	3000	K	3 1/2 2 1/2 3/8	2.6	5.50
6225	19.5	7.3	250	121	3000	K	4 1/4 3 3/8 3/8	6.2	7.50
6220	17	4.8	450	60	5000	L	4 3/4 3 5/8 5	12.5	14.00

Stock No.	Inductance Henries	D.C. M.A. Range	D.C. Res. Ohms	Volts Insul.	Mounting Fig.	Dimensions H. W. D.	Wt. Lbs.	List Price
6217	5-20	15-150	215	3000	K	3 1/2 2 1/2 2 1/2	2.8	\$4.30
6230	5-20	50-500	70	5000	L	5 1/2 4 1/2 4 3/4	13.0	19.00

Stock No.	Pri. Volts	Sec. Volts	Amps	Sec. Volts Inc.	Mtg. Fig.	Dimensions H. D. W.	Wt. Lbs.	List Price
F-6730	115	2.5 c.t.	5.25	1800	B	2 3/8 2 1/2 2 1/8	1.3	\$2.80
F-6732	115	2.5 c.t.	10	7500	R	4 3 3/4 3 1/4	2.6	4.20
F-6740	115	5.0 c.t.	5	1800	B	3 1/2 3 3/8 2 1/8	2.2	3.15
F-6752	115	5.0 c.t.	12	10000	R	4 1/2 3 1/2 3 1/4	7.0	10.50
F-6724	115	6.3 c.t.	1.5	1600	B	2 1 1 1/4 1 3/4	1.0	1.95
F-6727	115	6.3 c.t.	3	1600	B	2 3/8 2 3/8 2 1/8	1.4	2.40
F-6750	115	7.5 c.t.	5	2500	R	3 1/4 2 1/2 2 1/4	2.8	3.90
F-6751	115	7.5 c.t.	8	1800	R	3 3/4 3 2 2 1/2	4.0	4.20
F-6756	115	10.0 c.t.	5	3000	R	3 3/4 2 1/2 2 3/4	4.6	5.50
F-6757	115	10.0 c.t.	8	3000	R	3 3/8 3 3/8 3 1/8	4.8	5.85

Stock No.	H.V. Load Volts	A.C. Secondary D.C. M.A.	Fil. No. 1	Fil. No. 2	Filament Windings	Mtg. Fig.	Mtg. Ctrs.	Dimensions H. W. D.	Wt. Lbs.	List Price
6600	325-325	40	5V-2A	6.3V-2A	C.T.	K	2 x 1 1/2	3 1/2 2 5/8 2 1/2	2.2	\$5.25
6601	325-325	50	5V-2A	6.3V-3A	C.T.	K	2 x 1 1/2	3 1/2 2 5/8 2 1/4	2.8	5.50
6602	350-350	70	5V-3A	6.3V-3.5A	C.T.	K	2 1/2 x 1 1/2	3 3/8 3 3/4 3 3/8	4.2	6.75
6603	350-350	100	5V-3A	6.3V-4.5A	C.T.	K	2 1/2 x 2 1/4	3 3/8 3 3/4 3 1/2	5.2	8.00
6604	350-350	120	5V-3A	6.3V-5A	C.T.	K	2 1/2 x 2 1/4	3 3/8 3 3/4 3 3/8	5.7	8.75
6605	400-400	200	5V-4A	6.3V-6A	C.T.	K	3 x 2 3/4	4 5/8 3 3/4 3 3/4	8.0	10.00
6606	430-430	325	5V-6A	6.3V-8A	C.T.	K	3 x 4 1/2	4 5/8 3 1/2 5 1/2	14.7	16.00

Stock No.	H.V. Load Volt	Secondary D.C. M.A.	Fil. No. 1	Fil. No. 2	Filament Windings	Mtg. Fig.	Mtg. Centers	Dimensions H. W. L.	Wt. Lbs.	List Price
P-6555	325 - 325	40	5V-2A	6.3V-2A	C.T.	P	2 x 2 1/2	2 1/2 x 3	2.3	\$4.50
P-6556	325 - 325	45	5V-2A	6.3V-2A	C.T.	P	2 x 2 1/2	2 1/2 x 3	2.3	4.70
P-6557	350 - 350	70	5V-3A	6.3V-2.5A	C.T.	P	2 1/4 x 2 1/2	2 1/4 x 3 1/4	3.4	5.80
P-6558	350 - 350	90	5V-3A	6.3V-3.5A	C.T.	P	2 1/4 x 2 1/2	2 1/4 x 3 1/4	4.0	6.00
P-6559	350 - 350	120	5V-3A	6.3V-4.7A	C.T.	P	2 1/4 x 3 1/2	3 1/4 x 3 1/4	5.0	7.00
P-6560	375 - 375	150	5V-3A	6.3V-4.7A	C.T.	P	2 1/2 x 3 1/2	3 1/2 x 4 1/2	5.8	8.75

Stock No.	Type	Electrical Equivalent	Mtg. Fig.	Dimensions H. W. D.	Wt. Lbs.	List Price
3008	Vertical Blocking Oscillator	R.C.A. 208T2 Potted	G	1 3/4 2 1/8 1 1/2	.6	\$2.95
3012	Horizontal Blocking Oscillator	R.C.A. 208T1 Potted	G	1 3/4 2 1/8 1 1/2	.8	3.60
3010	Vertical Output	R.C.A. 204T2 Open Type	E	3 1/8 2 1/2 2 1/4	2.5	\$5.40
3036	Vertical Output	R.C.A. 204T9 Open Type	E	3 1/8 2 1/2 2	2.3	5.20

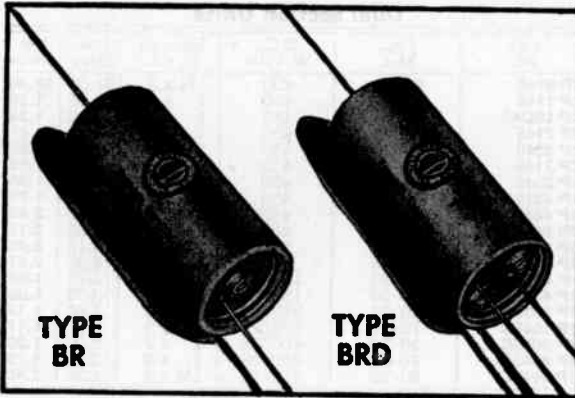
Stock No.	H.V. Load Volts	A.C. Sec. D.C. M.A.	Fil. 1	Fil. 2	Fil. 3	Filament Windings	Mtg. Fig.	Mtg. Ctrs.	Dimensions H. W. D.	Wt. Lbs.	List Price
5855	385-385	180	5V-3A	6.3V-1.2A	6.3V-6A	Fil. 4 5V-2A	K	3 x 3 1/4	4 3/8 3 3/4 4 1/2	10.8	\$16.60
5856	365-365	250	5V-3A	6.3V-.6A	6.3V-8A	Fil. 4 5V-2A	P	3 x 3 3/4	4 3/8 4 1/2 3 3/4	12.6	18.90
5854	435-435	210	5V-6A	6.3V-10A	6.3V-3.5A	Fil. 4 5V-2A	K	3 x 3 3/4	4 3/8 3 3/4 5 1/4	13.5	20.50
5852	365-365	295	5V-6A	5V-2A	12.6V-5A	C.T.	P	3 1/2 x 4 3/4	5 4 1/2 5 1/4	15.5	23.50
5853	A 430-430	215	6.3-10A	5V-3A	5V-2A	Fil. 4 5V-2A	P	3 x 3 3/4	5 3/4 3 3/4 4 1/2	15.0	24.00

Stock No.	Input Volts	Output Volts	Max. Watts	Mtg. Fig.	Mtg. Ctrs.	Dimensions H. W. D.	Wt. Lbs.	List Price
5909	220-250	110-125	100	J	2 1/4 x 3	4 3/8 3 1/2 4	6.4	\$13.50
5916	220-250	110-125	150	J	2 3/4 x 3 1/4	4 3/8 3 1/2 4 3/8	6.0	15.50
5917	220-250	110-125	250	J	3 x 4 1/4	4 3/8 3 3/8 5 1/2	14.0	22.50
5906	110-125	110-125	250	J	3 x 4 1/4	4 3/8 3 3/8 5 1/2	14.0	22.50
5907	110-125	110-125	500	J	5 3/4 x 3 1/2	6 1/4 5 3/4 5	28.0	31.00
5912	220-250	110-125	150	J	2 1/4 x 1 1/2	4 3/8 3 1/2 3 3/8	4.8	9.30
5913	220-250	110-125	250	J	2 3/4 x 3	4 3/8 3 3/8 4 3/8	7.6	11.00
5914	220-250	110-125	500	J	3 x 3 1/2	4 3/8 3 3/8 5 1/4	10.8	17.00

WRITE FOR LATEST CATALOG SHOWING COMPLETE LINE



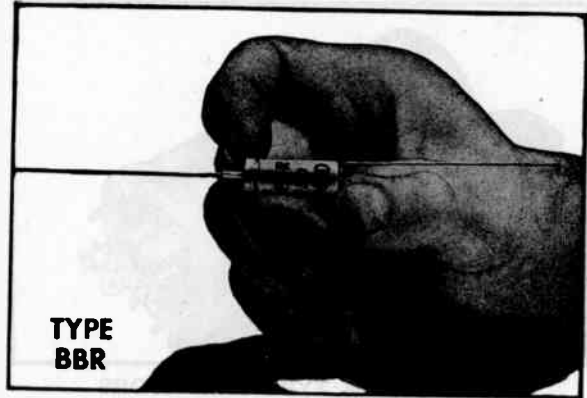
## TUBULAR CAN-TYPE DRY ELECTROLYTIC CAPACITORS



### "BLUE BEAVER" CAPACITORS

Types BR and BRD "Blue Beavers" are the most popular electrolytic capacitors employed for all applications where units are required for convenient mounting in small spaces beneath a chassis or connected directly in the wiring assembly. They are small in physical size and self-supporting by means of strong, bare tinned-copper wire leads, while the larger sizes may be mounted with a metal strap.

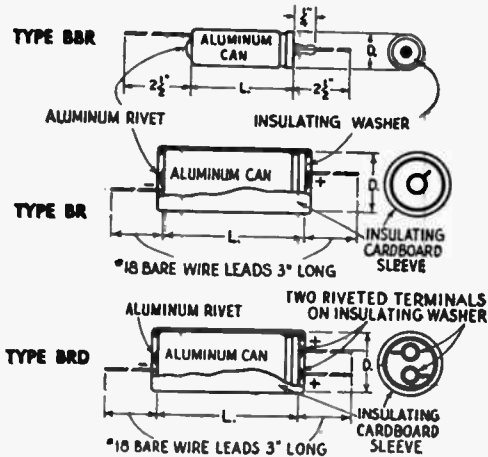
Cat. No.	Cap. Mfd.	Size—Inches Diam. x Length	List Price	Net Price
<b>25 V. D.C.</b>				
BR 102A	10	3/4 x 1 1/8	.75	.45
BR 202A	20	3/4 x 1 1/8	.80	.48
BR 252A	25	3/4 x 1 1/8	.85	.51
BR 502A	50	3/4 x 1 1/8	.95	.57
<b>50 V. D.C.</b>				
BR 550	5	3/4 x 1 1/8	.75	.45
BR 105	10	3/4 x 1 1/8	.80	.48
BR 205A	20	3/4 x 1 1/8	.85	.51
BR 255A	25	3/4 x 1 1/8	.90	.54
BR 505	50	3/4 x 1 1/8	1.05	.63
<b>160 V. D.C.</b>				
BR 415	4	3/4 x 1 1/8	.75	.45
BR 815	8	3/4 x 1 1/8	.80	.48
BR 1015	10	3/4 x 1 1/8	.80	.48
BR 1215	12	3/4 x 1 1/8	.85	.51
BR 1615	16	3/4 x 1 1/8	.90	.54
BR 2015A	20	3/4 x 1 1/8	.95	.57
BR 2515	25	3/4 x 1 1/8	.95	.57
BR 3015A	30	3/4 x 1 1/8	1.00	.60
BR 4015A	40	3/4 x 1 1/8	1.10	.66
BR 5015A	50	3/4 x 1 1/8	1.20	.72
BR 6015	60	3/4 x 2	1.30	.78
BR 8015A	80	3/4 x 2	1.45	.87
<b>250 V. D.C.</b>				
BR 425	4	3/4 x 1 1/8	.80	.48
BR 825	8	3/4 x 1 1/8	.80	.48
BR 1225A	12	3/4 x 1 1/8	1.00	.60
BR 1625	16	3/4 x 1 1/8	1.10	.66
BR 2025	20	3/4 x 1 1/8	1.20	.72
BR 3025A	30	3/4 x 1 1/8	1.30	.78
BR 4025A	40	3/4 x 2	1.40	.84
BR 5025	50	1 x 2	1.50	.90
<b>350 V. D.C.</b>				
BR 435	4	3/4 x 1 1/8	.85	.51
BR 835A	8	3/4 x 1 1/8	.90	.54
BR 1235A	12	3/4 x 1 1/8	1.05	.63
BR 1635A	16	3/4 x 1 1/8	1.20	.72
BR 2035A	20	3/4 x 1 1/8	1.30	.78
BR 3035	30	1 x 2	1.40	.84
BR 4035	40	1 x 2 1/2	1.50	.90
<b>450 V. D.C.</b>				
BR 145	1	3/4 x 1 1/8	.80	.48
BR 245	2	3/4 x 1 1/8	.85	.51
BR 445	4	3/4 x 1 1/8	.90	.54
BR 845A	8	3/4 x 1 1/8	.95	.57
BR 1045A	10	3/4 x 1 1/8	1.05	.63
BR 1245A	12	3/4 x 1 1/8	1.15	.69
BR 1645A	16	3/4 x 2	1.35	.81
BR 2045A	20	3/4 x 2	1.50	.90
BR 3045A	30	1 x 2 1/2	1.65	.99
BR 4045A	40	1 x 2 1/2	2.00	1.20
<b>500 V. D.C.</b>				
BR 450A	4	3/4 x 1 1/8	1.20	.72
BR 850A	8	3/4 x 1 1/8	1.30	.78
BR 1650A	16	1 x 2	2.00	1.20
BR 2050A	20	1 x 2	2.40	1.44
BR 3050A	30	1 x 2 1/2	2.75	1.65



### MINIATURE TUBULAR CAPACITORS

Type BBR "baby BR-type capacitors" are designed for use in compact apparatus such as hearing aids, pocket radios and other small assemblies. They are hermetically sealed in tubular aluminum containers and ideally suited to meet requirements in low voltage circuits.

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Ins. Dia. x Lth.	List Price	Net Price
BBR 50-3	50	3	3/8 x 1 1/8	\$1.00	\$.60
BBR 25-3	25	3	3/8 x 1 1/8	1.00	.60
BBR 50-6	50	6	3/8 x 1 1/8	1.00	.60
BBR 25-6	25	6	3/8 x 1 1/8	1.00	.60
BBR 5-6	5	6	3/8 x 1 1/8	1.00	.60
BBR 20-25	20	25	3/8 x 1 1/8	1.00	.60
BBR 10-25	10	25	3/8 x 1 1/8	1.00	.60
BBR 10-50	10	50	3/8 x 1 1/8	1.00	.60
BBR 5-50	5	50	3/8 x 1 1/8	1.00	.60
BBR 10-90	10	90	3/8 x 1 1/8	1.00	.60
BBR 16-90	16	90	3/8 x 1 1/8	1.00	.60



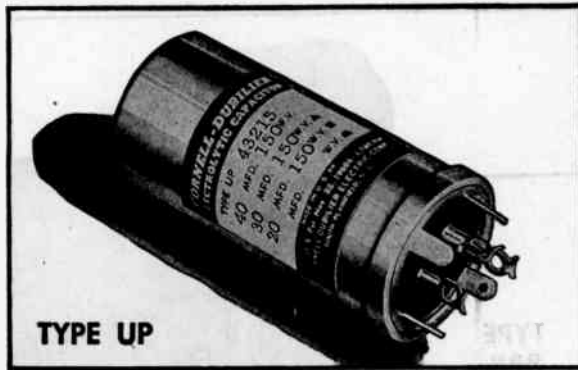
Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Ins. Dia. x Lgth.	List Price	Net Price
BRD 202B	20-20	25	3/8 x 1 1/8	\$1.10	\$.66
BRD 2215A	20-20	150	3/8 x 1 1/8	1.30	.78
BRD 3315A	30-30	150	3/8 x 1 1/8	1.50	.90
BRD 4215A	40-20	150	3/8 x 1 1/8	1.50	.90
BRD 4415A	40-40	150	1 x 1 1/8	1.70	1.02
BRD 6315A	50-30	150	1 x 1 1/8	1.70	1.02
BRD 6515A	50-50	150	1 x 2 1/8	1.90	1.14
BRD 8415	80-40	150	1 x 2 1/8	2.10	1.26
BRD 2225A	20-20	250	1 x 1 1/8	1.80	1.08
BRD 4225	40-20	250	1 x 2 1/8	1.95	1.17
BRD 2235A	20-20	350	1 x 2 1/8	2.10	1.26
BRD 8D45	8-8	450	1 x 1 1/8	1.70	1.02
BRD 1145A	10-10	450	1 x 2	1.85	1.11
BRD 16D45	16-16	450	1 x 3	2.25	1.36
BRD 2245	20-20	450	1 x 3	2.35	1.41

For cardboard tube electrolytic units, see page 6.  
\* Reg. U. S. Pat. Off.





## PRONG-BASE DRY ELECTROLYTIC CAPACITORS



TYPE UP

### PRONG-BASE TYPE CAPACITORS

Type UP capacitors are small, conveniently-mounted, metal can-type electrolytic units furnished with bakelite and metal mounting washers. Terminals are tinned for soldering.

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—In. D. x L.	List Price	Net Price
UP 3M-10	3000	10	1 1/4 x 2 1/4	\$4.50	\$2.70
UP 1M-15	1000	15	1 x 2 1/4	3.25	1.95
UP 2M-15	2000	15	1 1/4 x 2 1/4	4.70	2.82
UP 3M-15	3000	15	1 1/4 x 3	4.80	2.88
UP 40-25	40	25	1/4 x 2	1.10	.66
UP 100-25	100	25	3/8 x 2	1.45	.87
UP 500-25	500	25	1 x 2	2.45	1.47
UP 1M-25	1000	25	1 1/4 x 2	3.55	2.13
UP 100-50	100	50	3/8 x 2	2.35	1.41
UP 150-50	150	50	1 x 2	2.45	1.47
UP 500-50	500	50	1 1/4 x 2	2.65	1.59
UP 1M-50	1000	50	1 1/4 x 3 1/4	3.65	2.19
UP 3015	30	150	1 1/4 x 2	1.25	.75
UP 4015	40	150	1 x 2	1.35	.81
UP 6015	50	150	1 x 2	1.45	.87
UP 6015	60	150	1 x 2	1.55	.93
UP 8015	80	150	1 x 2	1.75	1.06
UP 10015	100	150	1 x 2 1/4	1.85	1.11
UP 16015	150	150	1 x 3	1.95	1.17
UP 2025	20	250	3/8 x 2	1.45	.87
UP 4025	40	250	1 x 2	1.70	1.02
UP 6025	60	250	1 x 2 1/4	2.05	1.23
UP 5030	50	300	1 x 2 1/4	1.95	1.17
UP 8030	80	300	1 x 3	2.35	1.41
UP 1535	15	350	1 x 2	1.45	.87
UP 3035	30	350	1 x 2	1.70	1.02
UP 5035	50	350	1 x 3	2.05	1.23
UP 8035	80	350	1 1/4 x 2 1/4	2.75	1.65
UP 12535	125	350	1 1/4 x 3	3.55	2.13
UP 8040	80	400	1 1/4 x 3	3.85	2.31
UP 1045	10	450	1 x 2	1.30	.78
UP 1A157	10	450	3/8 x 2	1.30	.78
UP 1545	15	450	1 x 2	1.55	.93
UP 2045	20	450	1 x 2	1.75	1.05
UP 3045	30	450	1 x 2 1/4	1.90	1.14
UP 4045	40	450	1 x 3	2.25	1.35
UP 5045	50	450	1 x 3 1/4	2.60	1.56
UP 8045	80	450	1 1/4 x 3	3.85	2.31
UP 1050	10	500	1 x 2	1.75	1.06
UP 2050	20	500	1 x 2 1/4	2.65	1.59
UP 3050	30	500	1 x 3	3.50	2.10
UP 4050	40	500	1 x 3 1/4	4.25	2.55
UP 8050	80	500	1 1/4 x 3 3/4	4.65	2.79

### Dual Section Units

UP 11M-15	1000-1000	15	1 1/4 x 2 1/4	\$4.95	\$2.97
UP 22-25	20-20	25	1 x 2	1.35	.81
UP 44-25	40-40	25	1 x 2	1.50	.90
UP 55-50	50-50	50	1 x 2	1.75	1.05
UP 2215	20-20	150	1 x 2	1.55	.93
UP 3215	30-30	150	1 x 2	1.65	.99
UP 3315	30-30	150	1 x 2	1.75	1.05
UP 4215	40-20	150	1 x 2	1.75	1.05
UP 4315	40-30	150	1 x 2	1.85	1.11
UP 4415	40-40	150	1 x 2	1.95	1.17
UP 5315	50-30	150	1 x 2	1.95	1.17
UP 5515	50-50	150	1 x 2 1/4	2.10	1.26
UP 75D15	75-75	150	1 x 3	2.35	1.41
UP 8415	80-40	150	1 x 2 1/4	2.25	1.35
UP 1125	10-10	250	1 x 2	1.65	.99
UP 2225	20-20	250	1 x 2	1.75	1.05
UP 3325	30-30	250	1 x 2 1/4	2.05	1.23
UP 4225	40-20	250	1 x 2 1/4	2.05	1.23
UP 4425	40-40	250	1 x 3	2.30	1.38
UP 5530	50-50	300	1 1/4 x 2 1/4	2.60	1.56
UP 8830	80-80	300	1 1/4 x 3	2.95	1.77
UP 15D35	15-15	350	1 x 2	2.10	1.26
UP 2235	20-20	350	1 x 2 1/4	2.35	1.41
UP 3335	30-30	350	1 x 3	2.60	1.56
UP 5335	50-30	350	1 1/4 x 2 1/4	3.10	1.88
UP 15D40	15-15	400	1 x 2 1/4	2.30	1.38

### Dual Section Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—In. D. x L.	List Price	Net Price
UP 8140	80-10	400	1 1/4 x 3	\$4.00	\$2.40
UP 1145	10-10	450	1 x 2	2.10	1.26
UP 15D45	15-15	450	1 x 2 1/4	2.30	1.38
UP 2145	20-10	450	1 x 2 1/4	2.35	1.41
UP 2245	20-20	450	1 x 3	2.65	1.59
UP 3145	30-10	450	1 x 3	2.65	1.59
UP 3345	30-30	450	1 1/4 x 2 1/4	3.25	1.95
UP 4245	40-20	450	1 1/4 x 2 1/4	3.25	1.95
UP 4445	40-40	450	1 1/4 x 3	4.00	2.40
UP 8445	80-40	450	1 1/4 x 3 1/4	5.25	3.15
UP 2250	20-20	500	1 1/4 x 2 1/4	4.15	2.49
UP 4450	40-40	500	1 1/4 x 3 1/4	4.35	2.61
UP 4016C	40-20	150/25	1 x 2	1.70	1.02
UP 4015CV5	40-20	150/50	1 x 2	1.75	1.05
UP 2036C	20-20	350/25	1 x 2	1.90	1.14
UP 1045C	10-20	450/25	1 x 2	1.95	1.17
UP 2045C	20-20	450/25	1 x 2	2.00	1.20
UP 4045C	40-20	450/25	1 x 2	2.10	1.26
UP 8045C	80-20	450/25	1 1/4 x 3	4.25	2.55

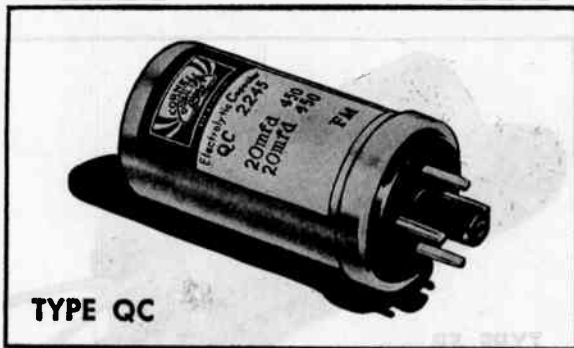
### Triple Section Units

UP 222-25	20-20-20	25	1 x 2	\$2.00	\$1.20
UP 444-25	40-40-40	25	1 x 2	2.25	1.35
UP 333-50	30-30-30	50	1 x 2	2.30	1.38
UP 22215	20-20-20	150	1 x 2	2.30	1.38
UP 33115	30-30-10	150	1 x 2	2.30	1.38
UP 42115	40-20-10	150	1 x 2	2.35	1.41
UP 42215	40-20-20	150	1 x 2	2.40	1.44
UP 43215	40-30-20	150	1 x 2	2.45	1.47
UP 44415	40-40-40	150	1 x 2 1/4	2.60	1.56
UP 47415	40-70-40	150	1 x 3	2.70	1.62
UP 64215	60-40-20	150	1 x 2 1/4	2.65	1.59
UP 84215	80-40-20	150	1 x 3	2.80	1.68
UP 22125	20-20-10	250	1 x 2	2.65	1.59
UP 32125	30-20-10	250	1 x 2 1/4	2.95	1.77
UP 42225	40-20-20	250	1 x 3	3.00	1.80
UP 11135	10-10-10	350	1 x 2	2.30	1.38
UP 22135	20-20-10	350	1 x 2 1/4	2.45	1.47
UP 335-2125	30/20-10	350/250	1 x 3	2.75	1.65
UP 4CJ66	20-10/5	350/250	1 x 2	2.45	1.47
UP 3135-225	30-10/20	350/250	1 x 3	2.75	1.65
UP 11145	10-10-10	450	1 x 2 1/4	2.50	1.50
UP 15D145	15-15-10	450	1 x 3 1/4	2.85	1.71
UP 21145	20-10-10	450	1 x 3	2.85	1.71
UP 22245	20-20-20	450	1 1/4 x 2 1/4	3.95	2.37
UP 32245	30-20-20	450	1 1/4 x 3	4.05	2.43
UP 41145	40-10-10	450	1 1/4 x 3 1/4	3.95	2.37
UP 43245	40-30-20	450	1 1/4 x 3 1/4	4.15	2.49
UP 6245	60-20-20	450	1 1/4 x 3 1/4	4.25	2.55
UP 6CJ67	20/15/10	450/350/300	1 x 3	2.95	1.77
UP 6CJ17	15/20/20	450/350/250	1 x 3	2.95	1.77
UP 15D45-130	15-15/10	450/300	1 x 3	2.80	1.68
UP 6CJ68	15-5/15	450/350	1 x 3	2.45	1.47
UP 4CJ69	15-15/1200	150/1.5	1 x 3	2.45	1.47
UP 2215X10	20-20/100	150/10	1 x 2	2.45	1.47
UP 4215X10	40-20/100	150/10	1 x 2	2.55	1.53
UP 2215X25	20-20/250	150/10	1 x 2	2.65	1.59
UP 4215X25	40-20/250	150/10	1 x 2	2.65	1.59
UP 3315X20	30-30/200	150/10	1 x 2	2.65	1.59
UP 4215X20	40-20/200	150/10	1 x 2	2.65	1.59
UP 2215C	20-20/20	150/25	1 x 2	2.00	1.20
UP 3315C	30-30/20	150/25	1 x 2	2.20	1.32
UP 4215C	40-20/20	150/25	1 x 2	2.20	1.32
UP 4215C10	40-20/100	150/25	1 x 2	2.45	1.47
UP 4215C20	40-20/200	150/25	1 x 2 1/4	2.65	1.59
UP 4315C	40-30/20	150/25	1 x 2	2.35	1.41
UP 4415C	40-40/20	150/25	1 x 2	2.40	1.44
UP 5315C	50-30/20	150/25	1 x 2	2.35	1.41
UP 5315C10	50-30/100	150/25	1 x 2 1/4	2.45	1.47
UP 5515C	50-50/20	150/25	1 x 2 1/4	2.55	1.53
UP 6215C	60-20/20	150/25	1 x 2	2.45	1.47
UP 6415C	60-40/20	150/25	1 x 2 1/4	2.55	1.53
UP 8415C	80-40/20	150/25	1 x 2 1/4	2.65	1.59
UP 3220C	30-20/20	200/25	1 x 2	2.45	1.47
UP 15D25C	15-15/20	250/25	1 x 2	2.45	1.47
UP 215525C	20-15/20	250/25	1 x 2	2.50	1.50
UP 3325C	30-30/20	250/25	1 x 2 1/4	2.70	1.62
UP 2230C	20-20/20	300/25	1 x 2	2.60	1.56
UP 3330CV5	30-30/25	300/50	1 x 3	2.80	1.68
UP 415S30C	40-15/20	300/25	1 x 3	2.75	1.65
UP 1135C	10-10/20	350/25	1 x 2	2.30	1.38
UP 15S135C	15-10/20	350/25	1 x 2	2.40	1.44
UP 115S35C	10-15/20	350/25	1 x 2	2.40	1.44
UP 2135C	20-10/20	350/25	1 x 2	2.45	1.47
UP 2235C	20-20/20	350/25	1 x 2 1/4	2.80	1.68
UP 3135C	30-10/20	350/25	1 x 2 1/4	2.80	1.68
UP 335-330C	30/30/20	350/300/25	1 x 3	2.85	1.71
UP 3335C	30-30/20	350/25	1 1/4 x 2	2.90	1.74
UP 1145C	10-10/20	450/25	1 x 2	2.35	1.41
UP 15D45C	15-15/20	450/25	1 x 2 1/4	2.55	1.53
UP 2145C	20-10/20	450/25	1 x 2 1/4	2.55	1.53
UP 215S45C	20-15/20	450/25	1 x 3	2.80	1.68
UP 2245C	20-20/20	450/25	1 x 3	2.95	1.77
UP 3345C	30-30/20	450/25	1 1/4 x 2 1/4	3.15	1.89
UP 4245C	40-20/20	450/25	1 1/4 x 2 1/4	3.15	1.89
UP 4445C	40-40/20	450/25	1 1/4 x 3	4.45	2.67

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## ROUND CAN DRY ELECTROLYTIC CAPACITORS



**TYPE QC**

### PLUG-IN TYPE CAPACITORS

Type QC Capacitors are hermetically sealed in round aluminum containers and provided with a four-pin octal base mounting in order to be readily removed and replaced in standard octal base tube sockets.

Cat. No.	Cap. Mid.	D.C. W. Volts	Size—Ins. Dia. x Lgth.	List Price	Net Price
QC 2215	20-20	150	1 1/4 x 2 1/2	\$3.10	\$1.86
QC 4415	40-40	150	1 1/4 x 2 1/2	3.90	2.34
QC 22215	20-20-20	150	1 1/4 x 2 1/2	4.60	2.76
QC 44415	40-40-40	150	1 1/4 x 2 1/2	5.00	3.00
QC 1045	10	450	1 1/4 x 2 1/2	2.60	1.56
QC 2045	20	450	1 1/4 x 2 1/2	3.50	2.10
QC 4045	40	450	1 1/4 x 2 1/2	4.50	2.70
QC 8045	80	450	1 1/4 x 3	7.70	4.62
QC 1145	10-10	450	1 1/4 x 2 1/2	4.20	2.52
QC 2245	20-20	450	1 1/4 x 2 1/2	5.30	3.18
QC 11145	10-10-10	450	1 1/4 x 2 1/2	5.00	3.00
QC 33145C	30-30-10/20	450/50	1 1/4 x 4 1/2	7.75	4.65

### TYPE UP CAPACITORS (Continued) Quadruple Section Units

UP 444315	40-40-40-30	150	1 1/4 x 2	\$3.35	\$2.01
UP 22215C	20-20-20-20	150/25	1 1/4 x 2	3.80	2.28
UP 32215X20	30-20-20/200	150/10	1 1/4 x 2	3.15	1.89
UP 33315C4	30-30-30/40	150/25	1 1/4 x 2	3.30	1.98
UP 44315C	40-40-30/20	150/25	1 1/4 x 2	3.10	1.86
UP 44215X20	40-40-20/200	150/10	1 1/4 x 2	3.15	1.89
UP 4415C44	40-40/40-40	150/25	1 1/4 x 2	3.35	2.01
UP 4415C11	40-40/100-100	150/25	1 1/4 x 2	3.45	2.07
UP 44415C	40-40-40/20	150/25	1 1/4 x 2	3.10	1.86
UP 44415C10	40-40-40/100	150/25	1 1/4 x 2	3.15	1.89
UP 44415C16	40-40-40/160	150/25	1 1/4 x 2	3.20	1.92
UP 53315C10	50-30-30/100	150/25	1 1/4 x 2	3.15	1.89
UP 55515C	50-50-50/20	150/25	1 1/4 x 2	3.40	2.04
UP 64215X20	60-40-20/200	150/10	1 1/4 x 2	3.35	2.01
UP 75715C3	75-75-75/30	150/25	1 1/4 x 3	3.85	2.31
UP 84415C	80-40-40/20	150/25	1 1/4 x 2	3.45	2.07
UP 84415C10	80-40-40/100	150/25	1 1/4 x 2 1/2	3.50	2.10
UP 42125C	40-20-10/20	250/25	1 1/4 x 2	3.20	1.92
UP 442130	40-40-20-10	300	1 1/4 x 2 1/2	4.00	2.40
UP 11135C	10-10-10/20	350/25	1 1/4 x 2	2.95	1.77
UP 21535C	20-10-5/10	350/25	1 1/4 x 2	3.05	1.83
UP 32235C	30-20-20/20	350/25	1 1/4 x 2 1/2	3.35	2.01
UP 44235C	40-40-20/20	350/25	1 1/4 x 3	3.85	2.31
UP 2245C	20-20-20-20	450/25	1 1/4 x 2	3.55	2.13
UP 2245-3335	20-20/30-30	450/350	1 1/4 x 3	4.35	2.61
UP 5545	5-5-5-5-5	450	1 1/4 x 2	3.05	1.83
UP 111145	10-10-10-10	450	1 1/4 x 2	3.25	1.95
UP 222245	20-20-20-20	450	1 1/4 x 3	4.50	2.70
UP 411145	40-10-10-10	450	1 1/4 x 3	4.60	2.76
UP 11145C	10-10-10/20	450/25	1 1/4 x 2	3.05	1.83
UP 22245C	20-20-20/20	450/25	1 1/4 x 2 1/2	3.95	2.37
UP 22245C	30-15-15/40	450/25	1 1/4 x 2 1/2	3.95	2.37
UP 315D45C4	30-20-20/20	450/25	1 1/4 x 3	4.15	2.49
UP 32245C	30-30-10/20	450/25	1 1/4 x 3	4.25	2.55
UP 33145C	30-30-10/20	450/25	1 1/4 x 3	4.35	2.61
UP 33245C	30-30-20/20	450/25	1 1/4 x 3	4.35	2.61
UP 43145C	40-30-10/20	450/25	1 1/4 x 3	4.15	2.49

### Hardware For Type UP Capacitors

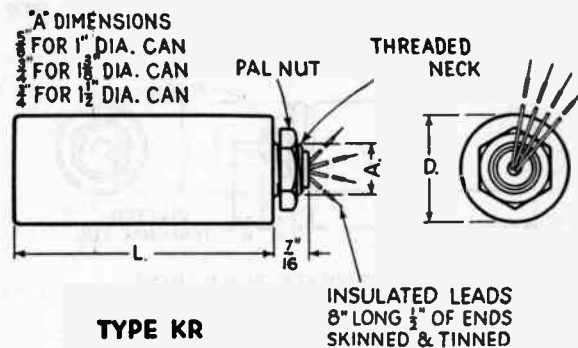
Cat. No.	Item	Description	List Price	Net Price
22272	Wrench for	Mtg. UP Units	\$1.13	\$0.67
19891	Bakelite Washer	For 1/4" UP	.06	.03
19884	Bakelite Washer	For 1/8" UP	.06	.03
19888	Bakelite Washer	For 1/16" UP	.06	.03
19890	Metal Washer	For 1/4" UP	.06	.03
19883	Metal Washer	For 1/8" UP	.06	.03
19887	Metal Washer	For 1/16" UP	.06	.03
21368-1	Mounting Clip	For 1/4" UP	.14	.08
21368-2	Mounting Clip	For 1/8" UP	.14	.08
21368-3	Mounting Clip	For 1/16" UP	.14	.08
22153-1	Insulating Tube	For 1/4 x 2" UP	.06	.03
22153-4	Insulating Tube	For 1 x 2" UP	.06	.03
22153-6	Insulating Tube	For 1 x 3" UP	.06	.03
22153-7	Insulating Tube	For 1 1/4 x 2" UP	.06	.03
22153-9	Insulating Tube	For 1 1/4 x 3" UP	.06	.03



**TYPE KR**

### SCREW-NECK TYPE CAPACITORS

Types KR and KRC single-hole mounting units are compact etched foil type dry electrolytic capacitors furnished in round (inverted mounting) aluminum cans. Available in single, dual and triple sections with color-coded leads. Made in all popular voltage ratings for use in A.C.-D.C. or voltage-doubler midgets and A.C. operated sets.



**TYPE KR**

Cat. No.	Cap. Mid.	D.C. W. Volts	Size—Ins. Dia. x Lth.	List Price	Net Price
KR 105	50	25	1 x 2 1/2	\$1.75	\$1.06
KR 204	4	250	1 x 2 1/2	1.55	.93
KR 208	8	250	1 x 2 1/2	1.60	.96
KR 212	12	250	1 x 2 1/2	1.75	1.05
KR 225	25	250	1 x 3 1/2	2.00	1.20
KR 350	50	300	1 1/8 x 3 1/2	3.00	1.80
KR 504	4	450	1 x 2 1/2	1.70	1.02
KR 508	8	450	1 x 2 1/2	1.75	1.05
KR 612A	12	450	1 x 2 1/2	2.15	1.29
KR 616A	16	450	1 x 3 1/2	2.40	1.44
KR 520	20	450	1 1/8 x 2 1/2	2.65	1.59
KR 530	30	450	1 1/8 x 3 1/2	3.00	1.80
KR 540	40	450	1 1/8 x 4 1/2	3.40	2.04
KR 604	4	600	1 1/8 x 3 1/2	3.00	1.80
KR 608	8	600	1 1/8 x 4 1/2	4.00	2.40
KR 616	16	600	1 1/8 x 4 1/2	5.00	3.00

### Common Negative Units

KRC 248	4-8	250	1 x 3	\$2.15	\$1.29
KRC 288	8-8	250	1 x 3	2.30	1.38
KRC 288B	8-8-8	250	1 1/2 x 3	3.80	2.28
KRC 548	4-8	450	1 x 3	2.50	1.50
KRC 588	8-8	450	1 1/2 x 2 1/2	2.75	1.65
KRC 511B	16-16	450	1 1/2 x 3 1/2	3.50	2.10
KRC 5220	20-20	450	1 1/2 x 4 1/2	4.00	2.40
KRC 588B	8-8-8	450	1 1/2 x 3 1/2	4.25	2.55

### Separate Section Units

KR 248	4-8	250	1 1/8 x 2 1/2	\$2.15	\$1.29
KR 288	8-8	250	1 1/8 x 2 1/2	2.30	1.38
KR 288B	8-8-8	250	1 1/8 x 3 1/2	3.80	2.28
KR 2881	8-8-16	250	1 1/8 x 3 1/2	4.05	2.43
KR 2811	8-16-16	250	1 1/8 x 3 1/2	4.30	2.58
KR 548A	4-8	450	1 1/8 x 3	2.50	1.50
KR 588A	8-8	450	1 1/8 x 3	2.75	1.65
KR 5816A	8-16	450	1 1/8 x 4 1/2	3.25	1.95
KR 5888A	8-8-8	450	1 1/8 x 4 1/2	4.25	2.55



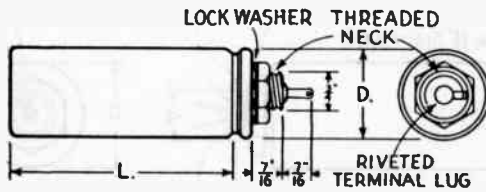
## REPLACEMENT DRY ELECTROLYTIC CAPACITORS



**TYPE WR**

### REPLACEMENTS FOR WET-TYPE UNITS

These dry electrolytic capacitors furnished in round aluminum cans are offered as substitutes for replacement of wet electrolytic units which have been discontinued in manufacture during the war. The limited range of capacities listed below cover practically all applications in standard radio receivers and other equipment in which wet type electrolytic capacitors were originally employed.



**WET ELECTROLYTIC REPLACEMENT  
TYPE WR**

### 450-Volt D.C. Replacement Capacitors

Cat. No.	Cap. Mfd.	Replacement for	Size—Ins. Dia. x Lth.	List Price	Net Price
<b>WR 10</b>	10	4 to 12 mfd.	1 1/4 x 2 1/4	\$1.45	<b>\$0.87</b>
<b>WR 20</b>	20	16 to 20 mfd.	1 1/4 x 2 1/2	2.25	<b>1.35</b>
<b>WR 30</b>	30	20 to 30 mfd.	1 1/4 x 3 1/2	2.60	<b>1.56</b>
<b>WR 40</b>	40	30 to 40 mfd.	1 1/4 x 3 3/4	2.90	<b>1.74</b>

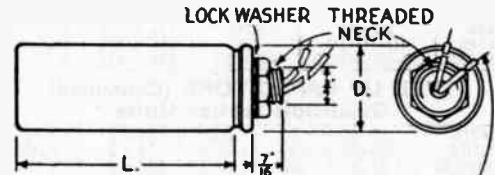
For one-inch diameter cans wet electrolytic replacements we recommend employing C-D Type KR capacitors in one-inch diameter cans of equivalent capacity and voltage ratings.



**TYPE EB**

### FILTER REPLACEMENT UNITS

Type EB electrolytic capacitors are especially suited for replacement purposes in radio receivers to replace units of larger physical sizes. They are identical in mounting hole dimensions and general construction to Type WR capacitors except they are provided with insulated color-coded wire leads 8" long brought through the threaded neck of the unit.



**TYPE EB**

**INSULATED LEADS  
8" LONG 1/2" OF ENDS  
SKINNED & TINNED**

### 450-Volt D.C. Replacement Capacitors

Cat. No.	Cap. Mfd.	Size—Ins. Dia. x Lth.	List Price	Net Price
<b>EB 9080</b>	8	1 1/2 x 4 3/8	\$1.80	<b>\$1.06</b>
<b>EB 9100</b>	10	1 1/2 x 4 3/8	2.10	<b>1.26</b>
<b>EB 9120</b>	12	1 1/2 x 4 3/8	2.35	<b>1.41</b>
<b>EB 9160</b>	16	1 1/2 x 4 3/8	2.65	<b>1.59</b>
<b>EB 9180</b>	18	1 1/2 x 4 3/8	2.75	<b>1.65</b>
<b>EB 9200</b>	20	1 1/2 x 4 3/8	2.80	<b>1.68</b>
<b>EB 8800</b>	8-8	1 1/2 x 4 3/8	2.70	<b>1.62</b>

## "ELECTROLYTIC CAPACITORS"

By **PAUL McK. DEELEY**



Here in one masterly volume, "Electrolytic Capacitors," you will find a wealth of the most practical information ever published on the subject of electrolytic capacitors.

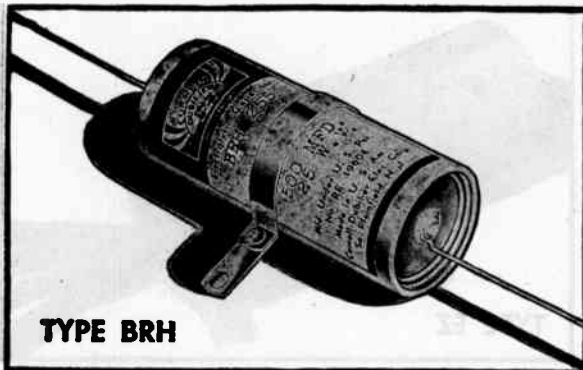
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## HIGH CAPACITY DRY ELECTROLYTIC CAPACITORS

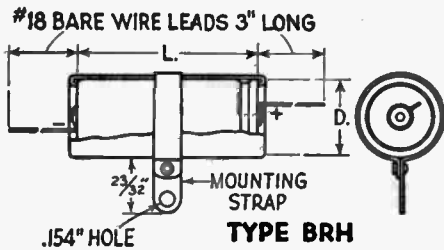


**TYPE BRH**

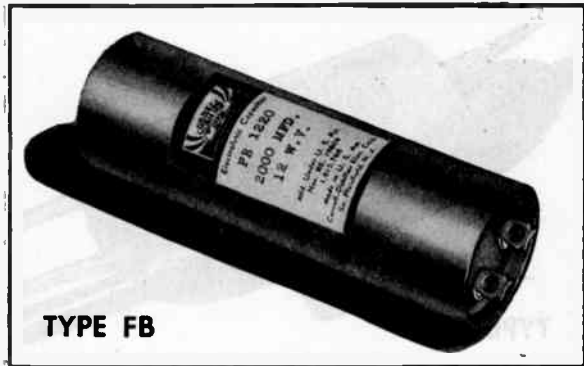
### METAL TUBULAR TYPE CAPACITORS

These compact C-D etched foil electrolytic capacitors have been especially designed for all applications requiring high capacity units operating in low voltage D.C. circuits. They are widely employed in portable radio power rectifying circuits, electric fence devices, telephone and D.C. timing circuits. Units are available in standard capacities and voltage ratings for all uses.

Hermetically sealed in pure aluminum cans with an external cardboard insulating sleeve, these units are provided with metal mounting strap and bare wire leads for convenient wiring into any circuit assembly. They are constructed identically the same as Type BR "Blue Beavers" except all units are provided with a mounting strap.



Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
BRH 601	100	6	5/8 x 1 1/16	\$1.20	\$ .72
BRH 6025	250	6	5/8 x 1 1/16	1.45	.87
BRH 605A	500	6	5/8 x 1 1/16	1.70	1.02
BRH 610	1000	6	5/8 x 2	2.25	1.35
BRH 620	2000	6	1 x 2 1/2	3.90	2.34
BRH 121A	100	12	5/8 x 1 1/16	1.20	.72
BRH 1225A	250	12	5/8 x 1 1/16	1.75	1.05
BRH 125A	500	12	5/8 x 2	1.90	1.14
BRH 1210	1000	12	1 x 2	2.90	1.74
BRH 1220	2000	12	1 x 3	4.80	2.88
BRH 151A	100	15	5/8 x 1 1/16	1.70	1.02
BRH 1525A	250	15	5/8 x 2	2.10	1.26
BRH 155A	500	15	5/8 x 2	3.70	2.22
BRH 1510	1000	15	1 x 2	5.60	3.36
BRH 1520	2000	15	1 x 3	1.20	.72
BRH 251A	100	25	5/8 x 1 1/16	2.00	1.20
BRH 2525A	250	25	5/8 x 1 1/16	2.25	1.35
BRH 255A	500	25	1 x 2	1.50	.90
BRH 501	100	50	5/8 x 2	1.70	1.02
BRH 5015	150	50	5/8 x 2	2.36	1.42
BRH 5025	250	50	1 x 2	4.60	2.76
BRH 5050	500	50	1 x 3		



**TYPE FB**

### INSULATED CAN CAPACITORS

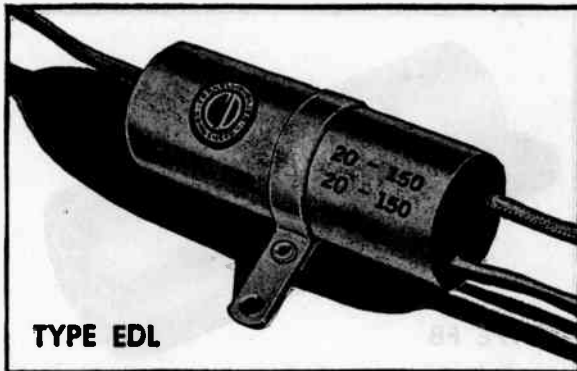
Type FB capacitors in round aluminum cans are designed for high capacity, low voltage applications, and are especially popular as replacements in motion picture sound equipment, and other low voltage circuits. All units are provided with lug terminals on a moulded bakelite cover and furnished with an external cardboard insulating sleeve for protection against short circuits.

Type FB is same as FA except lug terminal.

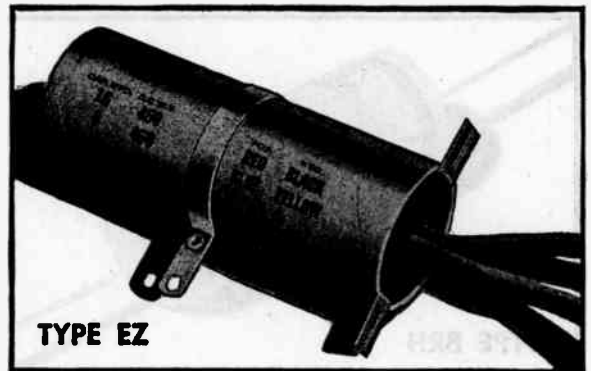
Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
FB 1005	500	10	1 1/2 x 2 1/4	\$2.55	\$1.53
FB 1010	1000	10	1 1/2 x 2 1/4	2.70	1.62
FB 1015	1500	10	1 1/2 x 2 1/4	4.25	2.55
FB 1020	2000	10	1 1/2 x 2 1/4	4.55	2.73
FB 1030	3000	10	1 1/2 x 3 1/4	5.60	3.36
FB 1040	4000	10	1 1/2 x 4 1/4	5.90	3.54
FB 1050	5000	10	1 1/2 x 4 1/4	6.30	3.78
FB 1060	6000	10	1 1/2 x 4 1/4	6.70	4.02
FB 1205	500	12	1 1/2 x 2 1/4	2.75	1.65
FB 1210	1000	12	1 1/2 x 2 1/4	2.90	1.74
FB 1215	1500	12	1 1/2 x 2 1/4	4.50	2.70
FB 1220	2000	12	1 1/2 x 3	4.80	2.88
FB 1225	2500	12	1 1/2 x 3	5.40	3.24
FB 1230	3000	12	1 1/2 x 4	6.00	3.60
FB 1240	4000	12	1 1/2 x 4	7.10	4.26
FB 1260	6000	12	2 x 4	7.50	4.50
FB 1505	500	15	1 1/2 x 2 1/4	3.10	1.86
FB 1510	1000	15	1 1/2 x 2 1/4	3.70	2.22
FB 1515	1500	15	1 1/2 x 2 1/4	5.40	3.24
FB 1520	2000	15	1 1/2 x 3	5.80	3.48
FB 1530	3000	15	1 1/2 x 4	7.00	4.20
FB 1540	4000	15	1 1/2 x 4	8.10	4.86
FB 1560	6000	15	2 x 4	8.70	5.22
FB 1805	500	18	1 1/2 x 2 1/4	3.40	2.04
FB 1810	1000	18	1 1/2 x 2 1/4	4.00	2.40
FB 1820	2000	18	1 1/2 x 3	6.20	3.72
FB 1840	4000	18	1 1/2 x 4	8.75	5.25
FB 2005	500	20	1 1/2 x 2 1/4	3.75	2.25
FB 2010	1000	20	1 1/2 x 3	4.40	2.64
FB 2020	2000	20	1 1/2 x 4	6.50	3.90
FB 2040	4000	20	2 x 4	9.25	5.55
FB 2505	500	25	1 1/2 x 2 1/4	4.00	2.40
FB 2510	1000	25	1 1/2 x 3	4.85	2.91
FB 2520	2000	25	1 1/2 x 4	7.20	4.32
FB 2530	3000	25	1 1/2 x 4	8.95	5.37
FB 2540	4000	25	2 x 4	9.85	5.91
FB 2550	5000	25	2 1/2 x 4	10.25	6.15
FB 3005	500	30	1 1/2 x 3	5.25	3.15
FB 3010	1000	30	1 1/2 x 4	5.75	3.45
FB 3020	2000	30	1 1/2 x 4	7.90	4.74
FB 3030	3000	30	2 x 4	9.15	5.49
FB 3040	4000	30	2 1/2 x 4	11.20	6.72
FB 3505	500	35	1 1/2 x 3	5.25	3.15
FB 3510	1000	35	1 1/2 x 4	6.50	3.90
FB 3520	2000	35	1 1/2 x 4	9.00	5.40
FB 3530	3000	35	2 x 4	11.60	6.96
FB 3540	4000	35	2 1/2 x 4	11.60	6.96
FB 4005	500	40	1 1/2 x 3	5.85	3.51
FB 4010	1000	40	1 1/2 x 4	7.85	4.71
FB 4020	2000	40	1 1/2 x 4 1/2	9.25	5.55
FB 4030	3000	40	2 x 4 1/2	10.10	6.06
FB 4040	4000	40	2 1/2 x 4 1/2	11.90	7.14
FB 5005	500	50	1 1/2 x 3	4.80	2.88
FB 5010	1000	50	1 1/2 x 4	8.50	5.10
FB 5020	2000	50	1 1/2 x 4 1/2	10.50	6.30
FB 5030	3000	50	2 x 4 1/2	11.40	6.84
FB 5040	4000	50	2 1/2 x 4 1/2	12.65	7.59



## CARDBOARD TUBE DRY ELECTROLYTIC CAPACITORS



**TYPE EDL**



**TYPE EZ**

### CARDBOARD TUBE UNITS (Formerly Type BRL)

Type EDL Capacitors are dual and triple common negative units in cardboard tube containers with wax-filled ends. Capacities, voltages and polarity of the leads are clearly defined by color coding stamped on the cardboard tube casing. Units are provided with insulated wire leads brought out at both ends of the unit. A mounting strap around the center of the cardboard tube casing enables mounting the unit with one screw under the chassis assembly.

#### Dual Common Negative Units

Cat. No.	Cap. Mid.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EDL 2202	20-20	25	5/8 x 2 1/4	\$1.10	\$ .66
EDL 1115	10-10	50	5/8 x 2 1/4	1.15	.69
EDL 2115	20-10	150	5/8 x 2 1/4	1.25	.76
EDL 2215	20-20	150	5/8 x 2 1/4	1.30	.78
EDL 3215	30-20	150	5/8 x 2 1/4	1.45	.87
EDL 4215	30-30	150	5/8 x 2 1/4	1.60	.96
EDL 4215	40-20	150	5/8 x 2 1/4	1.50	.90
EDL 4315	40-30	150	5/8 x 2 1/4	1.60	.96
EDL 4415	40-40	150	1 x 2 3/4	1.70	1.02
EDL 5315	50-30	150	1 x 2 3/4	1.70	1.02
EDL 5515	50-50	150	1 x 3	1.85	1.11
EDL 8415	80-40	150	1 1/4 x 3	1.95	1.17
EDL 16825	16-8	250	3/4 x 2 3/4	1.60	.96
EDL 16D25	16-16	250	3/4 x 2 3/4	1.70	1.02
EDL 2225	20-20	250	1 x 2 3/4	1.80	1.08
EDL 7V225	75-20	250	1 1/4 x 3 1/4	2.25	1.35
EDL 8D45	8-8	450	1 1/4 x 2 3/4	1.70	1.02
EDL 16845	16-8	450	1 1/4 x 3	2.00	1.20
EDL 16D45	16-16	450	1 1/4 x 3	2.30	1.38
EDL 2245	20-20	450	1 1/4 x 3 3/4	2.40	1.44

#### Triple Common Negative Units

EDL 22215	20-20-20	150	1 1/4 x 2 3/4	\$2.20	\$1.32
EDL 32V215	30-25-20	150	1 1/4 x 2 3/4	2.25	1.35
EDL 42215	40-20-20	150	1 1/4 x 2 3/4	2.30	1.38
EDL 43215	40-30-20	150	1 1/4 x 3	2.40	1.44
EDL 44215	40-40-20	150	1 1/4 x 3	2.40	1.44
EDL 44415	40-40-40	150	1 1/4 x 3	2.50	1.50
EDL 2216C	20-20, 20	150, 25	1 1/4 x 2 3/4	1.90	1.14
EDL 3316C	30-30, 20	150, 25	1 1/4 x 2 3/4	2.00	1.20
EDL 4216C	40-20, 20	150, 25	1 1/4 x 2 3/4	2.00	1.20
EDL 4416C	40-40, 20	150, 25	1 1/4 x 2 3/4	2.10	1.26
EDL 5316C	50-30, 20	150, 25	1 1/4 x 2 3/4	2.10	1.26
EDL 5516C	50-50, 20	150, 25	1 1/4 x 3	2.25	1.35
EDL 8416C	80-40, 20	150, 25	1 1/4 x 3	2.45	1.47
EDL 3215C10	30-20, 100	150, 25	1 1/4 x 2 3/4	2.20	1.32
EDL 5315X20	50-30, 200	150, 10	1 1/4 x 3	2.45	1.47
EDL 5315C10	50-30, 100	150, 25	1 1/4 x 3	2.40	1.44
EDL 8216C10	80-20, 100	150, 25	1 1/4 x 3	2.55	1.53
EDL 2225C	20-20, 20	250, 25	1 1/4 x 2 3/4	1.95	1.17
EDL 4225C	40-20, 20	250, 25	1 1/4 x 3	2.05	1.23
EDL 4425C	40-40, 20	250, 25	1 1/4 x 3	2.15	1.29
EDL 7V4125	75-40-10	250	1 1/4 x 3 1/4	3.25	1.95
EDL 16T45	16-16-16	450	1 1/4 x 3	3.05	1.83
EDL 2245C	20-20, 20	450, 25	1 1/4 x 3 3/4	2.80	1.68

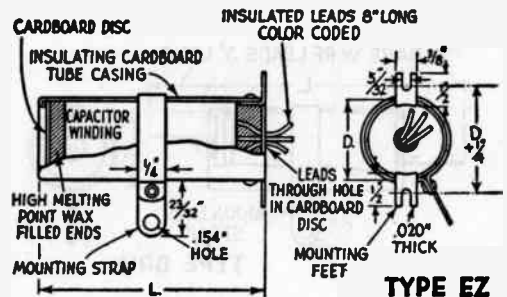
#### Quadruple Common Negative Units

EDL 33215C	30-30-20, 20	150, 25	1 1/4 x 2 3/4	\$2.80	\$1.68
EDL 2245C	20-20-20, 20	450, 25	1 1/4 x 3 3/4	3.85	2.31

### UNIVERSAL-MOUNTING UNITS

Type EZ capacitors are especially popular for radio servicing where low cost replacements are required. They are designed with mounting feet for upright mounting to replace inverted can-type units, spade-lug units, or may be mounted beneath the chassis by means of the mounting strap provided around the center of the cardboard tube casing. In any instance, the unused mountings may easily be cut off.

These units are without doubt the most practical all-around replacement capacitors available and incorporate C-D etched foil features in design and construction. They are completely sealed in moisture-proof cardboard tube casing, filled with special wax compound, and provided with insulated wire leads eight inches long. All units are clearly stamped with capacities, voltages and color code designation of leads.



**TYPE EZ**

#### Single Section Units

Cat. No.	Cap. Mid.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 825	8	250	3/4 x 2 1/4	\$1.05	\$0.63
EZ 1625	16	250	1 x 2 1/4	1.30	.78
EZ 2425	24	250	1 1/4 x 2 1/4	1.45	.87
EZ 835	8	350	1 1/4 x 2 1/4	1.10	.66
EZ 1235	12	350	1 1/4 x 2 1/4	1.30	.78
EZ 1635	16	350	1 x 2 1/4	1.45	.87
EZ 2435	24	350	1 x 3 1/4	1.55	.93
EZ 845	8	450	3/4 x 2 1/4	1.15	.69
EZ 1245	12	450	1 x 2 1/4	1.35	.81
EZ 1645	16	450	1 1/4 x 2 1/4	1.55	.93
EZ 3045	30	450	1 1/4 x 3 1/4	1.85	1.11

#### Dual Common Negative Units

EZ 2215	20-20	150	1 x 2 1/4	\$1.50	\$0.90
EZ 3315	30-30	150	1 1/4 x 2 1/4	1.70	1.02
EZ 5515	50-50	150	1 1/4 x 3 1/4	2.05	1.23
EZ 8825	8-8	250	1 x 2 1/4	1.65	.99
EZ 8835	8-8	350	1 1/4 x 2 1/4	1.80	1.08
EZ 8845	8-8	450	1 x 3 1/4	1.90	1.14

(For Type EZ Multiple Units, see next page.)



## CARDBOARD TUBE DRY ELECTROLYTIC CAPACITORS

(Type EZ Universal Mounting Capacitors Continued from preceding page)

### Dual Separate Section Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 288	8-8	250	1 1/4 x 3 1/4	\$2.20	\$1.32
EZ 2116	16-16	250	1 1/4 x 3 1/4	2.75	1.65
EZ 388	8-8	350	1 1/4 x 3	2.25	1.35
EZ 3112	12-12	350	1 1/4 x 3 1/4	2.70	1.62
EZ 3116	16-16	350	1 1/4 x 4 1/4	3.00	1.80
EZ 588	8-8	450	1 1/4 x 3	2.30	1.38
EZ 5816	8-16	450	1 1/4 x 3 1/4	2.70	1.62
EZ 5112	12-12	450	1 1/4 x 3 1/4	2.70	1.62
EZ 5116	16-16	450	1 1/4 x 4 1/4	3.20	1.92

### Triple Common Negative Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 2215C	20-20/20	150/25	1 x 3	\$2.10	\$1.26
EZ 3215C	30-20/20	150/25	1 x 3	2.15	1.29
EZ 3115C	30-10/20	150/25	1 x 3	2.05	1.23
EZ 4215C	40-20/20	150/25	1 1/4 x 3	2.00	1.20
EZ 32115	30-20/10	150	1 1/4 x 2 3/4	2.15	1.29
EZ 42215	40-20-20	150	1 1/4 x 3	2.30	1.38
EZ 1A135C	15-10/20	350/25	1 1/4 x 3 1/4	2.30	1.38
EZ 2143C	20/10/20	400/350/25	1 1/4 x 3 1/4	2.50	1.50

### Triple Separate Section Units\*

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 8825S	8-8/20	250/25	1 1/4 x 3	\$2.45	\$1.47
EZ 8835S	8-8/20	350/25	1 1/4 x 3 1/4	2.55	1.63
EZ 12D36S	12-12/20	350/25	1 1/4 x 3 1/4	2.75	1.65
EZ 16D36S	16-16/20	350/25	1 1/4 x 4 1/4	3.20	1.92
EZ 8846S	8-8/20	450/25	1 1/4 x 3 1/4	2.65	1.59
EZ 12D46S	12-12/20	450/25	1 1/4 x 4 1/4	3.00	1.80
EZ 8882S	8-8-8	250	1 1/4 x 3	2.50	1.50
EZ 8883S	8-8-8	350	1 1/4 x 3 1/4	2.65	1.59
EZ 8884S	8-8-8	450	1 1/4 x 3 1/4	2.75	1.65

### Quadruple Common Negative Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 8816CC	8-8/10-10	150/25	1 x 2 1/2	\$2.35	\$1.41
EZ 3216CC	30-20/10-10	150/25	1 1/4 x 2 1/2	2.60	1.56
EZ 42216C	40-20-20/20	150/25	1 1/4 x 3	2.85	1.71
EZ 63216C	50-30-20/20	150/25	1 1/4 x 3 1/4	2.95	1.77
EZ 44316C	40-40-30/20	150/25	1 1/4 x 3 1/4	3.00	1.80
EZ 65516C	50-50-50/20	150/25	1 1/4 x 3 1/4	3.30	1.98

### Quadruple Separate Section Units\*

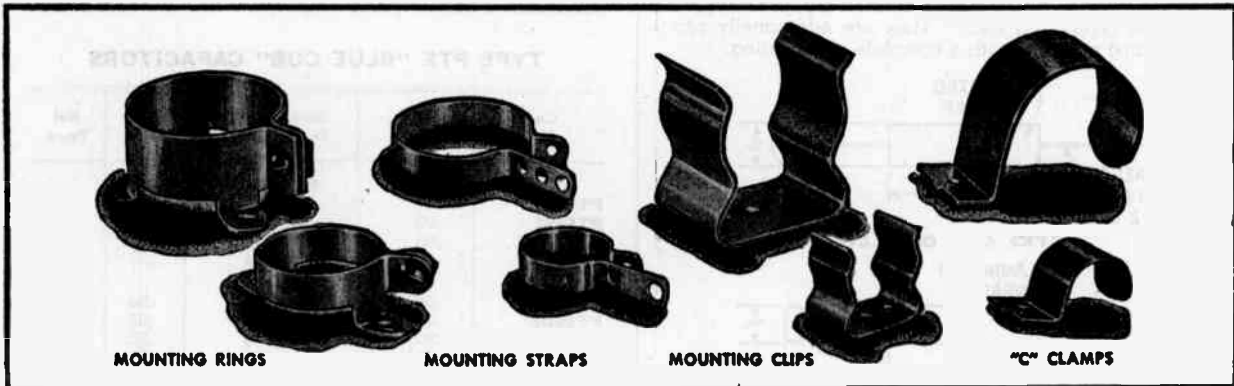
Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
EZ 16D15SS	16-16/10-10	150/25	1 1/4 x 3	\$3.15	\$1.89
EZ 8845SS	8-8/10-10	450/25	1 1/4 x 3 1/4	3.25	1.95
EZ 43215SS	40-30-20/20	150/25	1 1/4 x 3 1/4	3.65	2.19

\*First section separate, others common negative.

### Explanation of Terminal Connections

In all cases only a single common negative lead is provided to all sections in multiple section capacitors listed under the heading of Common Negative Units. Separate Section Units are provided with separate negative and separate positive leads.

In triple and quadruple section capacitors with separate sections, indicated with an asterisk (\*), the very first capacity listed is a separate section, having separate negative and positive leads, while all other capacities shown are connected to a single common negative lead with separate positive leads to each section.



### CAPACITOR MOUNTING HARDWARE

Additional hardware for mounting all types of electrolytic capacitors as well as tubular paper units is available as shown in the accompanying diagrams and listed below.

Part No.	Description	List Price	Net Price
14582	Mounting Ring for 1" dia. Cans	\$0.09	\$0.06
12125	Mounting Ring for 1 1/4" dia. Cans	.09	.06
15591	Mounting Ring for 1 1/2" dia. Cans	.14	.08
16693	Mounting Ring for 1 3/4" dia. Cans	.17	.10
14464	Mounting Ring for 2" dia. Cans	.21	.12
13690	Mounting Ring for 2 1/4" dia. Cans	.21	.12
13691	Mounting Ring for 3" dia. Cans	.21	.12
16266	Mounting Ring for 3 1/4" dia. Cans	.21	.12
17842	Mounting Ring for 1" dia. Cans	.09	.06
19213	Mounting Ring for 1 1/4" dia. Cans	.09	.06
19573	Mounting Ring for 1 1/2" dia. Cans	.09	.06
17843	Mounting Ring for 1 3/4" dia. Cans	.09	.06
17844	Mounting Ring for 1 1/2" dia. Cans	.14	.08
21368-1	Mounting Clip for 1" dia. Cans	.14	.08
21368-2	Mounting Clip for 1 1/4" dia. Cans	.14	.08
21368-3	Mounting Clip for 1 1/2" dia. Cans	.14	.08
17820	"C" Clamp for 1/2"-1 1/4" Cans or Tubulars	.14	.08
17821	"C" Clamp for 1 1/2"-1 1/4" Cans or Tubulars	.14	.08
17822	"C" Clamp for 1 1/2"-1 1/2" Cans or Tubulars	.14	.08
17823	"C" Clamp for 1 1/2"-1 3/4" Cans or Tubulars	.14	.08
16278 to 16287	Tubular Straps for Mounting All Types of Tubular Units	.06	.03

#### MOUNTING RINGS

MADE OF 0.035" CADMIUM PLATED STEEL

FOR CAN SIZES 1" TO 1 1/2" DIA.

PART No.	A	B	C
17842	1	1 1/4	1 1/2
19213	1 1/4	1 3/4	1 3/4
19573	1 1/2	1 3/4	1 3/4
17843	1 3/4	2 1/4	2 1/4
17844	1 1/2	1 3/4	2

\*INSIDE DIAMETER (CARD DIAMETER SIZE)

#### MOUNTING RINGS FOR CAN SIZES - 1" TO 3 1/2" DIAMETER

MADE OF 1/8" CADMIUM PLATED STEEL

PART No.	A	B	C	FOR CAN SIZE
14582	1 1/2	1 1/4	1 1/2	1"
12125	1 3/4	1 3/4	1 3/4	1 1/4"
15591	1 1/2	1 3/4	1 3/4	1 1/2"
16693	1 3/4	2 1/4	2 1/4	1 3/4"
14464	1 3/4	2 1/4	2 1/4	2"
13690	2 1/4	2 1/4	3 1/4	2 1/4"
13691	2 1/4	3 1/4	3 1/4	3"
15266	3 1/4	3 1/4	4 1/4	3 1/4"

#### MOUNTING CLIPS

EMBOSSED 1/8" DEEP

MADE OF CADMIUM PLATED STEEL

PART No.	A	B	C	D	FOR CAN SIZE
21368-1	1 1/4	1 1/4	1 1/4	1 1/4	1"
21368-2	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4"
21368-3	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2"

#### TUBULAR STRAPS

MADE OF 0.020" THINNED STEEL

PART No.	I. D.	PART No.	I. D.
16279	1/8"	20440	1/8"
16280	1/8"	27950	1/8"
17203	3/16"	21187	1/8"
17516	3/16"	21068-1	1/8"
16285	3/16"	19033-1	1/8"
17517	3/16"	17673-1	1/8"
27866	3/16"	17606	1/8"

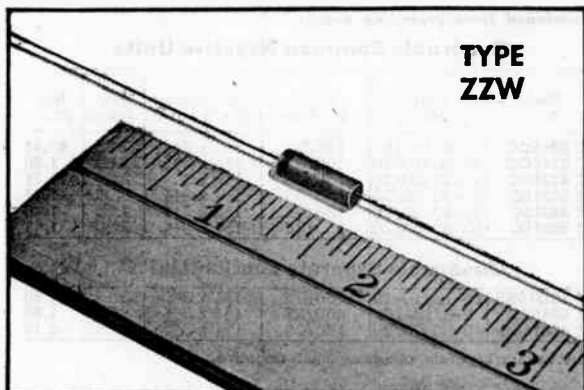
#### "C" CLAMPS

MADE OF CADMIUM PLATED STEEL

PART No.	A	B	C
17930	1/2"	1 1/4"	1 1/2"
17921	1/2"	1"	1 1/4"
17922	1/2"	1 1/4"	1 1/4"
17923	1/2"	1 1/4"	1 1/4"



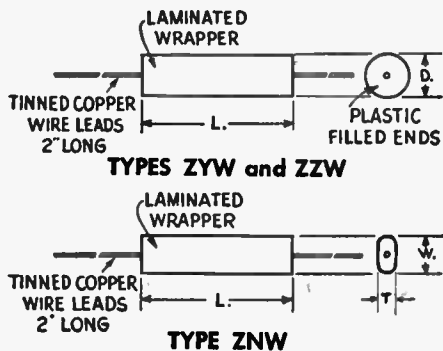
## TUBULAR PAPER CAPACITORS



TYPE  
ZZW

### MINIATURE TUBULAR CAPACITORS

Types ZYW, ZZW, and flat type ZNW, tiny tubular paper capacitors are especially suited for use in very small electronic assemblies, such as hearing aids, pocket radios, etc., where minimum space and weight are essential. These capacitors are the result of Cornell-Dubilier developments for the VT radio proximity fuze for shells and bombs made for the Navy during the War and today find many applications in ultra compact electronic equipment of all kinds. All units are non-inductively wound, wax impregnated by special process, and sealed in a laminated paper wrapper with plastic compound ends. They are additionally protected against moisture with a complete wax coating.



TYPES ZYW and ZZW

TYPES ZZW AND ZYW—Round Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Dia. x Lgth.	List Price	Net Price
ZZW1T5	.0005	150	$\frac{1}{8}$ x $\frac{1}{4}$	\$.35	\$.21
ZZW1D2	.002	150	$\frac{1}{8}$ x $\frac{1}{4}$	.35	.21
ZZW1D4	.004	150	$\frac{1}{8}$ x $\frac{1}{4}$	.35	.21
ZZW1D6	.006	150	$\frac{1}{8}$ x $\frac{1}{4}$	.35	.21
ZZW1S1	.01	150	$\frac{1}{8}$ x $\frac{1}{4}$	.40	.24
ZYW6D1	.001	600	$\frac{1}{8}$ x $1\frac{1}{8}$	.65	.39
ZYW4D2	.002	400	$\frac{1}{8}$ x $1\frac{1}{8}$	.45	.27
ZYW4D5	.005	400	$\frac{1}{8}$ x $1\frac{1}{8}$	.50	.30
ZYW1S3	.03	150	$\frac{1}{8}$ x $1\frac{1}{8}$	.45	.27
ZYW1S5	.05	150	$\frac{1}{8}$ x $1\frac{1}{8}$	.50	.30

### TYPE ZNW—Flat Units

Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches T. x W. x L.	List Price	Net Price
ZNW6D1	.001	600	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	\$.65	\$.39
ZNW4D2	.002	400	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.45	.27
ZNW4D5	.005	400	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.50	.30
ZNW4D6	.006	400	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.50	.30
ZNW4S1	.01	400	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
ZNW1S1	.01	150	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.45	.27
ZNW1S2	.02	150	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.50	.30
ZNW1S3	.03	150	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.50	.30
ZNW1S5	.05	150	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
ZNW1P1	.1	150	$\frac{1}{8}$ x $\frac{3}{8}$ x $1\frac{1}{8}$	.65	.39



TYPE PTE

### "BLUE CUB" MOULDED CAPACITORS

These "Blue Cub" moulded plastic tubulars are especially designed for use in television sets, auto radio, a.c.-d.c. sets and other equipment where high temperatures are encountered. No shock, no vibration is too much for them. They are Vikane\* impregnated with leads welded to the capacitor section and sealed in solid mold construction with final seal-dip of special moisture-proof compound. Capacity remains constant within 5% under most severe conditions of humidity and temperature from 70°F. to 212°F.

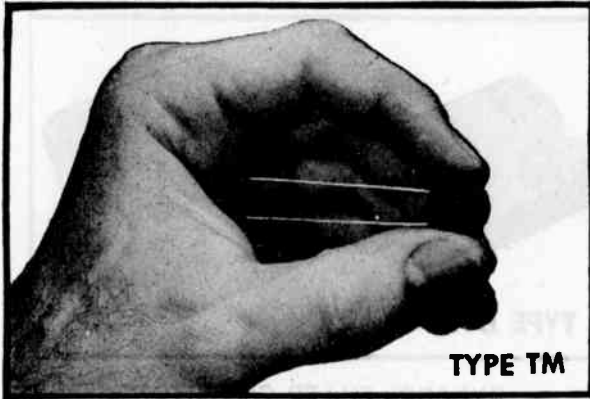
### TYPE PTE "BLUE CUB" CAPACITORS

Cat. No.	Cap. Mfd.	Size—Inches Dia. x Length	List Price	Net Price
<b>400 V. D.C.</b>				
PTE4S1	.01	$1\frac{1}{8}$ x $1\frac{1}{8}$	\$.25	\$.15
PTE4S2	.02	$\frac{3}{8}$ x $1\frac{1}{8}$	.25	.16
PTE4S5	.05	$\frac{3}{8}$ x $1\frac{1}{8}$	.30	.18
PTE4P1	.1	$\frac{3}{8}$ x $1\frac{1}{8}$	.35	.21
<b>600 V. D.C.</b>				
PTE6D1	.001	$1\frac{1}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6D2	.002	$1\frac{1}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6D3	.003	$1\frac{1}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6D4	.004	$1\frac{1}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6D5	.005	$1\frac{1}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6D6	.006	$\frac{3}{8}$ x $1\frac{1}{8}$	.25	.15
PTE6S1	.01	$\frac{3}{8}$ x $1\frac{1}{8}$	.30	.18
PTE6S15	.015	$\frac{3}{8}$ x $1\frac{1}{8}$	.30	.18
PTE6S2	.02	$\frac{3}{8}$ x $1\frac{1}{8}$	.30	.18
PTE6S3	.03	$\frac{3}{8}$ x $1\frac{1}{8}$	.35	.21
PTE6S4	.04	$\frac{3}{8}$ x $1\frac{1}{8}$	.35	.21
PTE6S5	.05	$\frac{3}{8}$ x $1\frac{1}{8}$	.40	.24
PTE6P1	.1	$1\frac{1}{8}$ x $1\frac{1}{8}$	.45	.27
<b>1800 V. D.C.</b>				
PTE16D1	.001	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D2	.002	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D3	.003	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D4	.004	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D5	.005	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D55	.0055	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D6	.006	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D7	.007	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D75	.0075	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16D8	.008	$\frac{3}{8}$ x $1\frac{1}{8}$	.55	.33
PTE16S1	.01	$\frac{3}{8}$ x $1\frac{1}{8}$	.60	.36
PTE16S15	.015	$\frac{3}{8}$ x $1\frac{1}{8}$	.60	.36
PTE16S2	.02	$1\frac{1}{8}$ x $1\frac{1}{8}$	.60	.36
PTE16S25	.025	$1\frac{1}{8}$ x $1\frac{1}{8}$	.60	.36
PTE16S3	.03	$1\frac{1}{8}$ x $1\frac{1}{8}$	.60	.36
PTE16S4	.04	$1\frac{1}{8}$ x $1\frac{1}{8}$	.60	.36
<b>6000 V. D.C.</b>				
PTE60T5	.0005	$1\frac{1}{8}$ x $1\frac{1}{8}$	1.35	.81
PTE60D1	.001	$1\frac{1}{8}$ x $1\frac{1}{8}$	1.35	.81
PTE60D5	.005	$1\frac{1}{8}$ x $1\frac{1}{8}$	1.35	.81
<b>10000 V. D.C.</b>				
PTE100T5	.0005	$1\frac{1}{8}$ x $1\frac{1}{8}$	1.50	.90

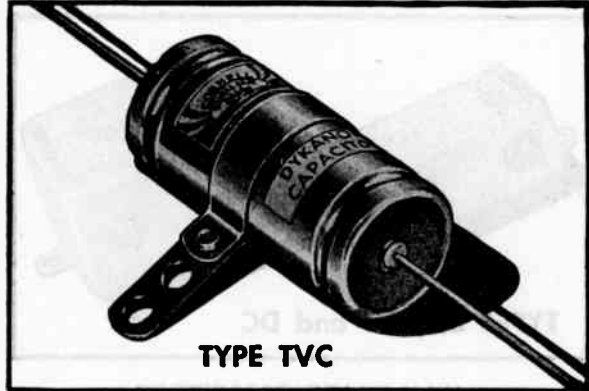
\* Reg. U. S. Pat. Off.



## TELEVISION CAPACITORS



**TYPE TM**



**TYPE TVC**

### "TINYMIKE"—CERAMIC DISC-TYPE UNITS

Type TM "TINYMIKE" Miniature ceramic disc-type capacitors are designed especially for by-pass and coupling circuits. Each unit is clearly stamped with capacity in MMF. for service or replacement use.

#### TYPE TM—By-Pass and Coupling Capacitors

Cat. No.	Cap. Mmf. $\approx 20\%$	Size—Inches Dia. x Thick.	List Price	Net Price
<b>TM5Q6A</b>	50	500 V. D.C. $1\frac{1}{8} \times \frac{1}{8}$	\$.25	\$.15
<b>TM5T1A</b>	100	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5T12A</b>	120	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5T15A</b>	150	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15

#### TYPE TM—By-Pass Circuit Capacitors

Cat. No.	Cap. Mmf. Minimum	Size—Inches Dia. x Thick.	List Price	Net Price
<b>TM5T5B</b>	500	500 V. D.C. $1\frac{1}{8} \times \frac{1}{8}$	.25	\$.15
<b>TM5D1B</b>	1000	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D15B</b>	1500	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D2B</b>	2000	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D25B</b>	2500	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D3B</b>	3000	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D4C</b>	4000	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15
<b>TM5D8C</b>	5000	$1\frac{1}{8} \times \frac{1}{8}$	.25	.15

### "BLUE CUB"—PLASTIC TUBULAR UNITS

Type PTE capacitors are Vikane\* impregnated to withstand high voltage breakdown test at low power factor and moulded in plastic for permanency and durability to withstand humidity and temperatures up to 300° F. without softening. They are provided with wire leads securely welded to the capacitor section which insures against possible opens and intermittents.

#### TYPE PTE—Moulded Plastic Capacitors

Cat. No.	Cap. Mmf.	Size—Inches Dia. x Length	List Price	Net Price
<b>PTE60T5</b>	.0005	6000 V. D.C. $1\frac{1}{8} \times 1\frac{1}{8}$	\$1.35	\$.81
<b>PTE60D1</b>	.001	$1\frac{1}{8} \times 1\frac{1}{8}$	1.35	.81
<b>PTE60D5</b>	.005	$1\frac{1}{8} \times 1\frac{1}{8}$	1.35	.81
<b>PTE100T5</b>	.0005	10000 V. D.C. $1\frac{1}{8} \times 1\frac{1}{8}$	1.50	.90

### HEAVY WAX PAPER TUBULAR UNITS

Cat. No.	Cap. Mmf.	Size—Inches Dia. x Length	List Price	Net Price
<b>GTV-60S1</b>	.01	6000 V. D.C. $1\frac{1}{8} \times 2$	\$1.40	\$.84
<b>GTV-60S3</b>	.03	$1\frac{1}{8} \times 2\frac{1}{2}$	1.50	.90
<b>GTV-60S5</b>	.05	$1\frac{1}{8} \times 3$	1.60	.96

### OIL-FILLED METAL TUBULAR UNITS

Type MTV capacitors are impregnated and filled with oil in hermetically sealed metal tube containers and provided with an insulating cardboard sleeve cover.

#### TYPE MTV—Oil-Filled Capacitors

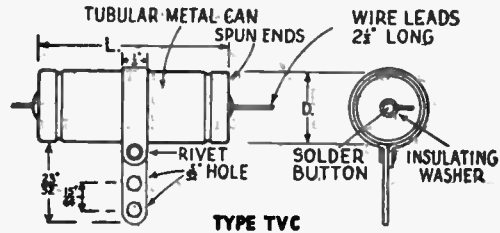
Cat. No.	Cap. Mmf.	Size—Inches Dia. x Length	List Price	Net Price
<b>MTV 60T5</b>	.0005	6000 V. D.C. 1. x $1\frac{3}{8}$	\$2.35	\$1.41
<b>MTV 60D1</b>	.001	1. x $1\frac{3}{8}$	2.35	1.41
<b>MTV 60D5</b>	.005	1. x $1\frac{3}{8}$	2.35	1.41
<b>MTV 60S1</b>	.01	1. x $2\frac{1}{4}$	2.35	1.41
<b>MTV 60S3</b>	.03	$1\frac{3}{8} \times 2\frac{1}{2}$	2.60	1.56
<b>MTV 60S5</b>	.05	$1\frac{3}{8} \times 3\frac{1}{4}$	2.75	1.66

For mounting clamps, add 15c to list price of each.

\*Reg. U. S. Pat. Off.

### OIL-IMPREGNATED METAL TUBULAR UNITS

Type TVC capacitors are compact tubular metal can type units designed to withstand severe climatic conditions. They are non-inductively wound, impregnated with Dykanol "B" to maintain high insulation resistance.



**TYPE TVC**

#### TYPE TVC—Oil-Impregnated Capacitors\*

Cat. No.	Cap. Mmf.	Size—Inches Dia. x Length	List Price	Net Price
<b>400 V. D.C.</b>				
<b>TVC 4D6</b>	.005	$\frac{1}{8} \times 1\frac{1}{8}$	\$0.90	\$0.54
<b>TVC 4S1</b>	.01	$\frac{1}{8} \times 1\frac{1}{8}$	.90	.54
<b>TVC 4S15</b>	.015	$\frac{1}{8} \times 1\frac{1}{8}$	1.00	.60
<b>TVC 4S2</b>	.02	$\frac{1}{8} \times 1\frac{1}{8}$	1.00	.60
<b>TVC 4S3</b>	.03	$\frac{1}{8} \times 1\frac{1}{8}$	1.05	.63
<b>TVC 4S4</b>	.04	$\frac{1}{8} \times 1\frac{1}{8}$	1.05	.63
<b>TVC 4S5</b>	.05	$\frac{1}{8} \times 1\frac{1}{8}$	1.05	.63
<b>TVC 4P1</b>	.1	$\frac{1}{8} \times 1\frac{1}{8}$	1.15	.69
<b>TVC 4P25</b>	.25	$\frac{1}{8} \times 2\frac{1}{8}$	1.45	.87
<b>TVC 4P5</b>	.5	1 x $2\frac{1}{8}$	1.70	1.02
<b>600 V. D.C.</b>				
<b>TVC 6D5</b>	.005	$\frac{1}{8} \times 1\frac{1}{8}$	.95	.57
<b>TVC 6S1</b>	.01	$\frac{1}{8} \times 1\frac{1}{8}$	.95	.57
<b>TVC 6S15</b>	.015	$\frac{1}{8} \times 1\frac{1}{8}$	1.00	.60
<b>TVC 6S2</b>	.02	$\frac{1}{8} \times 1\frac{1}{8}$	1.05	.63
<b>TVC 6S3</b>	.03	$\frac{1}{8} \times 1\frac{1}{8}$	1.10	.66
<b>TVC 6S4</b>	.04	$\frac{1}{8} \times 1\frac{1}{8}$	1.10	.66
<b>TVC 6S5</b>	.05	$\frac{1}{8} \times 1\frac{1}{8}$	1.10	.66
<b>TVC 6P1</b>	.1	$\frac{1}{8} \times 1\frac{1}{8}$	1.25	.75
<b>TVC 6P25</b>	.25	$\frac{1}{8} \times 1\frac{1}{8}$	1.70	1.02
<b>TVC 6P5</b>	.5	1 x $1\frac{1}{8}$	2.20	1.32
<b>1000 V. D.C.</b>				
<b>TVC 10D5</b>	.005	$\frac{1}{8} \times 1\frac{1}{8}$	1.10	.66
<b>TVC 10S1</b>	.01	$\frac{1}{8} \times 1\frac{1}{8}$	1.10	.66
<b>TVC 10S15</b>	.015	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 10S2</b>	.02	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 10S3</b>	.03	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 10S4</b>	.04	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 10S5</b>	.05	$\frac{1}{8} \times 1\frac{1}{8}$	1.30	.78
<b>TVC 10P1</b>	.1	$\frac{1}{8} \times 2\frac{1}{8}$	1.50	.90
<b>OIL-FILLED UNITS</b>				
<b>1600 V. D.C.</b>				
<b>TVC 16D5</b>	.005	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 16S1</b>	.01	$\frac{1}{8} \times 1\frac{1}{8}$	1.20	.72
<b>TVC 16S15</b>	.015	$\frac{1}{8} \times 1\frac{1}{8}$	1.25	.75
<b>TVC 16S2</b>	.02	$\frac{1}{8} \times 1\frac{1}{8}$	1.30	.78
<b>TVC 16S3</b>	.03	$\frac{1}{8} \times 1\frac{1}{8}$	1.30	.78
<b>TVC 16S4</b>	.04	$\frac{1}{8} \times 1\frac{1}{8}$	1.30	.78
<b>TVC 16S5</b>	.05	$\frac{1}{8} \times 1\frac{1}{8}$	1.40	.84

\*For units provided with insulating sleeve over metal tube add 10c to list price. When ordering add "6" to Cat. No. (Example TVC 4D5-6).





## DRAWN METAL SHELL PAPER CAPACITORS



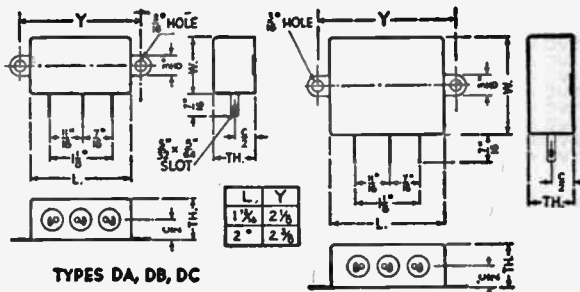
TYPES DA, DB and DC

### WAX-FILLED CAPACITORS

Types DA to DC capacitors are non-inductively wound and wax-potted in drawn metal shell containers. They are available in a large variety of ratings for radio frequency bypass, audio frequency coupling and bypass functions. Lug terminals are amply insulated. Integral with casing, the mounting feet allow ease of assembly.

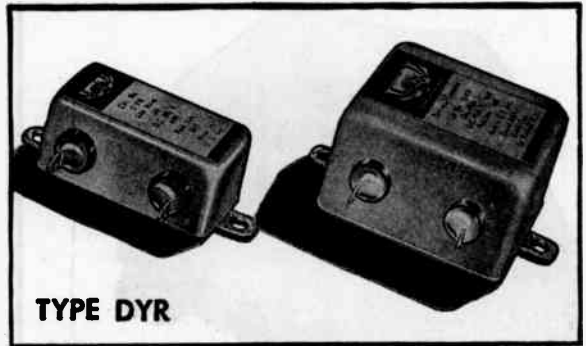
In the single and dual section capacitor units, the terminals are insulated from the container. The duals have three terminals, the common lug being on the left. In the triple section capacitors, the common terminal connection is grounded to the metal case.

All units are wound with the highest grade pure aluminum foil and multi-laminated kraft tissue, thoroughly dried under vacuum pressure, impregnated in the finest grade wax compound, oil-cooled, and potted in a special wax compound. Conservative D.C. ratings of these capacitors by triple testing assure dependable service in operation.



TYPES DA, DB, DC

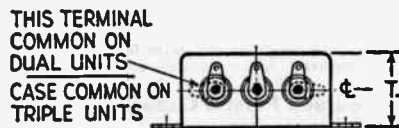
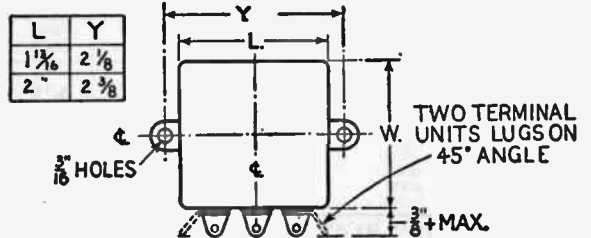
Cat. No.	Cap. Mfd.	Size—Inches Lth. x Wid. x Thick.	List Price	Net Price
<b>400 V. D.C. Work.</b>				
DA 4011	.1	1 1/8" x 1" x 3/8"	\$1.75	\$1.05
DA 4025	.25	1 1/8" x 1" x 3/8"	2.00	1.20
DA 4050	.5	1 1/8" x 1" x 3/8"	2.15	1.29
DA 4100	1	2" x 1 3/4" x 1 1/8"	2.60	1.56
DA 4200	2	2" x 2" x 1 1/8"	3.35	2.01
DB 4010	.1-1	1 1/8" x 1" x 3/8"	2.75	1.65
DB 4025	.25-25	2" x 1 1/4" x 3/8"	3.00	1.80
DB 4050	.5-5	2" x 1 3/4" x 1"	3.50	2.10
DC 4010	.1-1-1	1 1/8" x 1" x 3/8"	3.40	2.04
<b>600 V. D.C. Work.</b>				
DA 6011	.1	1 3/8" x 1" x 3/8"	2.40	1.44
DA 6025	.25	1 1/8" x 1 1/4" x 3/8"	2.55	1.53
DA 6050	.5	2" x 1 3/4" x 1 1/8"	2.75	1.65
DA 6100	1	2" x 2" x 1 1/8"	3.15	1.89



TYPE DYR

### DYKANOL-FILLED CAPACITORS

Type DYR Dykanol Bypass Capacitors are non-inductively wound and meet the need for dependable capacitors of fractional capacities that will operate efficiently in R.F. and A.F. bypass, audio frequency coupling and A.C. circuits under all humidity conditions and at temperatures up to approximately 85° C. (185° F.). They are built to stand an immersion test in hot water and have been specially designed to fill the severe requirements of aircraft, submarine, marine and tropical applications for maximum capacity and voltage in minimum space, where quality and reliability are of paramount importance. They are impregnated and filled with Dykanol "G" and sealed in metal cases with leakproof riveted terminals.

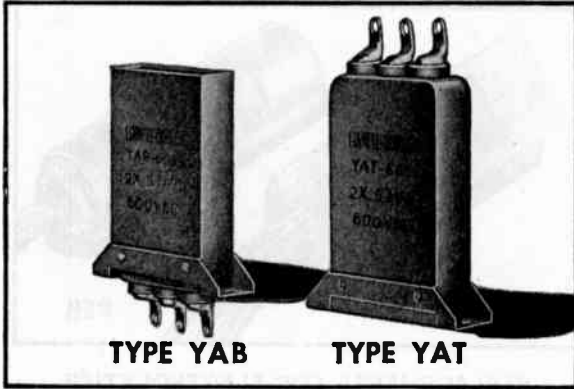


TYPE DYR

Cat. No.	Cap. Mfd.	Size—Inches Lth. x Wid. x Thick.	List Price	Net Price
<b>600 V. D.C. Work.</b>				
DYR 6005	.05	1 1/8" x 1" x 3/8"	\$2.60	\$1.56
DYR 6010	.1	1 1/8" x 1" x 3/8"	2.65	1.59
DYR 6025	.25	1 1/8" x 1" x 3/8"	2.80	1.68
DYR 6050	.5	1 1/8" x 1" x 3/8"	3.00	1.80
DYR 6100	1	2" x 1 3/4" x 1 1/8"	3.40	2.04
DYR 6200	2	2" x 2" x 1 1/8"	4.55	2.73
DYR 60055	.05-.05	1 1/8" x 1" x 3/8"	3.30	1.98
DYR 6011	.1-1	1 1/8" x 1" x 3/8"	3.35	2.01
DYR 6022	.25-.25	1 1/8" x 1 1/4" x 3/8"	3.40	2.04
DYR 6055	.5-5	2" x 1 3/4" x 1 1/8"	3.90	2.34
DYR 6110	1-1	2" x 2" x 1 1/8"	4.80	2.88
DYR 6111	.1-1-1	1 1/8" x 1" x 3/8"	3.80	2.28
DYR 6222	.25-.25-.25	2" x 1 3/4" x 1 1/8"	4.30	2.58
DYR 6555	.5-5-5	2" x 2" x 1 1/8"	5.20	3.12
<b>1000 V. D.C. Work.</b>				
DYR 10005	.05	1 1/8" x 1" x 3/8"	2.75	1.65
DYR 10010	.1	1 1/8" x 1" x 3/8"	2.85	1.71
DYR 10025	.25	1 1/8" x 1" x 3/8"	2.95	1.77
DYR 10050	.5	2" x 1 3/4" x 1 1/8"	3.20	1.92
DYR 10100	1	2" x 2" x 1 1/8"	4.00	2.40
DYR 10055	.05-.05	1 1/8" x 1" x 3/8"	3.50	2.10
DYR 10011	.1-1	1 1/8" x 1" x 3/8"	3.60	2.16
DYR 10022	.25-.25	2" x 1 3/4" x 1 1/8"	3.80	2.28
DYR 10055	.5-5	2" x 2" x 1 1/8"	4.95	2.97
DYR 10111	.1-1-1	1 1/8" x 1 1/4" x 3/8"	4.15	2.49
DYR 10222	.25-.25-.25	2" x 2" x 1 1/8"	5.00	3.00



## DRAWN METAL SHELL PAPER CAPACITORS



**TYPE YAB      TYPE YAT**

### COMPACT DYKANOL CAPACITORS

Types YAT and YAB are impregnated and filled with Dykanol "G" (chlorinated diphenyl) a synthetic, non-inflammable, non-oxidizable liquid compound which is unaffected by wide latitude of temperature changes or voltage stresses. They are especially suited for use in bypass, audio frequency coupling circuits and other applications where conditions of high humidity and temperatures are encountered.

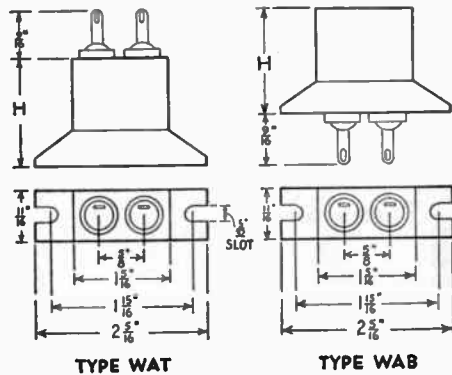
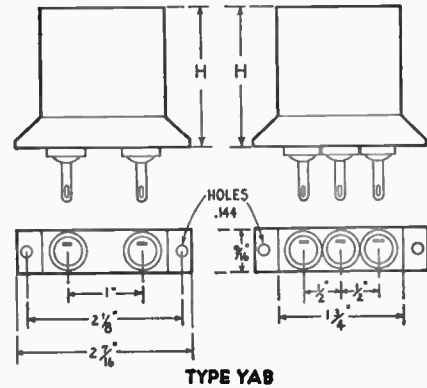
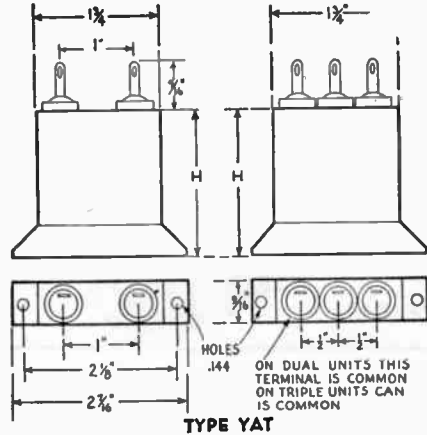
Units are sealed in drawn metal shell containers and provided with leakproof terminals either on top or bottom of the can containers, designated as Types YAT and YAB accordingly. All units are provided with rugged metal mounting brackets which provide rigid mountings. Two or more units may be mounted close together in an assembly. Single section units are provided with two terminals while dual and triple section units have three terminals. In single and dual section units terminals are insulated from the metal container. The third terminal of dual section units is the common terminal and marked for identification. In triple section units the common terminal connection is grounded to the metal case.

Types WAT and WAB Capacitors are smaller size units of similar construction and electrical characteristics but only supplied in single section units with two terminals. These units are ideally suited for use in assemblies where space is limited and multiple units may be mounted close together for compactness.

### TYPES YAT AND YAB—Dykanol "G" Impregnated and Filled Units

Cat. Nos.	Cap. Mfd.	Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>				
YAT or YAB 6005	.05	2 1/4 x 1/2 x 1	\$3.25	\$1.95
YAT or YAB 6010	.1	2 1/4 x 1/2 x 1	3.25	1.95
YAT or YAB 6025	.25	2 1/4 x 1/2 x 1 1/4	3.50	2.10
YAT or YAB 6050	.5	2 1/4 x 1/2 x 1 1/4	3.75	2.25
YAT or YAB 6100	1.0	2 1/4 x 1/2 x 2 1/4	4.25	2.55
YAT or YAB 60055	.05-.05	2 1/4 x 1/2 x 1	3.30	1.98
YAT or YAB 6011	.1-.1	2 1/4 x 1/2 x 1 1/4	4.25	2.55
YAT or YAB 6022	.25-.25	2 1/4 x 1/2 x 1 1/4	4.25	2.55
YAT or YAB 6055	.5-.5	2 1/4 x 1/2 x 2 1/4	5.00	3.00
YAT or YAB 60555	.05-.05-.05	2 1/4 x 1/2 x 1	4.75	2.85
YAT or YAB 6111	.1-.1-.1	2 1/4 x 1/2 x 1 1/4	5.00	3.00
YAT or YAB 6222	.25-.25-.25	2 1/4 x 1/2 x 2 1/4	5.25	3.15

Cat. Nos.	Cap. Mfd.	Size—Inches L. x W. x H.	List Price	Net Price
<b>1000 V. D.C. Work.</b>				
YAT or YAB 10005	.05	2 1/4 x 1/2 x 1	\$3.35	\$2.01
YAT or YAB 10010	.1	2 1/4 x 1/2 x 1	3.60	2.16
YAT or YAB 10025	.25	2 1/4 x 1/2 x 1 1/4	3.75	2.25
YAT or YAB 10050	.5	2 1/4 x 1/2 x 2 1/4	4.00	2.40
YAT or YAB 100055	.05-.05	2 1/4 x 1/2 x 1 1/4	4.00	2.40
YAT or YAB 10011	.1-.1	2 1/4 x 1/2 x 1 1/4	4.50	2.70
YAT or YAB 10022	.25-.25	2 1/4 x 1/2 x 2 1/4	4.75	2.85
YAT or YAB 100555	.05-.05-.05	2 1/4 x 1/2 x 1 1/4	5.25	3.15
YAT or YAB 10111	.1-.1-.1	2 1/4 x 1/2 x 2 1/4	5.75	3.45



### TYPES WAT AND WAB—Dykanol "G" Impregnated and Filled Units

Cat. Nos.	Cap. Mfd.	Size—Inches L. x W. x H.	List Price	Net Price
<b>600 V. D.C. Work.</b>				
WAT or WAB 6005	.05	2 1/4 x 1 1/4 x 1 1/4	\$3.50	\$2.10
WAT or WAB 6010	.1	2 1/4 x 1 1/4 x 1 1/4	3.75	2.25
WAT or WAB 6025	.25	2 1/4 x 1 1/4 x 1 1/4	4.00	2.40
WAT or WAB 6050	.5	2 1/4 x 1 1/4 x 2 1/4	4.25	2.55
WAT or WAB 6100	1.0	2 1/4 x 1 1/4 x 2 1/4	4.75	2.85
<b>1000 V. D.C. Work.</b>				
WAT or WAB 10005	.05	2 1/4 x 1 1/4 x 1 1/4	\$3.75	\$2.25
WAT or WAB 10010	.1	2 1/4 x 1 1/4 x 1 1/4	3.75	2.25
WAT or WAB 10025	.25	2 1/4 x 1 1/4 x 2 1/4	4.00	2.40
WAT or WAB 10050	.5	2 1/4 x 1 1/4 x 2 1/4	4.00	2.40



## REPLACEMENT PAPER CAPACITORS

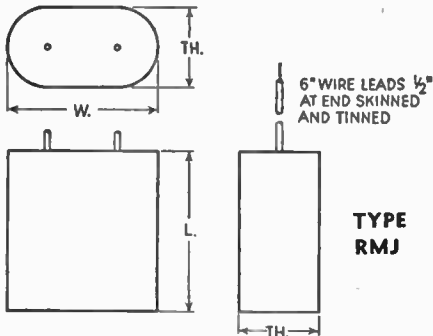


**TYPE RMJ**

### UNCASED PAPER CAPACITORS

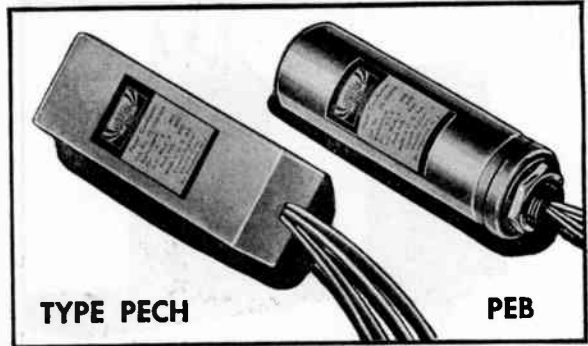
Type RMJ uncased capacitors are made available to repair paper dielectric filter blocks which were used in the early models of A.C. operated radio sets. Also useful in the elimination of electrical interference caused by pushbuttons, bells, buzzers, and similar applications in radio, electronic and electrical devices.

Special capacitor units can be made up and potted into suitable containers by servicemen to fulfill many requirements.



**TYPE RMJ**

Cat. No.	Cap. Mid.	Size—Inches Lth. x Wid. x Thick.	List Price	Net Price
	<b>600 V. D.C.</b>			
RMJ 6010	.1	2 x 1 x 1/8	\$0.80	\$0.48
RMJ 6025	.25	2 x 1 x 1/8	.90	.54
RMJ 6050	.5	2 x 1 1/2 x 1/8	1.05	.63
RMJ 6100	1	2 x 2 x 1/8	1.40	.84
RMJ 6200	2	3 1/2 x 2 x 1/8	2.10	1.26
RMJ 6400	4	4 1/2 x 2 1/2 x 1/8	3.80	2.28

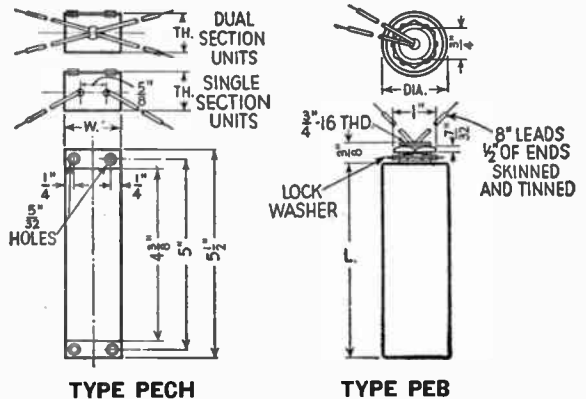


**TYPE PECH**

**PEB**

### REPLACEMENTS FOR ELECTROLYTICS

Paper Replacement Capacitors that simulate electrolytics in appearance; these types fulfill many service requirements. There is no polarity to observe when using these capacitors. Mounting flanges are provided on all cardboard box units. Dual section units have separate leads.



**TYPE PECH**

**TYPE PEB**

Cat. No.	"Replacement" for Electrolytic Cap. Mid.	Actual Capacity Approx. Mid.	Size—Inches Length x Width x Thickness	List Price	Net Price
		<b>600 V. D.C.</b>			
PECH 6004	4	2	4 1/2 x 1 1/2 x 1/8	\$2.00	\$1.20
PECH 6008	8	5.5	4 1/2 x 1 1/2 x 1/8	3.25	1.95
PECH 6808	8-8	2.7-2.7	4 1/2 x 2 x 1/8	4.00	2.40
PEB 6004	4	1.75	4 1/2 x 1 1/2	2.10	1.26
PEB 6008	8	2.75	4 1/2 x 1 1/2	3.50	2.10
PEB 6808	8-8	1.7-1.7	4 1/2 x 1 1/2	4.30	2.58



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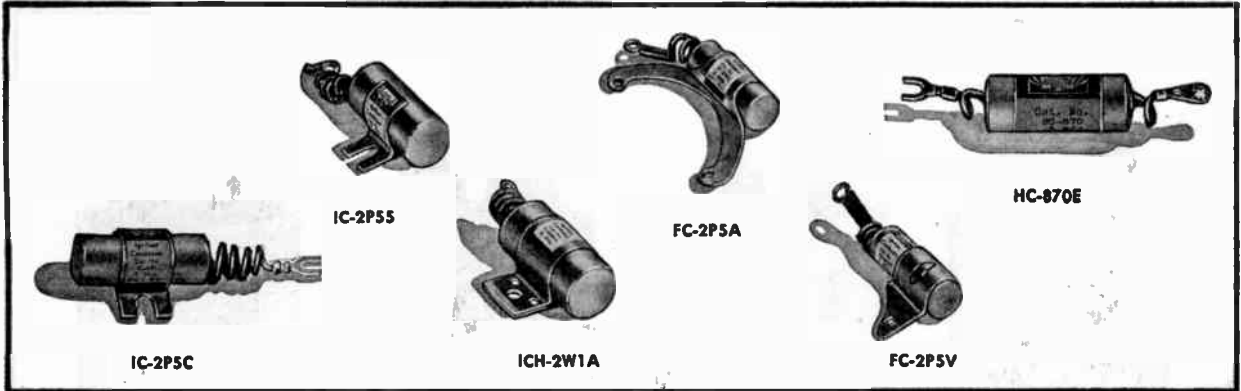
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## AUTO RADIO CAPACITORS



### MOTOR GENERATOR AMMETER AND BUFFER CAPACITORS

The mechanical design of C-D Auto Radio Capacitors insures against damage by the high temperatures and excessive vibration existing under the hood of an auto. Special units such as these are designed for certain particular

installations. Thus, for instance, Ford generator capacitor, FC-2P5V, has a special mounting bracket while others are also provided with special mountings and terminals.

#### GENERATOR UNITS

Cat. No.	Cap. Mfd.	Size—Inches Lth. x Dia.	List Price	Net Price
ICS 2S5A	.05	1 1/4 x 7/16	\$.65	\$0.39
IC 2P5C	.5	1 1/2 x 1 1/16	.65	.39
FC 2P5A	.5	1 1/2 x 1 1/16	.85	.51
FC 2P5V	.5	1 1/2 x 1 1/16	.65	.39
IC 2P55	.5-.5	2 x 3/8	1.05	.63
ICH 2W1A	1.0	2 1/2 x 1	.90	.54
ICV 2P25A	.25	1 1/2 x 1 1/16	.60	.36
ICV 2P5A	.5	1 1/2 x 1 1/16	.65	.39
ICV 2W1A	1.0	2 1/2 x 1	.90	.54

#### AMMETER UNIT

HC 870E	.5	3/4 x 2	\$.65	\$0.39
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#### MOTOROLA NO. 3321 VIBRATOR UNIT

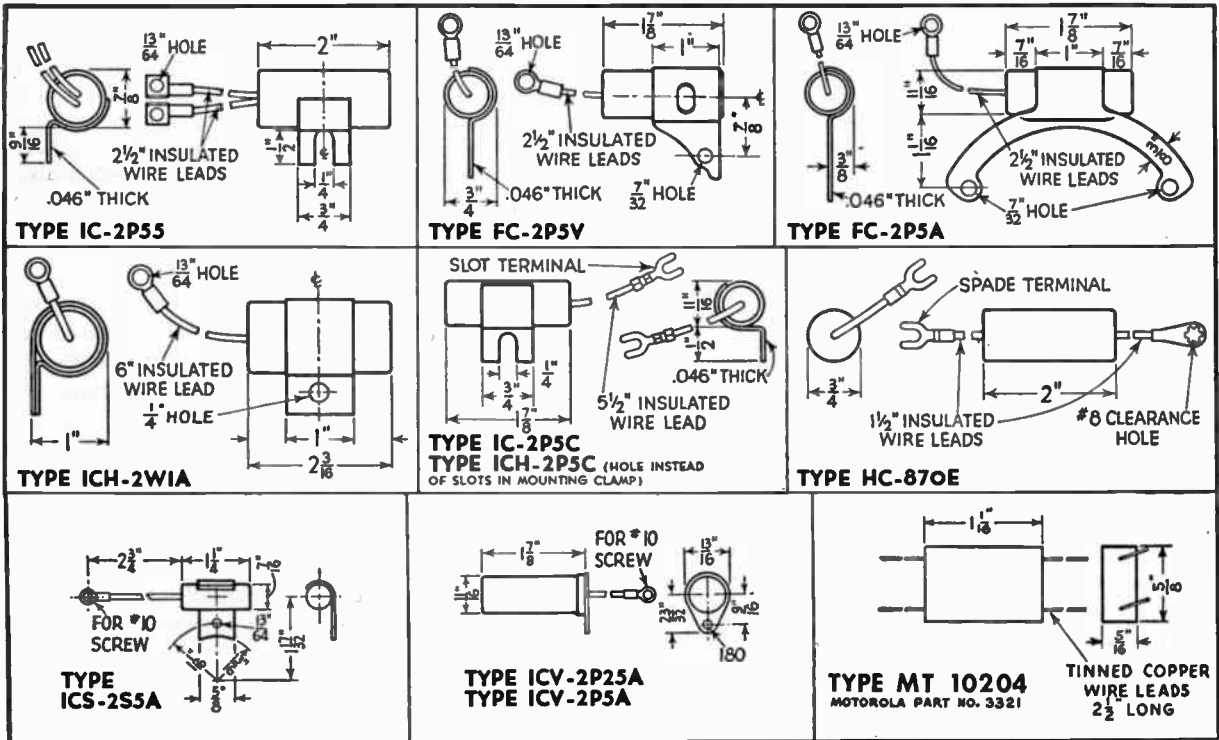
Cat. No.	Cap. Mfd.	V. D.C.	Size—Inches L. x W. T.	List Price	Net Price
MT 10204	2 x .0008	1600	5/8 x 1 1/4 x 5/16	\$.65	\$.39

#### VIBRATOR BUFFER UNITS

Cat. No.	Cap. Mfd.	Size—Inches Dia. x Lgth.	List Price	Net Price
TVC 16D5-6	.005	1 1/4 x 1 1/2	\$1.20	\$0.72
TVC 16D7-6	.007	1 1/4 x 1 1/2	1.20	.72
TVC 16S1-6	.01	1 1/4 x 1 1/2	1.20	.72
TVC 16S2-6	.02	1 1/4 x 1 1/2	1.30	.78

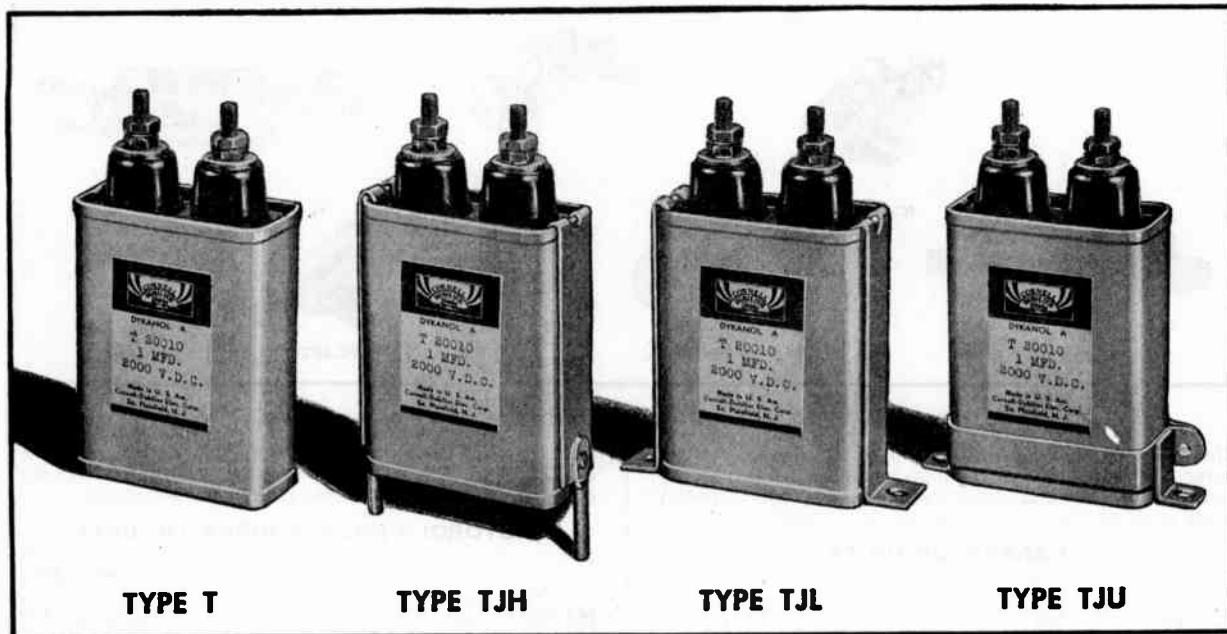
Metal cased oil-impregnated and processed tubular paper capacitors with cardboard insulating sleeve and mounting strap. 2000 V.D.C. Peak.

For oil-impregnated and processed paper tubular capacitors, see Type PTE listed on page 8.





## DYKANOL TRANSMITTING CAPACITORS



TYPE T CAPACITORS WITH VARIOUS TYPES OF MOUNTINGS

Type T-series Dykanol transmitting capacitors are the finest and most dependable units obtainable for use in all amateur, broadcast and commercial equipment. Units are provided with well insulated terminals, and mountings desired as shown in the accompanying illustrations. These units are standard in thousands of broadcast and government stations all over the world, and also employed in all types of sound equipment, television receivers and transmitters, and other electronic apparatus.

Type T capacitors are thoroughly impregnated and filled with Dykanol "G" (chlorinated diphenyl), a non-inflammable, fireproof, non-oxidizable liquid compound which provides a high factor of safety and exceptionally long life at high temperatures.

In the past, organic oils, resins, and waxes were used as paper impregnants in electrical insulation. Because of the variation of these natural materials, uniformity of results could be desired only and not attained. The concentrated attention of chemists and electrical engineers was turned toward the development of non-organic, synthetic substitutes and new substances, the properties of which could be controlled and modified as desired. The chlorinated diphenyls were recognized as outstanding among the rapidly increasing number of synthetics available. Of these compounds, continued research pointed to one narrow group, that known as Dykanol "G," the characteristics of which were particularly suited to the capacitor art. This material, having the lowest power factor compatible with the highest dielectric constant, is used as the impregnant in Type T capacitors.

For the dielectric separator in Type T capacitors, only the highest grade of kraft paper is used, ranging in thickness

from .0003 to .001 of an inch for a single sheet. Three or more layers of paper dielectric as a separator between foil members are always used. The higher voltage units use as many as six or more layers. This multiple lamination builds a high safety factor into Type T capacitors.

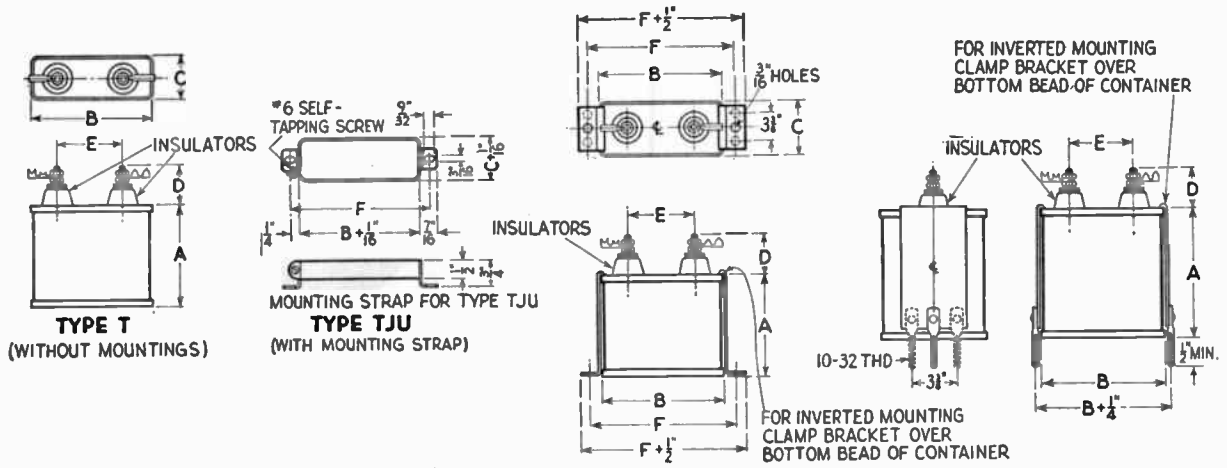
All paper is manufactured to meet rigid specifications and is subjected to a series of tests at the C-D laboratories before acceptance for use in these capacitors. The paper must be of exceptionally high quality to pass the tests. In order to determine its many characteristics, tests are made for porosity, tensile strength, effect of heating, conducting particles, dielectric strength, ash content and ash analysis, acidity or alkalinity, soluble impurities, general appearance, and mechanical considerations such as yield, thickness, width, etc.

Due to the use of Dykanol "G" and multi-layer kraft capacitor tissue in these units, many outstanding advantages are thus gained, i.e., small size, light weight, low dielectric stress and long life at higher operating temperatures. The size is reduced due to the high dielectric constant of Dykanol "G" which also affords reduction in weight. A low dielectric stress is obtained as the result of efficient use of container volume, and the high specific inductive capacity of the impregnant. And since the dielectric stress is low, the life of the unit in operation is greatly increased. The synthetic liquid impregnant employed in these capacitors does not oxidize or deteriorate like commonly used organic oils. For complete listing of Type T-series, see next page.

For higher voltage units, ranging from 6000 to 25,000 v.d.c., write for data and prices on Type TK capacitors.



## DYKANOL TRANSMITTING CAPACITORS



TYPE TJL

TYPE TJH

TYPE DESIGNATIONS—Type T (basic units) are without mountings. To order Types TJH, TJL or TJU with mountings as shown above, add letter symbols of type mountings desired to Cat. No. as follows:

TYPE T—(Basic unit) without mountings.

TYPE TJL—With mounting foot brackets.

TYPE TJH—With screw spade-lug brackets.

TYPE TJU—With universal mounting strap.

Prices below include mounting brackets or universal mounting strap when ordered according to these type numbers.

Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
		A	B	C	D	E	F		
<b>600 V. D.C. Working</b>									
T 6005	.5	2 1/4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	\$4.25	\$2.55
T 6010	1	2 1/2	1 1/8	1 1/8	3/8	1 1/2	2 1/4	5.25	3.15
T 6020	2	2 7/8	1 1/8	1 1/8	3/8	1 1/2	2 1/4	6.50	3.90
T 6030	3	3 1/8	1 1/8	1 1/8	3/8	1 1/2	2 1/4	7.50	4.60
T 6040	4	3 3/8	2 1/8	1 1/8	3/8	1 1/2	3	8.25	4.95
T 6050	5	4 1/8	1 1/8	1 1/8	3/8	1 1/2	3	9.50	5.70
T 6060	6	4 3/8	2 1/8	1 1/8	3/8	1 1/2	3	10.25	6.15
T 6080	8	5 1/8	3 3/8	1 1/8	3/8	2	4 1/2	12.25	7.35
T 6100	10	5 3/8	3 3/8	1 1/8	3/8	2	4 1/2	13.75	8.25
<b>1000 V. D.C. Working</b>									
T 10001	.1	2	1 1/8	1 1/8	3/8	1 1/2	2 1/4	3.75	2.25
T 100025	.25	2 1/8	1 1/8	1 1/8	3/8	1 1/2	2 1/4	4.25	2.55
T 10005	.5	2 1/4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	4.50	2.70
T 10010	1	2 1/2	1 1/8	1 1/8	3/8	1 1/2	2 1/4	5.75	3.45
T 10020	2	4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	7.50	4.60
T 10030	3	3 1/4	2 1/8	1 1/8	3/8	1 1/2	3	8.75	5.25
T 10040	4	4 1/8	2 1/8	1 1/8	3/8	1 1/2	3	9.50	5.70
T 10050	5	3 1/4	3 3/8	1 1/8	3/8	2	4 1/2	11.50	6.90
T 10060	6	4 1/8	3 3/8	1 1/8	3/8	2	4 1/2	12.75	7.65
T 10080	8	4 3/8	3 3/8	1 1/8	3/8	2	4 1/2	13.75	8.25
T 10100	10	4 3/8	3 3/8	1 1/8	3/8	2	4 1/2	15.25	9.15
T 10120	12	3 1/4	3 3/8	2 1/8	3/8	2	4 1/2	16.50	9.90
T 10150	15	4 3/8	3 3/8	2 1/8	3/8	2	4 1/2	18.25	10.95
<b>1500 V. D.C. Working</b>									
T 15005	.5	2 7/8	1 1/8	1 1/8	3/8	1 1/2	2 1/4	5.75	3.45
T 15010	1	4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	6.75	4.05
T 15020	2	4 1/8	2 1/8	1 1/8	3/8	1 1/2	3	9.50	5.70
T 15030	3	4 3/8	2 1/8	1 1/8	3/8	1 1/2	3	11.25	6.75
T 15040	4	4 3/8	3 3/8	1 1/8	3/8	2	4 1/2	12.75	7.65
T 15050	5	4 3/8	3 3/8	1 1/8	3/8	2	4 1/2	13.75	8.25
T 15060	6	4 3/8	3 3/8	1 1/8	3/8	2	4 1/2	15.50	9.30
T 15080	8	4 3/8	3 3/8	2 1/8	3/8	2	4 1/2	19.00	11.40
T 15100	10	4 3/8	3 3/8	3 1/8	3/8	2	4 1/2	22.75	13.65
T 15120	12	4 3/8	3 3/8	3 1/8	3/8	2	4 1/2	24.75	14.85
T 15150	15	4 3/8	3 3/8	4 1/8	3/8	2	4 1/2	27.25	16.35

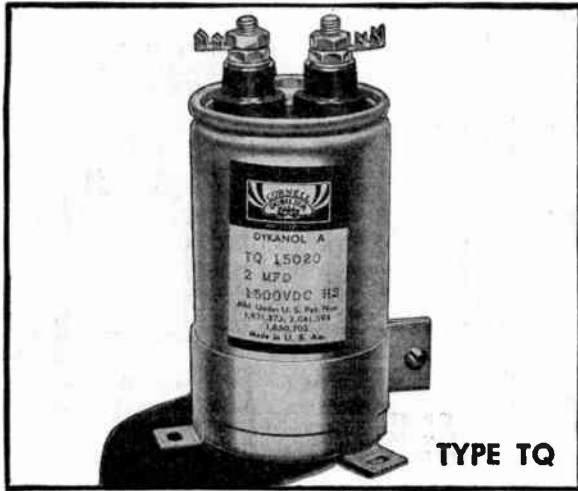
Cat. No.	Cap. Mfd.	Dimensions—Inches						List Price	Net Price
		A	B	C	D	E	F		
<b>2000 V. D.C. Working</b>									
T 20001	.1	2 1/4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	\$6.00	\$3.60
T 200025	.25	2 1/8	1 1/8	1 1/8	3/8	1 1/2	2 1/4	6.50	3.90
T 20005	.5	2 1/2	1 1/8	1 1/8	3/8	1 1/2	2 1/4	6.75	4.05
T 20010	1	2 3/8	2 1/8	1 1/8	3/8	1 1/2	3	8.25	4.95
T 20020	2	4	1 1/8	1 1/8	3/8	1 1/2	2 1/4	9.75	5.85
T 20030	3	4 1/8	3 3/8	1 1/8	3/8	2	4 1/2	12.00	7.20
T 20040	4	3 1/4	3 3/8	2 1/8	3/8	2	4 1/2	13.75	8.25
T 20050	5	4 1/8	3 3/8	2 1/8	3/8	2	4 1/2	15.25	9.15
T 20060	6	4 3/8	3 3/8	3 1/8	3/8	2	4 1/2	18.25	10.95
T 20080	8	4 3/8	3 3/8	3 1/8	3/8	2	4 1/2	22.75	13.65
T 20100	10	4 3/8	3 3/8	4 1/8	3/8	2	4 1/2	27.75	16.65
T 20120	12	5 1/8	3 3/8	4 1/8	3/8	2	4 1/2	30.25	18.15
<b>2500 V. D.C. Working</b>									
T 25005	.5	3 1/4	3 3/8	1 1/8	3/8	2	4 1/2	10.50	6.30
T 25010	1	3 1/4	3 3/8	1 1/8	3/8	2	4 1/2	12.00	7.20
T 25020	2	4 1/8	3 3/8	1 1/8	3/8	2	4 1/2	19.50	11.70
T 25040	4	4	3 3/8	4 1/8	3/8	2	4 1/2	27.25	16.35
T 25100A	10	6 3/8	3 3/8	4 1/8	3/8	2	4 1/2	68.25	40.95
<b>3000 V. D.C. Working</b>									
T 30001	.1	2	2 1/8	1 1/8	3/8	1 1/2	1	12.75	7.65
T 300025	.25	2 1/8	2 1/8	1 1/8	3/8	1 1/2	3	13.50	8.10
T 30005	.5	3 1/8	2 1/8	1 1/8	3/8	1 1/2	3	15.25	9.15
T 30010	1	3 1/4	3 3/8	2 1/8	3/8	2	4 1/2	18.25	10.95
T 30020	2	4 1/8	3 3/8	3 1/8	3/8	2	4 1/2	22.75	13.65
T 30040	4	4 3/8	3 3/8	4 1/8	3/8	2	4 1/2	33.50	20.10
<b>4000 V. D.C. Working</b>									
T 40001	.1	2 3/8	3 3/8	2 1/8	3/8	2	4 1/2	22.75	13.65
T 400025	.25	2 3/8	3 3/8	2 1/8	3/8	2	4 1/2	24.00	14.40
T 40005	.5	4	3 3/8	2 1/8	3/8	2	4 1/2	27.25	16.35
T 40010	1	5	3 3/8	2 1/8	3/8	2	4 1/2	33.50	20.10
T 40020	2	5 1/8	3 3/8	4 1/8	3/8	2	4 1/2	42.50	25.50
T 40040A	4	8	3 3/8	4 1/8	3/8	2	4 1/2	60.75	36.45
<b>5000 V. D.C. Working</b>									
T 50005	.5	4 1/4	3 3/8	2 1/8	3/8	2	4 1/2	30.25	18.15
T 50010	1	4 1/4	3 3/8	4 1/8	3/8	2	4 1/2	38.00	22.80
T 50020	2	6	3 3/8	4 1/8	3/8	2	4 1/2	48.75	29.25
<b>6000 V. D.C. Working</b>									
T 60010A	1	8	3 3/8	4 1/8	3/8	2	1 3/4	76.00	45.60

NOTES—\* Type TJU units are not furnished in these larger sizes.  
 † TYPES TJL and TJH units furnished with two mounting holes or spade-lugs 3/16" apart. All other units furnished with a single mounting hole or spade-lug centered on each bracket.

For higher voltage units, from 6000 to 25,000 v.d.c., write for data and prices on Type TK capacitors.

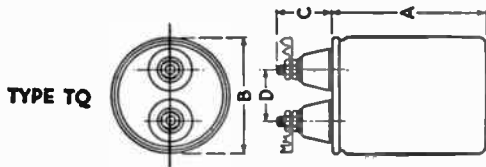


## DYKANOL TRANSMITTING CAPACITORS

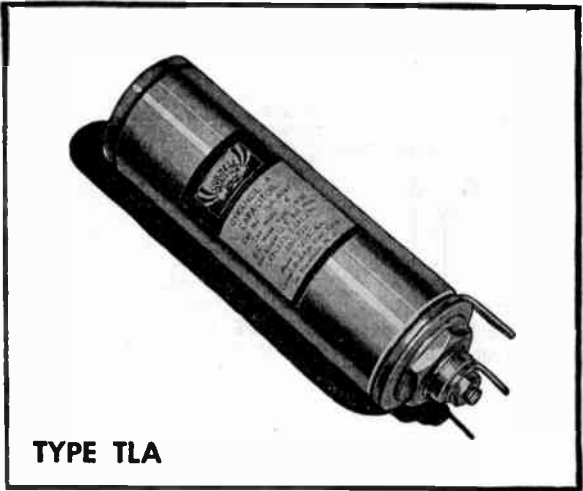


### ROUND CAN-TYPE CAPACITORS

Type TQ Dykanol Capacitors, in round metal containers are provided with two insulated terminals and universal mounting rings for mounting the unit in any position with terminals either above or below a subpanel assembly.

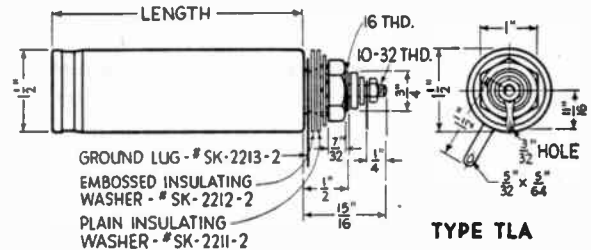


Cat. No.	Cap. Mfd.	Dimensions—Inches				List Price	Net Price
		A	B	C	D		
<b>600 Volts D.C. Working</b>							
TQ 6020	2	2 1/4	2	1	1 1/8	\$4.95	\$2.97
TQ 6040	4	2 3/4	2	1	1 5/8	6.85	4.11
<b>1000 Volts D.C. Working</b>							
TQ 10010	1	1 3/4	2	1	1 1/8	4.20	2.52
TQ 10020	2	2 1/4	2	1	1 5/8	5.70	3.42
TQ 10040	4	3 1/8	2	1	1 5/8	7.25	4.35
<b>1500 Volts D.C. Working</b>							
TQ 15010	1	2 1/4	2	1	1 5/8	5.30	3.18
TQ 15020	2	3 1/8	2	1	1 5/8	7.25	4.35
<b>2000 Volts D.C. Working</b>							
TQ 20010	1	3 1/4	2	1	1 5/8	6.85	4.11
TQ 20020	2	4 3/8	2	1	1 5/8	7.60	4.56
TQ 20040	4	4 3/8	3	1 1/4	1 1/4	10.75	6.45
<b>3000 Volts D.C. Working</b>							
TQ 30010	1	3 3/4	3	1 1/4	1 1/4	13.75	8.25
TQ 30020	2	5 3/4	3	1 1/4	1 1/4	16.75	10.06



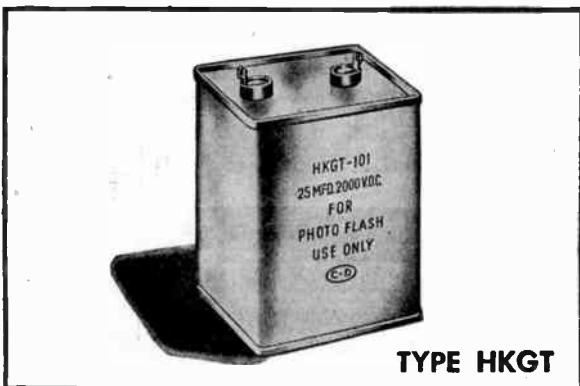
### ONE-HOLE MOUNTING CAPACITORS

Type TLA capacitors are thoroughly impregnated and filled with Dykanol "G" (chlorinated diphenyl), a non-inflammable, fireproof, non-oxidizable liquid compound which provides a high factor of safety and exceptionally long life.



Cat. No.	Cap. Mfd.	D.C. W. Volts	Size—Inches Lgth. x Diam.	List Price	Net Price
<b>TYPE TLA</b>					
TLA 5020	2	600	2 7/8 x 1 3/4	\$4.15	\$2.49
TLA 6040	4	600	4 1/2 x 1 3/4	5.70	3.42
TLA 10010	1	1000	2 7/8 x 1 3/4	3.80	2.28
TLA 10020	2	1000	4 1/2 x 1 3/4	4.95	2.97
TLA 15005	.5	1500	2 7/8 x 1 3/4	4.55	2.73
TLA 15010	1	1500	4 1/2 x 1 3/4	4.95	2.97
<b>TYPE TLAD</b>					
TLAD 6020	2	600	2 7/8 x 1 3/4	\$4.90	\$2.94
TLAD 6040	4	600	4 1/2 x 1 3/4	6.45	3.87
TLAD 10010	1	1000	2 7/8 x 1 3/4	4.55	2.73
TLAD 10020	2	1000	4 1/2 x 1 3/4	5.70	3.42
TLAD 15005	.5	1500	2 7/8 x 1 3/4	5.30	3.18
TLAD 15010	1	1500	4 1/2 x 1 3/4	5.70	3.42

Type TLAD units are insulated from can with two terminals.



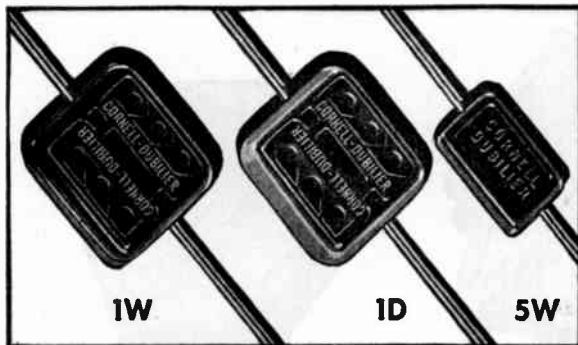
### PHOTO-FLASH ENERGY STORAGE CAPACITORS

Cat. No.	Cap. Mfd.	Watt Sec.	Size—Inches L. x W. x H.	Apprx. Wt. Lbs.	List Price	Net Price
<b>2000 V. D.C. Peak</b>						
HKGT 1A00	15	30	3 3/4 x 2 1/4 x 4 1/4	2 1/4	\$17.00	\$10.20
HKGT 1A01	25	50	3 3/4 x 4 1/4 x 4 3/4	4 1/4	19.00	11.40
<b>2250 V. D.C. Peak</b>						
HKGT 115	28	71	3 3/4 x 4 1/4 x 4 3/4	4 1/4	31.00	18.60
<b>2500 V. D.C. Peak</b>						
HKGT 1A02	15	50	3 3/4 x 2 1/4 x 6 1/4	3 1/4	17.00	10.20
HKGT 103	25	80	3 3/4 x 4 1/4 x 6 1/4	5 3/4	23.00	13.80
HKGT 104	32	100	3 3/4 x 4 1/4 x 6 1/4	6	37.00	22.20
<b>4000 V. D.C. Peak</b>						
T112-1	12	96	3 3/4 x 4 1/4 x 5 1/4	5 1/4	26.00	15.60

NOTE: Special units can also be furnished in other ratings or round can construction on special order upon request.

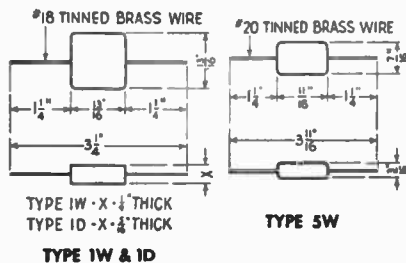


## MOULDED MICA RECEIVING CAPACITORS



**MOULDED BAKELITE UNITS**

Types 1W, 1D, and 5W are suitable for numerous electronic uses and are specially adapted to serve many important functions in low-voltage radio receiving circuits. They are individually tested for accuracy of capacity and voltage breakdown and designed to give dependable service where small size units are required.

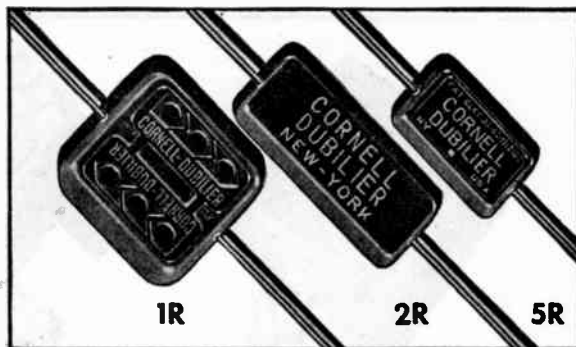


Cap. Mid.	1000 V. D.C. Test—500 V. D.C. Work.			List Price	Net Price
	Type 5W Cat. No.	Type 1W Cat. No.	Type 1D Cat. No.		
.000005	5W 5V5			\$0.25	\$0.15
.00001	5W 5Q1			.25	.15
.00002	5W 5Q2			.25	.15
.000025	5W 5Q25			.25	.15
.00003	5W 5Q3			.25	.15
.00004	5W 5Q4			.20	.12
.00005	5W 5Q5			.20	.12
.00007	5W 5Q7			.20	.12
.0001	5W 5T1			.20	.12
.00015	5W 5T15			.20	.12
.0002	5W 5T2			.20	.12
.00025	5W 5T25			.25	.15
.0003	5W 5T3			.25	.15
.0004	5W 5T4			.25	.15
.0005	5W 5T5			.25	.15
.0006		1W 5T6		.25	.15
.0007		1W 5T7		.25	.15
.0008		1W 5T8		.25	.15
.0009		1W 5T9		.25	.15
.001		1W 5D1		.30	.18
.0015		1W 5D15		.30	.18
.002		1W 5D2		.40	.24
.0025		1W 5D25		.45	.27
.003		1W 5D3		.50	.30
.004			1D 5D4	.55	.33
.005			1D 5D5	.60	.36
.006			1D 5D6	.75	.45
			600 V. D.C. Test		
			300 V. D.C. Working		
.007			1D 3D7	.90	.54
.008			1D 3D8	1.00	.60
.009			1D 3D9	1.00	.60
.01			1D 3S1	1.20	.72

### Notes On Ordering Special Units

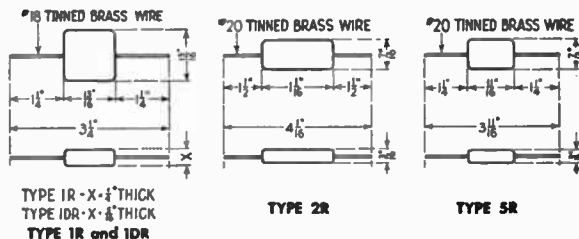
The listing above gives the range of capacities available from stock. Intermediate capacities, not exceeding the maximum as listed for each type, can also be furnished upon request.

Standard capacity tolerance is plus or minus 20%. Also available, on order, in plus or minus 10%, 5%, 3% and 2% tolerance ratings (or within 1 mmfd.—whichever is greater). For capacity tolerance of: 10% add 10% to list prices; 5% add 20% to list prices; 3% add 40% to list prices; 2% add 75% to list prices.



**HIGH-STABILITY "SILVER-MIKE" UNITS**

Types 1R, 1DR, 2R and 5R "Silver-Mike" silvered mica capacitors are designed for use in high Q electronic circuits where frequency stability and minimum loss must be maintained. They are ideally suited for use in circuits where the LC product must be maintained constant, and particularly adapted for use in tuning IF transformers, push-button tuning circuits and other similar applications. Standard units are moulded in low-loss red bakelite.



Cap. Mid.	1000 V. D.C. Test—500 V. D.C. Work.			List Price	Net Price
	Type 5R Cat. No.	Type 2R Cat. No.	Type 1R & 1DR Cat. No.		
.000005	5R 5V5			\$0.45	\$0.27
.00001	5R 5Q1			.40	.24
.00002	5R 5Q2			.40	.24
.000025	5R 5Q25			.40	.24
.00003	5R 5Q3			.40	.24
.00004	5R 5Q4			.40	.24
.00005	5R 5Q5			.40	.24
.00007	5R 5Q7			.40	.24
.0001	5R 5T1	2R 5T1		.40	.24
.00015	5R 5T15	2R 5T15		.45	.27
.0002	5R 5T2	2R 5T2		.45	.27
.00025	5R 5T25	2R 5T25		.45	.27
.0003	5R 5T3	2R 5T3		.55	.33
.0004	5R 5T4	2R 5T4		.65	.39
.0005	5R 5T5	2R 5T5		.70	.42
.0007		2R 5T7		.85	.51
.0008		2R 5T8		.95	.57
.0009		2R 5T9		1.00	.60
.001		2R 5D1	1R 5D1	1.10	.66
.0015			1R 5D15	1.35	.81
.002			1R 5D2	1.35	.81
.0025			1R 5D25	1.80	1.08
.003			1R 5D3	2.05	1.23
.004			1DR 5D4	2.15	1.29
.005			1DR 5D5	2.25	1.35

### Notes On Ordering Special Units

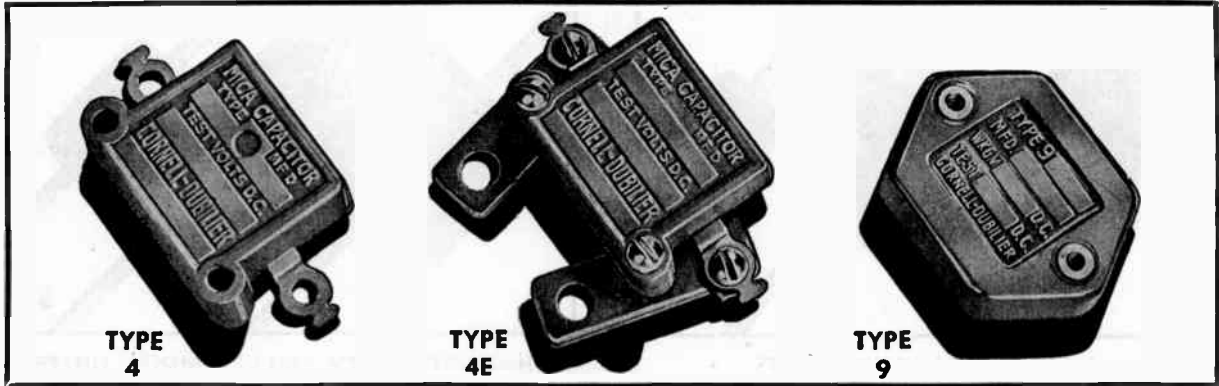
The listing above gives range of capacities which are available from stock. Intermediate capacities, not exceeding the maximum as listed for each type, can also be furnished upon request.

Standard capacity tolerance is 5%. Also available, on special order, in tolerance ratings of plus or minus 3%, add 10% to list prices, 2% add 15% to list prices and 1% add 25% to list prices, (or within 1 mmfd.—whichever is greater). All types can also be supplied in plus or minus 10% and 20% tolerances at lower prices.





## MOULDED MICA TRANSMITTING CAPACITORS



### MOULDED BAKELITE MICA CAPACITORS

C-D Mica Capacitors Types 4 and 9 are designed to meet the requirements of power amplifiers and low-power transmitters. They are principally employed for grid and plate blocking purposes and for r. f. by-pass functions.

TYPE 4			
Cat. No.	Cap. Mfd.	List Price	Net Price
1200 V. D.C. Test— 600 V. D.C. Working			
4-14060	.00005	\$0.70	\$0.42
4-13010	.0001	.70	.42
4-13020	.0002	.70	.42
4-13025	.00025	.70	.42
4-13030	.0003	.70	.42
4-13040	.0004	.70	.42
4-13050	.0005	.70	.42
4-12010	.001	.70	.42
4-12015	.0015	.70	.42
4-12020	.002	.80	.48
4-12025	.0025	.90	.54
4-12030	.003	1.00	.60
4-12040	.004	1.00	.60
4-12050	.005	1.00	.60
4-12060	.006	1.20	.72
4-12070	.007	1.30	.78
4-12080	.008	1.40	.84
4-11010	.01	1.60	.96
4-11015	.015	1.80	1.08
4-11020	.02	2.20	1.32
4-11025	.025	2.65	1.59
4-11030	.03	2.95	1.77

TYPE 4			
Cat. No.	Cap. Mfd.	List Price	Net Price
2500 V. D.C. Test— 1200 V. D.C. Working			
4-24060	.00005	\$1.00	\$0.60
4-23010	.0001	1.00	.60
4-23020	.0002	1.00	.60
4-23025	.00025	1.00	.60
4-23030	.0003	1.00	.60
4-23050	.0005	1.00	.60
4-22010	.001	1.25	.75
4-22015	.0015	1.60	.96
4-22020	.002	1.90	1.14
4-22025	.0025	2.00	1.20
4-22030	.003	2.10	1.26
4-22040	.004	2.10	1.26
4-22050	.005	2.40	1.44
4-22060	.006	2.40	1.44
4-22080	.008	3.10	1.86
4-21010	.01	3.90	2.34

TYPE 4			
Cat. No.	Cap. Mfd.	List Price	Net Price
5000 V. D.C. Test— 2500 V. D.C. Working			
4-54060	.00005	\$1.25	\$0.75
4-53010	.0001	1.25	.75
4-53020	.0002	1.40	.84
4-53025	.00025	1.50	.90
4-53030	.0003	1.55	.93
4-53050	.0005	1.70	1.02
4-52010	.001	2.05	1.23
4-52015	.0015	2.70	1.62
4-52020	.002	3.10	1.86
4-52025	.0025	3.45	2.07
4-52030	.003	3.80	2.28
4-52040	.004	4.35	2.61
4-52050	.005	4.70	2.82

TYPE 9			
Cat. No.	Cap. Mfd.	List Price	Net Price
1200 V. D.C. Test— 600 V. D.C. Working			
9-14060	.00005	\$0.85	\$0.51
9-13010	.0001	.85	.51
9-13025	.00025	.85	.51
9-13050	.0005	.85	.51
9-12010	.001	.85	.51
9-12020	.002	.90	.54
9-12025	.0025	1.00	.60
9-12030	.003	1.20	.72
9-12040	.004	1.20	.72
9-12050	.005	1.20	.72
9-12060	.006	1.40	.84
9-12080	.008	1.65	.99
9-11010	.01	1.95	1.17
9-11015	.015	2.25	1.35
9-11020	.02	2.60	1.56
9-11025	.025	3.20	1.92
9-11030	.03	3.45	2.07
9-11040	.04	3.80	2.28
9-11050	.05	5.35	3.21
9-11060	.06	6.20	3.72

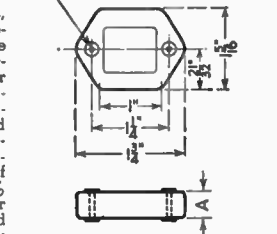
TYPE 9			
Cat. No.	Cap. Mfd.	List Price	Net Price
2500 V. D.C. Test— 1200 V. D.C. Working			
9-24060	.00005	\$1.00	\$0.60
9-23010	.0001	1.00	.60
9-23025	.00025	1.00	.60
9-23050	.0005	1.00	.60
9-22010	.001	1.25	.75
9-22020	.002	1.90	1.14
9-22025	.0025	2.00	1.20
9-22030	.003	2.20	1.32
9-22040	.004	2.20	1.32
9-22050	.005	2.40	1.44
9-22060	.006	2.40	1.44
9-22080	.008	3.10	1.86
9-21010	.01	3.90	2.34
9-21015	.015	4.65	2.79
9-21020	.02	5.45	3.27
9-21025	.025	6.10	3.66
9-21030	.03	6.40	3.84

TYPE 9			
Cat. No.	Cap. Mfd.	List Price	Net Price
5000 V. D.C. Test— 2500 V. D.C. Working			
9-54060	.00005	\$1.25	\$0.75
9-53010	.0001	1.25	.75
9-53025	.00025	1.50	.90
9-53050	.0005	1.70	1.02
9-52010	.001	2.05	1.23
9-52020	.002	3.10	1.86
9-52025	.0025	3.45	2.07
9-52030	.003	3.80	2.28
9-52040	.004	4.35	2.61
9-52050	.005	4.70	2.82
9-52060	.006	4.85	2.91
9-52080	.008	5.30	3.18
9-51010	.01	5.70	3.42
9-51015	.015	6.20	3.72

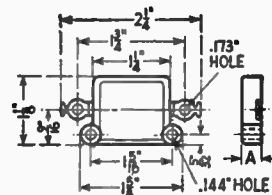
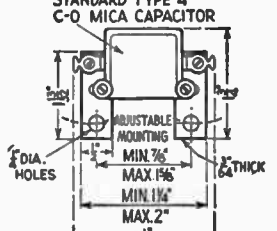
### Notes on Ordering Special Capacitors

- Type No. Suffix
- STANDARD TOLERANCE is plus or minus 10%. Also available on order in plus or minus 5% and 2%. For capacity tolerance of: 5% add 15c to list prices; 2% add 40c to list prices.
- "L" MOULDED IN LOW-LOSS BAKELITE available on order. Add "L" to Cat. No. (example: 4L-22060; 9L-11010). Add 25c to list prices.
- "S" SPECIAL SALT WATER IMMERSION SEAL AGAINST HUMIDITY. To order, add "S" to Cat. No. (example: 4S-53010; 9S-12050). Add 10c to list prices.
- "T" HEAT AGEING TREATMENT for stabilizing capacity over extremely wide temperature changes, minus 40° C. to plus 70° C., furnished on special order. Add "T" to Cat. No. (example: 4T-12010; 9T-21020). Add 15c to list prices.
- "LST" TO ORDER A COMBINATION OF ABOVE FEATURES, add letters specified to Cat. No. (example: 4LST-12040; 9LST-13020). Add 50c to list prices.
- INSULATION RESISTANCE—Brown Bakelite, 20,000 megohms per unit—Low-Loss Bakelite, 40,000 megohms per unit. Low-Loss Bakelite provides higher Q and lowers the power factor.
- "4E" SMALL METER BRACKETS adapted for Weston Model 301 meters, add "E" to Cat. No. (example: 4E-22050). Add 20c to list prices.
- "9A" UNTAPPED MOUNTING HOLES. Standard units are tapped for 6-32 and furnished with round head screws. For untapped mounting hole, .144" diameter (No. 6 clearance), add "A" to Cat. No. (example: 9A-11030).
- "9F" HIGHER VOLTAGE CONSTRUCTION, rated 6,000 v.d.c. test, 3,000 v.d.c.—1500 v.a.c. operating. Capacity range limited. Moulded in low-loss Bakelite, BM 262. The thickness of these units, or "A" dimension, is 7/16" for capacities up to .002 mfd. and 3/4" for capacities from .0025 to .005 mfd. max. To order, add "F" to Cat. No. (example: 9F-63050, the numeral "6" designating 6,000 volts test). Prices of "9F" units are double the list prices shown.
- "9R" HIGH STABILITY UNITS—Special high stability units, comprising low-loss Bakelite, BM 262, temperature aged and sealed construction for use as low power master oscillator tank capacitors or accessory positions. These units are fixed and permanent in characteristics, having a capacity-temperature coefficient of approximately plus .003% (30 parts per million) per degree C. To order, add "R" to Cat. No. (example: 9R-52020). Prices of 9R units are double the list prices shown.

### TYPE 9: 6-32 TAPPED HOLES



### TYPE 9: STANDARD TYPE 4 C-O MICA CAPACITOR



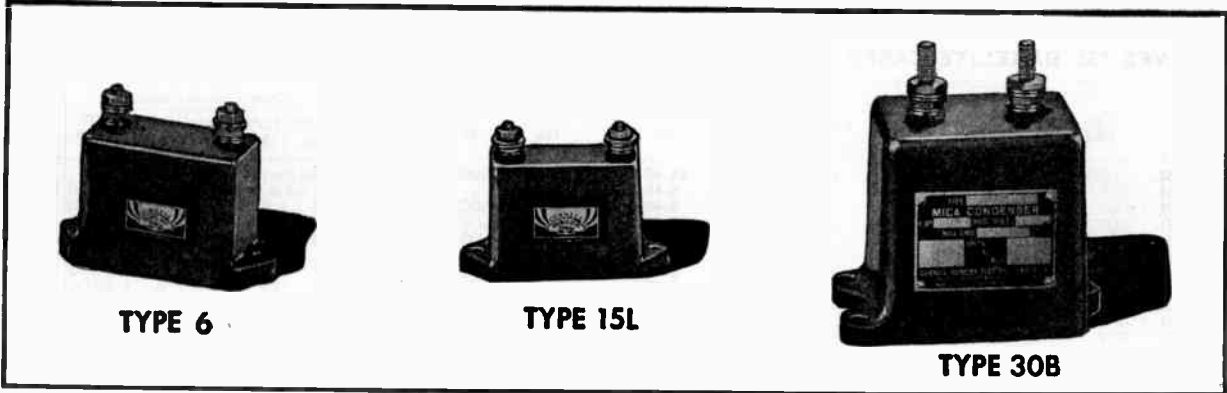
TYPE 4

TYPE 4E

\* Dimension "A" in diagram—11/16"  
† Dimension "A" in Diagram—3/4"



## BAKELITE CASED MICA TRANSMITTING CAPACITORS

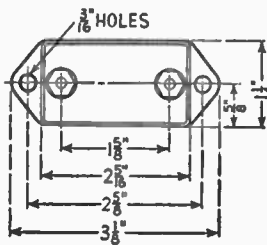


TYPE 6

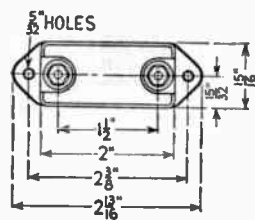
TYPE 15L

TYPE 30B

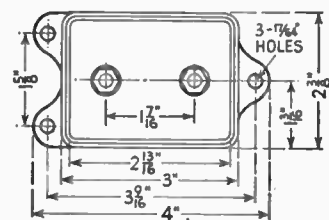
### BAKELITE CASED MICA CAPACITORS



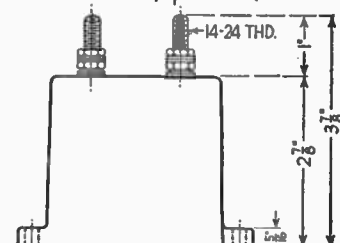
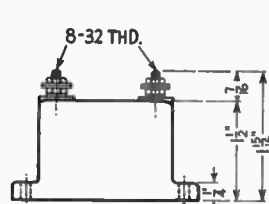
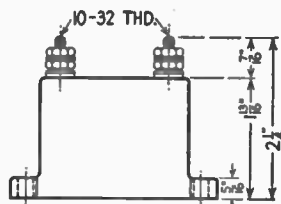
TYPE 6



TYPE 15



TYPE 30B



Types 6, 15L and 30B Mica Capacitors in moulded bakelite cases are designed for a wide variety of radio frequency applications where size and weight are at a premium, such as in aircraft, portable equipment, low-power transmitters and the earlier stages of high-power transmitters. They are specially suited for use as grid, plate, coupling, tank and by-pass functions. These units are among the smallest types employing the patented series-stack construction permitting their use on higher r.f. voltages.

#### Notes on Ordering Special Capacitors

**Type 15L** units are available only in low-loss Bakelite (BM-262 or equivalent) cases. Types 6 and 30B may be had in either standard (brown) or low-loss (yellow) Bakelite cases. When ordering low-loss units, add "L" to Cat. No. (example: 217-6L; 604-30BL). Add \$1.00 to list price for Type 6. Add \$1.50 to list price for Type 30B. **STANDARD CAPACITY TOLERANCES**—Plus or minus 5%. Tolerance of 2% can be furnished on special order. Add \$1.50 to list price for Types 6 and 15L. Add \$2.00 to list price for Type 30B. **OPERATING AMBIENT TEMPERATURE**—Up to 60° C. maximum. **SALT WATER IMMERSION SEAL**—To order, add "S" to Cat. No. (example: 246-6S; 726-15LS; 113-30BS). Add to list: \$.30 for Types 6 and 15L. Add to list: \$.50 for Type 30B. **"H" Type**—These units have been developed for use where excellent retrace and low temperature coefficient are required. Over a range of -40° C. to +70° C. the capacity temperature coefficient is approximately +.003% per degree C. A limited range of capacity and voltage ratings is available. Made only in low-loss Bakelite and sealed for immersion test. To order, add "H" to Cat. No. (example: 6H, 15H, 30BH). Add to list: \$4.00 for Type 6. Add to list: \$2.00 for Type 15L. Add to list: \$5.00 for Type 30B.

**TYPE 6K**—This unit is a still further refinement being a compensated unit which can be made with a positive, zero or negative coefficient within the limits of +.003% to -.005% per degree C. over a temperature range of from -40° C. to +70° C. Type 6K is available in a limited range of low capacities and voltage ratings. "K" Type includes low-loss Bakelite and immersion seal. When ordering Type 6K, temperature coefficient must be specified. (Type 6 only) Add to list price: for plus or minus 5%—\$12.00; for plus or minus 3%—\$13.00; for plus or minus 2%—\$14.00; for plus or minus 1%—\$18.00.

### TYPE 6 BAKELITE CASED MICA UNITS

Cat. No.	Cap. Mfd.	Test. Volt. Effective	Max. Oper. Cur. in Ampe.				List Price	Net Price
			3000 kc.	1000 kc.	300 kc.	100 kc.		
390-6	.00005	5,000	1.5	.8	.2	.07	\$14.40	\$8.64
362-6	.0000625	5,000	1.8	.8	.2	.07	14.40	8.64
321-6	.0001	5,000	2	1	.3	.1	14.40	8.64
395-6	.00015	5,000	3	1.5	.5	.16	14.40	8.64
307-6	.0002	5,000	3.5	1.7	.7	.18	14.40	8.64
364-6	.00025	5,000	5	2.5	1	.3	14.40	8.64
294A-6	.0003	5,000	3.5	2	.8	.4	14.40	8.64
283-6	.0004	5,000	4	2.5	1	.5	14.40	8.64
272-6	.0005	5,000	4	2	1.4	.8	14.40	8.64
266-6	.0006	5,000	5	3	1.6	.8	14.40	8.64
654-6	.00075	5,000	5	3.5	2	1	14.40	8.64
599-6	.0008	5,000	6	4	2	1	14.40	8.64
246-6	.001	5,000	7	4	2	1	14.40	8.64
234-6	.0015	5,000	9	5	3	1.5	14.40	8.64
215-6	.002	3,000	6	3	1.5	.8	14.40	8.64
217-6	.002	6,000	9	6	4	2	14.40	8.64
473-6	.0025	5,000	9	6	4	2	14.40	8.64
197-6	.003	3,000	8	6	4	2	14.40	8.64
184-6	.004	3,000	8	6	5	2	14.40	8.64
173-6	.005	2,000	8	5	3	1.5	14.40	8.64
474-6	.005	3,000	9	6.5	4	2	14.40	8.64
565-6	.0075	2,000	10	9	5	3	14.40	8.64
476-6	.008	2,000	11	9	5	3	14.40	8.64
162-6	.008	3,000	10	8	5	3	14.40	8.64
151-6	.01	2,000	10	8	5	3.5	14.40	8.64
140-6	.015	1,500	12	10	7	4	13.00	7.80
141-6	.015	2,000	12	11	8	4	14.40	8.64
131-6	.02	2,000	12	11	8	7	16.00	9.60
479-6	.03	2,000	14	20	15	7	16.00	9.60
480-6	.04	1,500	12	13	11	6	14.40	8.64
118-6	.05	1,500	13	15	12	7	14.50	8.70
111-6	.1	1,500	17	20	15	8	16.50	9.90
406-6	.1	1,000	18	20	15	8	14.40	8.64
110-6	.1—.1	250	20	20	15	10	14.40	8.64
105-6	.2	250	18	20	16	12	22.00	13.20
885-6	.25	250	18	20	16	12	24.00	14.40

(Types 15L and 30B listed on next Page)



## BAKELITE CASED MICA TRANSMITTING CAPACITORS

(Continued from preceding page)

### TYPE 15L BAKELITE CASED MICA UNITS

Cat. No.	Cap. Mfd.	Test. Volt. Effective	Max. Oper. Cur. in Amps.				List Price	Net Price
			3000 kc.	1000 kc.	300 kc.	100 kc.		
639-15L	.00005	3,000	1.2	.6	.15	.05	\$10.80	\$6.48
583-15L	.0001	3,000	2.2	.8	.3	.1	10.80	6.48
667-15L	.00015	3,000	2.3	1	.45	.15	10.80	6.48
582-15L	.0002	3,000	3	1.2	.6	.2	10.80	6.48
805-15L	.00025	3,000	3	2.5	1	.4	10.80	6.48
640-15L	.0003	3,000	3.5	2	.8	.4	10.80	6.48
641-15L	.0004	3,000	4	2	.9	.45	10.80	6.48
642-15L	.0005	3,000	4	2	1	.55	10.80	6.48
643-15L	.0006	3,000	4.5	2	1.2	.6	10.80	6.48
727-15L	.0008	3,000	4.5	2.5	1.5	.7	10.80	6.48
581-15L	.001	3,000	5	3	1.6	.8	10.80	6.48
679-15L	.0015	3,000	6	3.5	2	1	10.80	6.48
726-15L	.002	3,000	6.5	4	2.5	1.5	10.80	6.48
645-15L	.003	2,000	7.5	5	3	1.5	10.80	6.48
699-15L	.004	2,000	8	6	3.5	1.6	10.80	6.48
725-15L	.005	2,000	8.5	6.5	4	2	10.80	6.48
580-15L	.006	2,000	9	7.5	4.5	2.2	10.80	6.48
724-15L	.008	1,000	10	8	5	2.3	10.80	6.48
677-15L	.01	1,000	10	8	5	2.5	10.80	6.48
723-15L	.02	1,000	11	10	7	3	11.50	6.90
722-15L	.05	500	11	10	8	5	10.80	6.48
721-15L	.1	250	11	12	10	6	12.00	7.20

### TYPE 30B BAKELITE CASED MICA UNITS

Cat. No.	Cap. Mfd.	Test. Volt. Effective	Max. Oper. Cur. In Amps.				List Price	Net Price
			3000 kc.	1000 kc.	300 kc.	100 kc.		
533-30B	.0001	4,000	(20 Amps. at 60 mc.)	(3 Amps. at 4 mc.)			\$30.00	\$18.00
958-30B	.00025	8,000	7	4.5	1.5	.5	30.00	18.00
959-30B	.0005	8,000	8.5	6	3	1	30.00	18.00
960-30B	.001	8,000	10	8.5	4.5	1.5	34.00	20.40
961-30B	.002	8,000	11	11	7.5	2.5	34.00	20.40
759-30B	.003	8,000	12	14	10	5	36.00	21.60
757-30B	.004	8,000	12	14	10	6	38.00	22.80
758-30B	.005	8,000	13	15	11	6	42.00	25.20
756-30B	.006	6,000	15	15	11	6	42.00	25.20
962-30B	.01	5,000	16	20	15	8	45.00	27.00
915-30B	.01	8,000	16	20	15	8	48.00	28.80
963-30B	.02	5,000	18	20	17	10	48.00	28.80
741-30B	.03	4,000	20	20	18	12	48.00	28.80
771-30B	.05	2,000	18	25	22	12	54.00	32.40
964-30B	.05	4,000	18	25	22	12	54.00	32.40
113-30B	.1	2,000	18	25	22	12	42.00	25.20
603-30B	.2	600	18	25	22	12	38.00	22.80
760-30B	.25	600	18	25	22	12	38.00	22.80
933-30B	.3	600	18	25	22	12	38.00	22.80
604-30B	.5	600	18	25	22	12	46.00	27.60
898-30B	1.0	600	18	25	22	12	72.00	43.20



TYPE 110R10

## CORNELL-DUBILIER POWERCON VIBRATOR CONVERTERS

Think of the new sales opportunities open to you now that you have the dependable name of C-D in back of a complete line of converters. More TV installations! More work on farm power supplies! Marine work! And always you work with confidence in the quality, dependability and trouble-free performance of these converters, because they're typical C-D products.



TYPE 110RT25

### 110 Volts AC From A Battery Source

Model & Accessories	Input Voltage	Output Ratings	Dimensions L. x W. x D. (Inches)	Weight Lbs.	C-D Type Vibrator	List Price	Net Price
6R5 +	6V DC	110V AC 60-cycle 50-watt 80-100 P.F.	6 1/2 x 7 1/2 x 5 1/2	12	3103 H-D Single	\$41.95	\$25.17
6R10 **	6V DC	110V AC 60-cycle 100-watt 80-100 P.F.	7 x 12 1/2 x 7 1/2	19	4123 H-D Tandem	59.50	35.70
12R8 +	12V DC	110V AC 60-cycle 80-watt 80-100 P.F.	6 1/2 x 7 1/2 x 5 1/2	12	3087 H-D Single	41.95	25.17
12RU15 **	12V DC	110V AC 60-cycle 150-watt 60-100 P.F.	7 x 12 1/2 x 7 1/2	22	3047 H-D Tandem	78.95	47.37
32R8 +	32V DC	110V AC 60-cycle 80-watt 80-100 P.F.	6 1/2 x 7 1/2 x 5 1/2	13 1/2	2989 H-D Single	48.50	29.10
32RU15 ** †	32V DC	110V AC 60-cycle 150-watt 60-100 P.F.	6 1/2 x 12 1/2 x 7 1/2	22 1/2	2989 H-D Single	73.50	44.10

### 110 Volts AC From A 110-Volt DC Line

Model	Input Voltage	Output Ratings	Dimensions L. x W. x D. (Inches)	Weight Lbs.	C-D Type Vibrator	List Price	Net Price
110PA5	110V DC	110V AC 60-cycle 50 VA 50-100 P.F.	3 1/2 x 6 1/2 x 2 1/2	2	2522 Auto-type	14.95	8.97
110PB5	110V DC	110V AC 60-cycle 50 VA 50-100 P.F.	3 1/2 x 6 1/2 x 2 1/2	2	2522 Auto-type	16.95	10.17
110R10	110V DC	110V AC 60-cycle 100-watt 80-100 P.F.	6 1/2 x 7 1/2 x 5 1/2	10 1/2	1315 H-D Single	39.95	23.97
110R15 †	110V DC	110V AC 60-cycle 150-watt 80-100 P.F.	6 1/2 x 12 1/2 x 7 1/2	15	1315 H-D Single	66.95	40.17
110RA15	110V DC	110V AC 60-cycle 150-watt 80-100 P.F.	6 1/2 x 7 1/2 x 5 1/2	13 1/2	1315 H-D Single	48.75	29.25
110RT25 X *	110V DC	110V AC 60-cycle 250-watt 80-100 P.F.	6 1/2 x 12 1/2 x 8 1/2	22 1/2	3077V H-D Single	69.95	41.97
110RT35 †	110V DC	110V AC 60-cycle 350-watt 80-100 P.F.	7 1/2 x 14 x 8 1/2	40 1/2	3079 H-D Tandem	119.50	71.70

### Battery Eliminators Using 110-Volt AC Power

Model	Input Voltage	Output Ratings	Dimensions L. x W. x D. (Inches)	Weight Lbs.	C-D Type	List Price	Net Price
110BA6	110V AC	6V DC 10 Amp. 60-W	7 1/2 x 12 1/2 x 8 1/2	16	None	54.95	32.97
110BA12	110V AC	12V DC 10 Amp. 120-W 6V DC 20 Amp. 120-W	7 1/2 x 13 x 8 1/2	24 1/2	None	85.50	51.30

### Accessories For Converters

Model	Description	Input Voltage	List Price	Net Price
* 3155	Separate Auto-switching Unit	Install within Model 110RT25	14.50	8.70
+ 3164	Mobile Mounting Brackets	Use with 6R5, 12R8, 32R8	1.95	1.17
** 3165	Mobile Mounting Brackets	Use with 6R10, 12RU15, 32RU15	1.95	1.17

† Denotes automatic switching unit built into converter.

X Denotes converter supplied with adjustable frequency vibrator for television.

NOTE: On Model 110RT25, Type 1315 Standard Vibrator may be used in place of 3077-V Adjustable Vibrator where exact 60 cycles is not required.



## CAPACITOR TEST INSTRUMENTS



**MODEL BF-50**

### CAPACITOR ANALYZER

The Model BF-50 Capacitor Analyzer quickly and accurately measures all important characteristics of all types of capacitors. It offers the most accurate and thorough capacitor test of any instrument of its type, and may be operated on any 110-volt, 50-60 cycle power line.

The analyzer will determine the true condition of all paper, mica and electrolytic capacitors, including A.C. motor starting types.

#### Features of Model BF-50 Analyzer

1. Measures Capacity—Accurately measures capacity of paper, mica, air, electrolytic and motor-starting capacitors from .00001 to .240 mfd.
2. Measures Power Factor—Measurements of power factor from zero to 50 percent on all types of electrolytic capacitors including motor-starting types.
3. Employs Wien Bridge—Assures permanent accuracy of capacity and power factor measurements. Readings not affected by line voltage variations.
4. Indicates Insulation Resistance—Insulation resistance measurements of paper and mica capacitors up to 1500 megohms. Also measures many types of insulation.
5. Indicates Leakage—Measurements of leakage of electrolytic capacitors by means of built-in direct current power supply.
6. Visual Eye Leakage Indicator—Provides simplified and reliable leakage tests on all types of capacitors. Enables measurements to be made rapidly.
7. Detects Defective Capacitors—Character measurements, such as leaky, shorted, open, high and low capacity, and high power factor on all capacitors.
8. High Sensitivity on All Measurements—Amplifier for capacity, power factor and leakage tests provides sharp and accurate readings. Amplifier built-in Analyzer.
9. Balance Sensitivity Control—Provides sharp or broad balances for quick and accurate readings. All readings are made simply and directly.
10. Direct Reading Linear Scale Calibration—Provides simplified measurements. All scales on panel uniformly spaced, easy to read, thus avoiding possible errors in using multipliers or charts.
11. Push-Button Switching—For convenient and simplified adjustments, all tests and circuit changes are made by means of modern push-button switches.
12. Visual Eye Bridge Balance—Visual detector gives positive indication of bridge balance for convenient, simplified and accurate capacity and power factor measurements.
13. Six Color-Coded Scales—Accurately calibrated, six color-coded scales. Uniformly spaced over total spacing of sixty inches. Easy to read. No "blind" spots.
14. General Purpose Instrument—May be used to check continuity capacity between circuits, insulation of transformer windings and other types of coils, etc.
15. Self-Contained—Portable—An instrument complete in itself, requiring no external standard, headphones, meters or accessories. A portable unit, for 110 volt, 50-60 cycle operation, supplied in walnut cabinet, removable cover, with carrying handle. Size, 6½ x 12 x 9¼ inches. Weight, 9 pounds.

#### MODEL BF-50 CAPACITOR ANALYZER

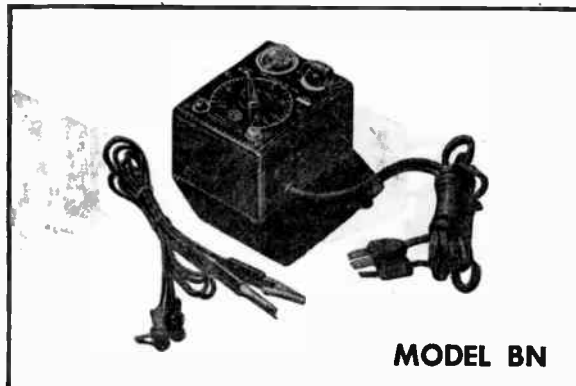
Net Price complete with tubes.....

Replacement Tubes for Use in Model BF-50:

6E5—List Price \$1.80—Net Price \$1.08

12A7—List Price \$2.65—Net Price \$1.59

**\$42.65**



**MODEL BN**

### CAPACITOR BRIDGE

#### Features of Model BN Capacitor Bridge

1. Measures Capacity—Accurately measures capacity of paper mica electrolytic and air capacitors from .00001 mfd. to 50 mfd.
2. Indicates Power Factor—Power factor of electrolytic capacitor indicated by means of visual eye detector tube.
3. Detects Defective Capacitors—Detects open and short circuits, high and low capacity, and high power factor.
4. Checks Circuit Continuity—May be used as continuity meter. A handy instrument for checking circuits, coils, transformers and many other uses. For operation on 110 volts, 60 cycles.
5. Employs Wien Bridge—Employs Wien Bridge circuit for all measurements. Accuracy independent of line voltage variations.
6. Visual Eye Bridge Balance—Dual type visual bridge balance for accurate measurements facilitates quick tests on service jobs.
7. Direct Reading Scale—Direct reading ranges with all scale markings directly in microfarads. Clear reading dial scale. All capacity calibrations marked on panel. No charts or multipliers required.
8. Self-Contained—The Capacitor Bridge is complete in itself and requires no headphones, standards, external meters, etc.
9. Extremely Compact—The unusually small size of this bridge makes it particularly handy for portable use—3¾" x 5" x 3" weight 2 pounds.
10. Attractive—Supplied in attractive walnut Bakelite case complete with detachable test leads and useful instruction booklet.

#### MODEL BN CAPACITOR BRIDGE

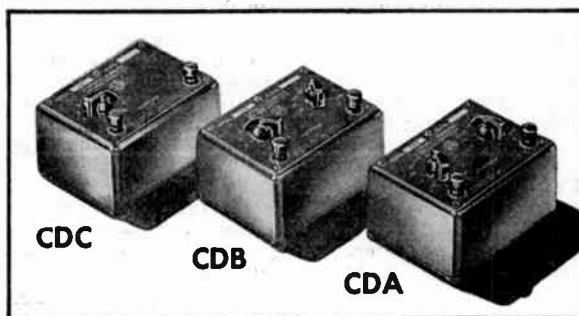
Net Price complete with tubes.....

**\$20.35**

Replacement tubes for use in Model BN Bridge:

6AF6G—List Price \$2.20—Net Price \$1.32

12A7—List Price \$2.65—Net Price \$1.59



**CDC**

**CDB**

**CDA**

### CAPACITOR DECADES

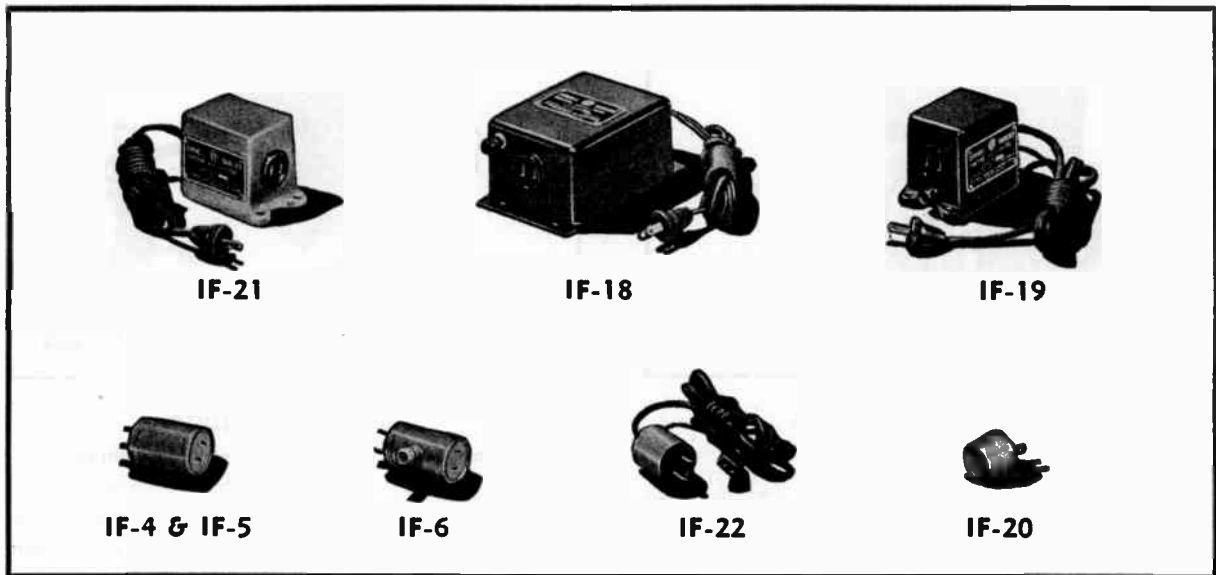
C-D Capacitor Decades provide accurate standards over a wide range of capacity. May be used in groups of the three decades, shown above, or used individually for maximum flexibility. Each decade is furnished with calibration chart giving exact capacity values for all scale markings, extending use to more precise measurements.

Rated Voltage—600 D.C.—220 A.C.

Model	Capacity	+ or - Tol.	Dielectric	Net Price
CDA-5	.011 mfd. in .0001 mfd. steps	5%	Mica	\$8.50
CDB-5	1.1 mfd. in .01 mfd. steps	5%	Oil-Paper	8.50
CDB-3	1.1 mfd. in .01 mfd. steps	3%	Oil-Paper	12.00
CDC-5	10.0 mfd. in 1.0 mfd. steps	5%	Oil-Paper	17.50
CDC-3	10.0 mfd. in 1.0 mfd. steps	3%	Oil-Paper	19.50



## QUIETONE INTERFERENCE FILTERS



### RADIO AND APPLIANCE QUIETONES

Most satisfactory results are obtained when Quietones are installed at the source of the interference. A Quietone installed in connection with an offending appliance corrects the noise caused by that appliance.

Where source of interference cannot be located a Quietone connected in the electric supply line of the radio receiver will alleviate, if not fully correct, the condition. When a Quietone is installed, interference will be greatly reduced. Remaining interference usually enters receiver through the antenna system.

#### Quietones for Use at the Radio Receiver

**TYPE IF-4**—For use on small radio receivers, such as A.C.-D.C. midget sets, etc., where noise level is not too severe. Connects in power line between the radio receiver plug and wall receptacle. Rating: 110 V.A.C.-D.C. 5 amps. Colors—Furnished in ivory, walnut, or green finish.

List Price \$1.10 Net Price \$0.66

**TYPE IF-18**—For use in connection with all radio receivers where noise level is severe. Furnished in Bakelite case (see colors). Employs highly effective all-wave capacitive-inductive type filter. Ratings: 110 V.A.C.-D.C. 5 amps. Colors—Furnished in ivory or walnut Bakelite.

List Price \$8.35 Net Price \$5.01

#### Quietones for Use at Appliances

**TYPE IF-5**—For small electrical appliances such as food mixers, hair dryers, etc., where radio interference is of low intensity. Plug type filter. Convenient to install. Rating 110 V.A.C.-D.C. 5 amps. Colors—Furnished in ivory, walnut or green finish. List Price \$1.10 Net Price \$0.66

**TYPE IF-6**—For all types of home electrical appliances where interference is of moderately low intensity. Installed between appliance and power supply line with short return lead which reduces radiation. Rating: 110 V.A.C.-D.C. 5 amps. Colors—Furnished in ivory, walnut or green finish.

List Price \$1.75 Net Price \$1.05

**TYPE IF-18**—An efficient all-wave capacitive-inductive sectional band type filter for use in connection with all types of electrical appliances where interference conditions are severe. Provided with frame connection for reduction of radiation. Furnished in Bakelite case (see colors). Rating: 110 V.A.C.-D.C. 5 amps. Colors—Bakelite case, walnut finished.

List Price \$8.35 Net Price \$5.01

**TYPE IF-19**—Capacitive-inductive type filter for use where interference is severe. Frame connection provided. Furnished in Bakelite case. Rating: 110 V.A.C.-D.C. 5 amps. Colors—Bakelite case. Ivory or walnut finish.

List Price \$7.00 Net Price \$4.20

**TYPE IF-20**—For use on small electrical appliances where interference is very low. Simply connected to cord plug of appliance and plugged into wall receptacle. Rating: 110 V.A.C.-D.C. 5 amps. Colors—Bakelite case. Ivory or walnut finish.

List Price \$0.75 Net Price \$0.45

**TYPE IF-21**—All-wave capacitive-inductive type filter for use on appliances where return lead to the frame of appliance cannot be made, such as shaver, barber clippers, etc. Furnished in Bakelite case. Rating: 110 V.A.C.-D.C. 1.6 amps. Colors—Bakelite case. Ivory or walnut finish.

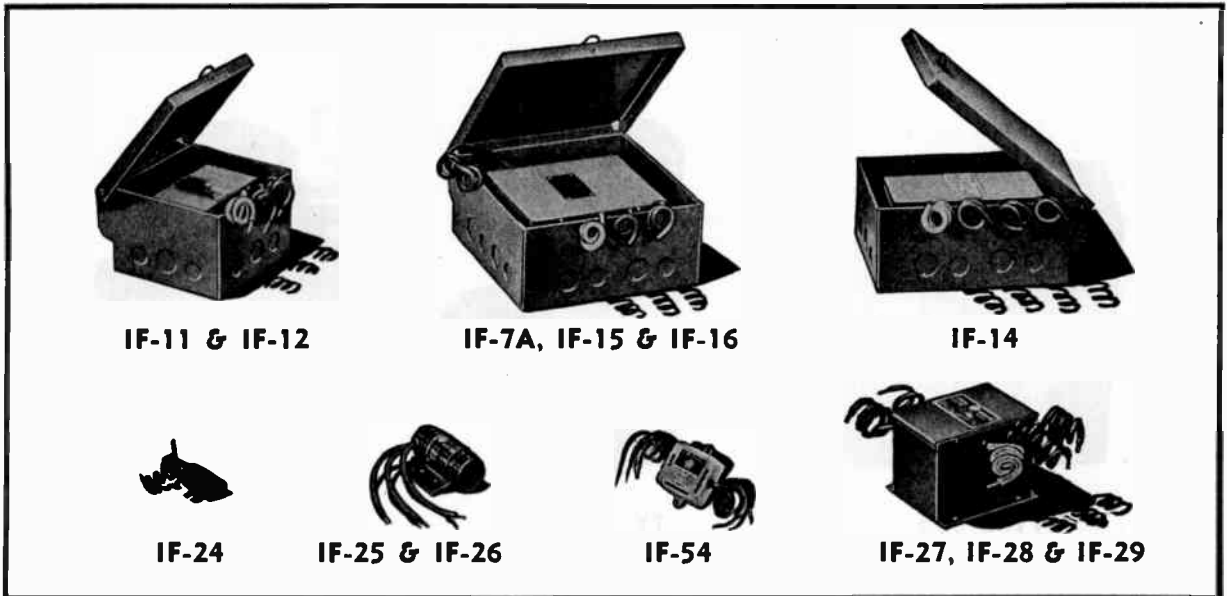
List Price \$4.00 Net Price \$2.40

**TYPE IF-22**—For use in connection with electric shavers of all standard types. Line cord and plug provided with Schick and Packard type adapters which fit practically all type shavers. (Specify type desired when ordering.) Type IF-22A for Schick, Knapp Monarch, and similar type shavers. Type IF-22B for Packard, Zephyr, Remington-Rand and Ronson type shavers. Rating: 110 V.A.C. 5 amps. Colors—Bakelite case. Ivory or black finish.

List Price \$2.75 Net Price \$1.65



## QUIETONE INTERFERENCE FILTERS



IF-11 & IF-12

IF-7A, IF-15 & IF-16

IF-14

IF-24

IF-25 & IF-26

IF-54

IF-27, IF-28 & IF-29

### INDUSTRIAL QUIETONES

Although atmospheric disturbances in many instances cause radio noises, this condition is not the principal source of annoying noises. With the average radio receiver, noise is generally caused by the operation of electrical appliances or apparatus which create high frequency oscillations known as "man-made static". Many types of equipment cause minute sparks as a result of a change in electrical conditions within the device, which are essential to its operation. In effect these appliances act as miniature radio transmitters, setting up a disturbance which may affect radio receivers at a considerable distance.

It is highly desirable to correct noise conditions at the source as one filter properly installed at this point may eliminate the noise in a number of radio receivers. Where it is impossible to locate the equipment which is causing the interference a Quietone installed at the receiver will correct the noise in that receiver.

The Quietones listed below will correct radio noise conditions caused by motors, generators, elevators, stokers and many other types of industrial electrical apparatus. They are designed for convenient mounting, and contain highest quality capacitors, with lowest possible impedance internal connections. There are no current limitations for (CP) Capacitive Quietones.

#### Fluorescent Light Quietones

Among the Quietone Interference Filters especially suited to correct noise conditions caused at fluorescent lights, as well as other electrical appliances, are types IF-6, IF-24 and IF-54, the former being a very convenient plug-in arrangement that fits the receptacles of floor and table lamps.

Type IF-24 Quietone is a dual capacitive type filter for use on fluorescent light and other electrical equipment where noise conditions are not too severe. It is contained in a round metal casing  $\frac{1}{8}$ " diameter by 2" long and provided with insulated wire leads 8" long.

#### Oil Burner Ignition Quietones

For heavy duty filtering service on oil burners and other equipment such as stokers, motors, refrigerators, etc., Quietone type IF-7A is recommended for efficient results. This unit is mounted close to the equipment causing the interference with wiring in BX or conduit.

Type IF-54 Quietone is a capacitive-inductive filter which provides extremely high attenuation over a wide range of frequencies. This unit is housed in a drawn metal container 2" x 2" x  $1\frac{1}{8}$ " high, and provided with insulated wire leads 6" long. It is rated at 2 amps. 110-220 V.A.C. or D.C.

#### Fluorescent Light Quietones

Type	Volts A.C.— D.C.	Connections	Housing	List Price	Net Price
IF-6	110	Plug-in	Metal	\$1.75	\$1.05
IF-24	110	Flex-Leads	Metal	1.10	.66
IF-54	110-220	Flex-Leads	Metal	2.25	1.35

#### Capacitive (CP) Quietones

Type	Volts A.C.— D.C.	Connections	Housing	List Price	Net Price
IF-25	110-220	Flex-Leads	Metal	\$4.50	\$2.70
IF-25	110-220	Flex-Leads	Metal	6.00	3.60
IF-11	110	BX	Cutout Box	12.00	7.20
IF-12	220	BX	Cutout Box	16.50	9.90
IF-14**	110-220	BX	Cutout Box	22.50	13.50

\*\* All Quietones listed above with exception of IF-14 are for single phase circuits. IF-14 is for 2 or 3 phase circuits. The Quietones listed below are for the more severe radio noise conditions caused by motors, generators, elevators, diathermy, oil burners, etc. They are designed for convenient mounting and quick connection to these machines. They consist of low-loss coils and highest quality capacitors which correct noise conditions in both broadcast and short wave receivers. They are the most efficient filters available for heavy duty application. All capacitive-inductive (CI) Quietones are for single phase circuits.

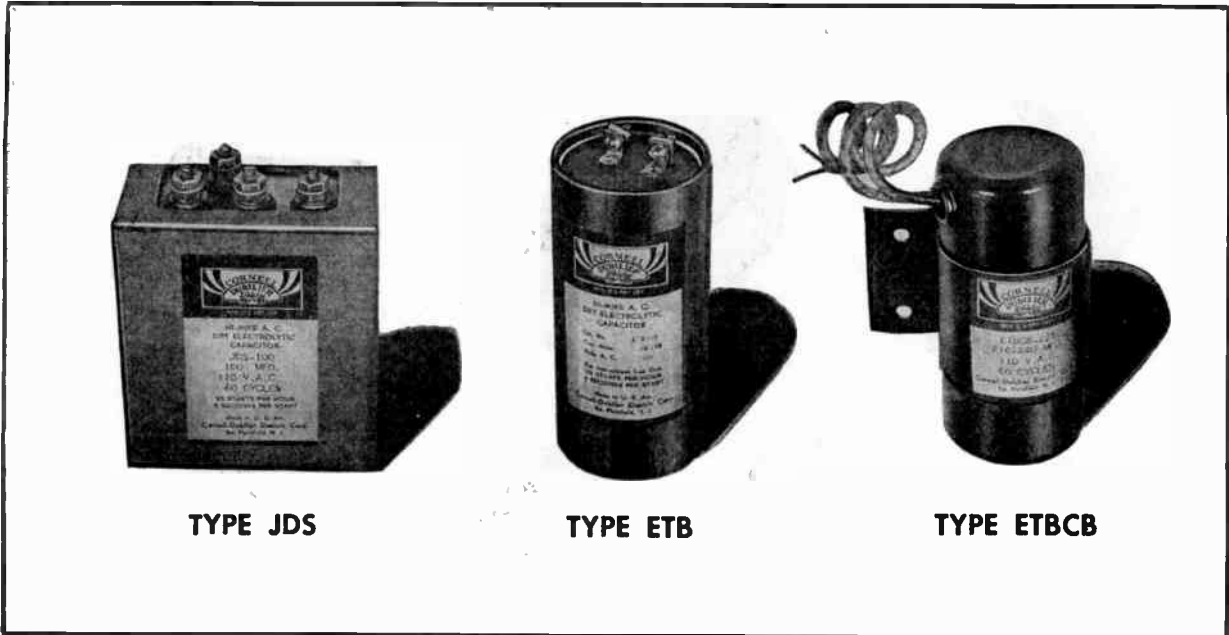
#### Capacitive-Inductive (CI) Quietones

Type	Volts A.C.— D.C.	Max. Amps.	Connections	Housing	List Price	Net Price
IF-7A*	110-220	5	BX	Cutout Box	\$12.50	\$7.50
IF-15	110-220	10	BX	Cutout Box	25.00	15.00
IF-16	110-220	20	BX	Cutout Box	35.00	21.00
IF-27	110	5	Flex-Leads	Steel Box	7.00	4.20
IF-28	110	10	Flex-Leads	Steel Box	12.50	7.50
IF-29	110	20	Flex-Leads	Steel Box	22.00	13.20

\* For use on oil burners.



## A. C. MOTOR STARTING CAPACITORS



TYPE JDS

TYPE ETB

TYPE ETBCB

### A.C. MOTOR STARTING REPLACEMENT CAPACITORS

Types ETB and JDS Electrolytic Motor-Starting Capacitors are universal replacement units for use in standard makes of oil-burners, refrigerators and other motor driven equipment. The list of units below simplifies the selection of the capacitor required when the capacity, voltage rating, and size are known.

In many cases where a round can-type unit is to be replaced a smaller size capacitor of the same capacity and voltage rating may be selected as a replacement. The smaller size unit may be wrapped tightly with ordinary corrugated paper and fitted into the capacitor housing on the motor. While only the most widely used range of capacities are listed below, Type ETB 110 V.A.C. capacitors can be supplied in intermediate capacities from 10 mfd. to 480 mfd.

Write for complete A.C. Motor Starting Replacement Capacitors, Catalog No. 163.

#### TYPE JDS—110 VOLTS A.C. 50-60 CYCLES

Cat. No.	Cap. Mfd.	Dimensions—Ins. L. x W. x T.	List Price	Net Price
JDS70	70	3 1/2 x 3 1/2 x 2	\$3.20	\$1.92
JDS80	80	3 1/2 x 3 1/2 x 2	3.20	1.92
JDS90	90	3 1/2 x 3 1/2 x 2	3.20	1.92
JDS100	100	3 1/2 x 3 1/2 x 2	3.34	2.00
JDS115	115	3 1/2 x 3 1/2 x 2	3.79	2.27
JDS130	130	3 1/2 x 3 1/2 x 2	3.79	2.27

Type ETB and JDS units are furnished with tightly fitted insulating tube or paper box casings with screw terminals. Type ETB units are available with black lacquered steel end caps, designated as Type ETBC, or with both end caps and black lacquered steel mounting bracket designated as Type ETBCB (see illustration above). Units must be designated accordingly upon ordering. (See note below.)

#### TYPE ETB—110 VOLTS A.C. 50-60 CYCLES

Cat. No.	Cap. Mfd. Min.—Max.	Dimensions—Ins. Dia. x Lgth.	List Price	Net Price
ETB-20	20-24	1 3/4 x 2 3/4	\$1.70	\$1.02
ETB-35	32-36	1 3/4 x 2 3/4	1.82	1.09
ETB-40	38-46	1 3/4 x 2 3/4	1.82	1.09
ETB-45	43-48	1 3/4 x 2 3/4	1.82	1.09
ETB-55	53-60	1 3/4 x 2 3/4	1.89	1.13
ETB-70	64-72	1 3/4 x 2 3/4	1.89	1.13
ETB-80	75-84	1 3/4 x 3 1/4	2.02	1.21
ETB-90	86-96	1 3/4 x 3 1/4	2.08	1.25
ETB-100	97-107	1 3/4 x 3 1/4	2.14	1.28
ETB-110	107-129	1 3/4 x 3 1/4	2.14	1.28
ETB-115	108-120	1 3/4 x 3 1/4	2.14	1.28
ETB-130	124-138	1 3/4 x 3 1/4	2.27	1.36
ETB-145	130-157	1 3/4 x 4 1/4	2.52	1.51
ETB-155	145-162	1 3/4 x 4 1/4	2.78	1.67
ETB-175	161-180	1 3/4 x 4 1/4	3.03	1.82
ETB-200	189-210	1 3/4 x 4 1/4	3.59	2.15
ETB-215	190-240	1 3/4 x 3 1/4	4.11	2.47
ETB-225	216-240	1 3/4 x 4 1/4	4.11	2.47
ETB-340	324-360	2 x 4 1/4	6.06	3.64
ETB-400	378-420	2 x 4 1/4	6.83	4.10
ETB-450	432-480	2 1/2 x 4 1/4	7.59	4.55

NOTE—For units with metal end caps, Type ETBC, add 60c to list price. For units with metal end caps and mounting bracket, Type ETBCB, add \$1.00 to list price.



### SENIOR AND JUNIOR "SERVICE MIKES"

These capacitors are designed for emergency replacements of A. C. motor starting electrolytic capacitors from 18.75 to 300 mfd. They enable the motor repair man to determine correct capacity required for a given motor and eliminate necessity of carrying stock of assorted sizes.

Each capacitor provides a range of twelve separate capacities by means of changing external connections at four terminals, two at each end. Both units are for 110-120 V.A.C. 60 cycle duty.

JUNIOR "SERVICE MIKE", 18.75 to 150 mfd., size 1 1/4" dia. x 3 3/4" long. Complete with leads, clips and jumpers. Net Price \$4.65

SENIOR "SERVICE MIKE", 37.5 to 300 mfd., size 2 1/4" dia. x 4 1/4" long. Complete with leads, clips and jumpers. Net Price \$5.50

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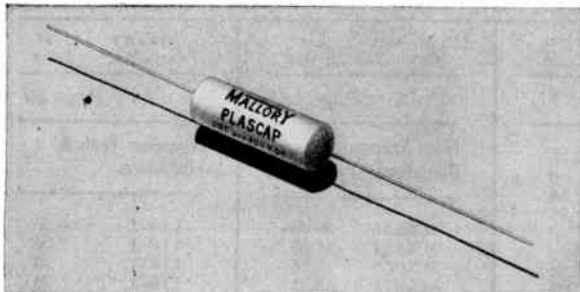
# MALLORY CAPACITORS • LIST PRICES

★ Complete descriptions of these parts will be found on the following pages

Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price
<i>Mallory Page 9</i>		<i>Mallory Page 10</i>		<i>Mallory Page 11</i>		<i>Mallory Page 12</i>		<i>Mallory Page 13</i>	
<b>High Capacity Dry Electrolytic Capacitors and Non-Polarized Dry Electrolytic Capacitors</b>		P5310	\$1.90	TP413	.32	<b>Metal Cased Oil Impregnated Paper Capacitors</b>		AS165	\$1.50
HC5005	\$4.80	P6410	1.90	TP414	.32	OT101	\$0.95	AS185	1.75
HC5010	7.00	P7010	2.00	TP415	.36	OT108	1.10	AS525	1.35
HC5020	9.10	P7510	2.00	TP416	.36	OT110	1.25	AS535	1.60
HC15010	10.50	P8610	2.10	TP417	.45	OT113	1.70	AS565	2.00
HC20005	9.25	P9710	2.15	TP418	.41	OT116	2.20	AM454	.65
HC45003	10.00	P10810	2.15	TP419	.50	OT301	1.10	FM441	.85
NP0340	8.50	P12410	2.25	TP420	.50	OT303	1.20	FM442	.65
NP1225	5.00	P13010	2.40	TP421	.23	OT310	1.50	DL445	2.25
NP1235	6.00	P14510	2.80	TP422	.81	OT370	1.20	RF480	.80
NP1255	8.00	P16110	3.05	TP423	.23	OT371	1.20	RF481	.90
NP2525	10.00	MSU138	3.65	TP424	.27	OT372	1.20	RF482	1.15
NP3003	3.00	P19410	3.65	TP425	.27	OT373	1.20	CA275X	3.00
NP3006	3.75	MSU138	4.00	TP426	.27	OT375	1.25	<b>Steel Cased Oil Filled Capacitors</b>	
NP3008	4.50	P21610	4.10	TP427	.32	OT376	1.30	CB403	\$2.25
NP3014	7.00	P24310	4.55	TP428	.32	OT377	1.20	CB404	2.40
NP3020	9.00	P27010	5.30	TP429	.36	OT378	1.30	CB405	2.85
NP3025	11.25	P32410	6.05	TP430	.41	OT379	1.30	CB406	3.60
NP4503	5.50	P34010	6.40	TP431	.54	OT380	1.40	CB602	2.65
NP4505	7.50	P37810	6.85	TP432	.72	OT458	1.25	CB603	2.80
NP4510	10.50	P40010	7.25	TP433	1.13	OT459	1.25	CB604	3.00
<b>Bath Tub Dry Electrolytic Capacitors</b>		P34010	7.90	TP434	.45	OT460	1.25	CB605	3.40
BS26	\$2.70	P2520	3.35	TP435	.45	OT461	1.25	CB1002	2.85
BS29	2.80	P3220	3.80	TP437	.54	OT462	1.30	CB1003	2.95
BS36	2.75	P3820	4.30	TP439	.68	OT463	1.30	CB1004	3.20
BS39	3.00	P4320	4.55	TP442	.50	OT464	1.35	CBD403	3.25
BS45	2.95	P5320	5.20	TP444	.45	OT465	1.40	CBD404	3.75
BS48	3.20	P6420	5.96	TP445	.27	OT466	1.40	CBD602	3.35
BS62	3.10	P7020	6.25	TP450	.27	OT467	1.45	CBT403	4.00
BS65	3.45	P7520	6.60	TP451	.32	<b>Vibrator Buffer Capacitor</b>		CBT404	4.75
BS81	4.85	P8620	7.35	TP452	.41	VB470	\$1.10	CBT802	3.80
BS91	5.50	<b>Capacitor Selector</b>		TP453	.59	VB471	1.15	<b>Uncased Wax Capacitor</b>	
<i>Mallory Page 10</i>		MSS100	\$6.80 net	TP454	.68	VD491	.65	UB351	\$1.00
<b>AC Motor Starting Capacitors • Dry Electrolytic</b>		MSS101	15.50 net	TP455	.45	VO480	.65	UB352	1.50
MSG220	\$3.05	<i>Mallory Page 11</i>		TP456	.45	<b>Miniature Metal Tubular Capacitors</b>		UB353	2.60
MSG221	3.05	<b>Continuous Duty • Oil Impregnated AC Capacitors</b>		TP457	.45	MT105	\$0.90	UB354	1.15
MSG222	3.20	RP3301	\$4.20	TP458	.45	MT107	.90	UB355	1.80
MSG223	3.20	RP3302	5.20	TP459	.45	MT115	.90	UB356	3.00
MSF224	3.20	RP3303	5.55	TP460	.45	MT125	.90	UB357	1.05
MSG225	3.35	RP3304	6.20	TP461	.45	MT127	.95	UB358	1.40
MSG226	3.35	RP3305	6.80	TP462	.45	MT135	.95	UB359	2.10
MSF227	3.35	RP3306	7.50	TP463	.45	MT145	1.00	UB364	3.90
MSG228	3.80	RP3307	7.90	TP464	.45	MT605	.95	UB362	2.30
MSF229	3.80	RP3308	8.35	TP465	.54	MT607	.95	UB363	3.80
MSG229	3.80	RP3310	9.55	TP466	.54	MT615	.95	<i>Mallory Page 14</i>	
MSG230	4.30	RP3312	10.90	TP467	.63	MT625	.95	<b>Ceramic Capacitors</b>	
MSG231	4.55	RP3315	13.80	<i>Mallory Page 12</i>		<i>Mallory Page 13</i>		UC521	\$0.25
MSF232	4.55	<b>Tubular Paper Capacitors</b>		<b>Oil Impregnated Tubular Paper Capacitors</b>		<b>Automotive Noise Suppression Capacitors</b>		UC522	.25
MSF233	5.20	TP400	\$0.23	OW340	\$0.55	AG442	\$0.80	UC523	.25
MSG234	6.85	TP401	.23	OW341	.55	AG443	1.00	UC525	.30
MSG250	5.45	TP402	.23	OW331	.55	AG444	.60	UC531	.25
MSG251	5.30	TP403	.23	OW342	.55	AG450	1.50	UC532	.25
MSF252	5.30	TP404	.23	OW343	.55	AG451	.65	UC533	.25
MSG253	6.85	TP405	.23	OW332	.55	AG452	.90	UC535	.25
<b>AC Motor Starting Capacitors • Dry Electrolytic</b>		TP406	.23	OW344	.55	AG455	1.50	UC541	.25
MSU120	\$1.70	TP407	.23	OW345	.55	AS125	1.20	UC545	.25
MSU121	1.70	TP408	.23	OW346	.60	AS145	1.40	UC5215	.25
MSU122	1.85	TP409	.23	OW333	.60	<i>Mallory Page 14</i>		UC5225	.25
MSU123	1.85	TP410	.27	OW334	.60	<b>Ceramic Capacitors</b>		UC5315	.25
MSU124	1.85	TP411	.27	OW335	.60	UC5325	.25	UC5325	.25
		TP412	.27	OW336	.60	UC5375	.25	UC5415	.25
				OW337	.60	UC5425	.25	UC5475	.25
				OW338	.70				
				OW339	.70				
				OW611	1.20				
				OW612	1.25				
				OW613	1.25				
				OW621	1.10				
				OW622	1.10				
				OW623	1.15				
				OW625	1.15				
				OW6275	1.20				
				OW635	1.10				
				OWD335	.80				



# MALLORY PLASTIC TUBULAR CAPACITORS



## MALLORY PLASCAP\*



**APPLICATION**—For use in R.F. bypass and coupling circuits in all television, AM, FM receivers and other electronic equipment. Especially suited for applications where small size and ability to withstand heat are paramount.

**DESCRIPTION**—Triple sealed plastic tubular capacitors. Unique impregnant results in stable capacity, low power factor and high insulation resistance over a wide range of temperatures. Will operate continuously at 85°C. Two bare tinned copper leads, one at each end, are sealed by MALLOCENE (exclusive Mallory plastic development). Each lead is fastened directly and solidly to the cartridge. The lead to outside foil is clearly marked.

**TERMINALS**—Two bare tinned copper leads, one at each end.

**MOUNTING**—By means of their leads. This mounting is adequate due to the capacitor's small size, light weight and mechanical strength. If desired, TH clips of applicable size may be used. See page 20 for mounting hardware.

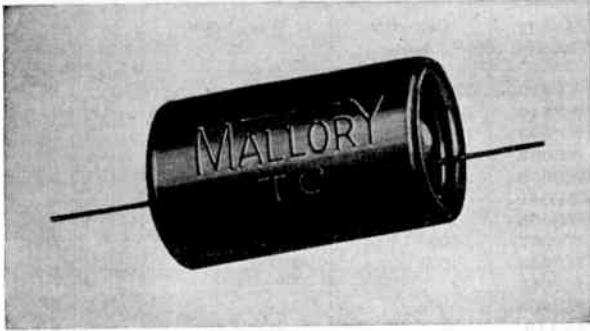
**PACKAGING**—10 to a card, 1 card per display carton. 25 and 50 bulk packaged per display carton.

Mallory Cat. No.	Capacity Mfd.	Volts D.C.	Size Dia. Length
PT411	.01	400	3/8 x 1
PT412	.02	400	3/8 x 1 1/4
PT413	.03	400	7/16 x 1 1/4
PT415	.05	400	1/2 x 1 1/4
PT401	.1	400	1/2 x 1 1/2
PT4025	.25	400	3/4 x 1 3/4
PT621	.001	600	3/16 x 1
PT622	.002	600	3/16 x 1
PT623	.003	600	3/16 x 1
PT624	.004	600	3/8 x 1
PT625	.005	600	3/8 x 1
PT626	.006	600	3/8 x 1
PT611	.01	600	3/8 x 1 1/4
PT612	.02	600	7/16 x 1 1/4
PT613	.03	600	1/2 x 1 1/4
PT614	.04	600	1/2 x 1 1/2
PT615	.05	600	1/2 x 1 1/2
PT616	.06	800	1/2 x 1 1/2
PT601	.1	600	3/4 x 1 3/4
PT1621	.001	1600	3/8 x 1
PT1622	.002	1600	3/8 x 1
PT1623	.003	1600	3/8 x 1 1/4
PT1624	.004	1600	3/8 x 1 1/4
PT1625	.005	1600	3/8 x 1 1/4
PT1626	.006	1600	7/16 x 1 1/4
PT1627	.007	1600	7/16 x 1 1/4
PT16275	.0075	1600	7/16 x 1 1/4
PT1628	.008	1600	7/16 x 1 1/4
PT1611	.01	1600	1/2 x 1 1/4
PT16115	.015	1600	1/2 x 1 1/2
PT1612	.02	1600	1/2 x 1 1/2
PT1615	.05	1600	3/4 x 1 3/4
PT16115	.015-.015	1600	3/4 x 1 3/4

Mallory Page 4 (See Mallory Page 1 for List Price.)

\*TRADE MARK

# MALLORY DRY ELECTROLYTIC CAPACITORS



## Metal Tubular Dry Electrolytic Capacitors Single Section

**APPLICATION**—For under-chassis mounting in filter and audio bypass circuits where long life and small size is desirable.

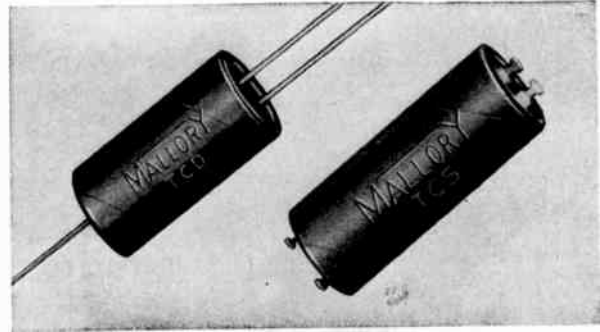
**DESCRIPTION**—Single section dry electrolytic type encased in hermetically sealed aluminum tube with external insulating sleeve. Suitable for operation up to 185°F. (85°C.) at full rated voltage except type designated (\*).

**TERMINALS**—One 3" bare solid tinned copper lead at each end. Positive lead marked (+) on insulating sleeve.

**MOUNTING**—Designed for mounting by its own leads or with applicable hardware listed on page 20.

**PACKAGING**—25, 50, or 100 capacitors per display carton. Furnished in individual display cartons on orders for less than 25 or when specified.

Mallory Cat. No.	Cap. Mfd.	DC Wkg. Volts	Maximum Surge Voltage	Size Dia. Length
TC310	1000	3	4	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>3</sup> / <sub>4</sub>
TC605	500	6	10	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>3</sup> / <sub>4</sub>
TC610	1000	6	10	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC1505	500	15	20	1 <sup>1</sup> / <sub>2</sub> x 2
TC22	10	25	40	5/8 x 1 <sup>1</sup> / <sub>2</sub>
TC26	25	25	40	5/8 x 1 <sup>1</sup> / <sub>2</sub>
TC29	50	25	40	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC2501	100	25	40	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>3</sup> / <sub>4</sub>
TC2505	500	25	40	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC30	5	50	75	5/8 x 1 <sup>1</sup> / <sub>2</sub>
TC32	10	50	75	5/8 x 1 <sup>1</sup> / <sub>2</sub>
TC36	25	50	75	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC39	50	50	75	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC40	5	150	200	5/8 x 1 <sup>1</sup> / <sub>2</sub>
TC41	8	150	200	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC42	10	150	200	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC43	12	150	200	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC44	16	150	200	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC45	20	150	200	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC47	30	150	200	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC48	40	150	200	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC49	50	150	200	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC495	150	150	200	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC50X	5	250	325	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC51	8	250	325	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC52	10	250	325	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC53	12	250	325	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC54	16	250	325	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC55	20	250	325	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC58	40	250	325	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC59	50	250	325	1 <sup>1</sup> / <sub>2</sub> x 2
TC60	5	350	425	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC61	8	350	425	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC62	10	350	425	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC63	12	350	425	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC64	16	350	425	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC65	20	350	425	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC68	60	350	425	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC70	5	450	525	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC71	8	350	525	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC72	10	450	525	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC73	12	450	525	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC74	16	450	525	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC75	20	450	525	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC77	30	450	525	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC78	40	450	525	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
*TC81	10	500	550	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub>
TC82	10	500	650	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub>
*TC83	20	500	550	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub>
*TC84	30	500	550	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub>
TC82	10	600	750	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>2</sub>
TC808	.5Z @ 15750 Cycles 3 V.			1 <sup>1</sup> / <sub>2</sub> x 2
TC420	1.5Z @ 60 Cycles 4 V.			1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TC421	1.5Z @ 120 Cycles 6 V.			1 <sup>1</sup> / <sub>2</sub> x 2



## Metal Tubular Dry Electrolytic Capacitors Dual Section

**APPLICATION**—For under-chassis mounting in filter and audio bypass circuits where long life and small size is desirable.

**DESCRIPTION**—Dual section dry electrolytic type encased in hermetically sealed aluminum tube with external insulating sleeve. Suitable for operation up to 185°F. (85°C.) at full rated voltage. Type TCD is dual common negative, TCS dual separate section.

**TERMINALS**—Type TCD is supplied with 3" bare solid tinned copper leads, both positive leads at one end and common negative lead at opposite end. Type TCS is supplied with soldering lugs, positive and negative of one section at one end and the other section at the opposite end.

**MOUNTING**—Type TCD is designed for mounting by its own leads or with applicable hardware shown on page 20. Type TCS is supplied with the Mallory TH clips for mounting, further described on page 17.

**PACKAGING**—Individual display carton.

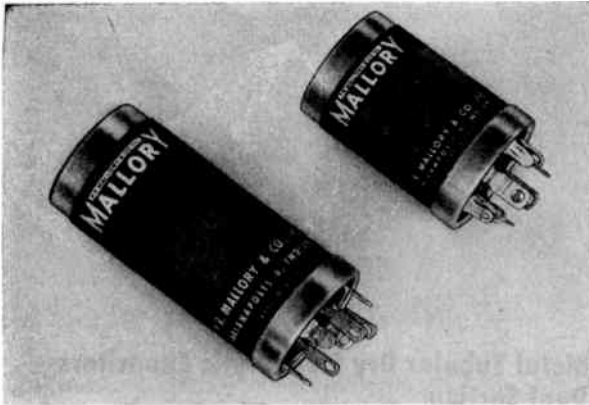
### Dual Common Negative

Mallory Cat. No.	Cap. Mfd.	DC Wkg. Volts	Maximum Surge Voltage	Size Dia. Length
TCD26	25-25	25	40	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>4</sub>
TCD45	20-20	150	200	1 <sup>3</sup> / <sub>16</sub> x 2
TCD47	30-30	150	200	1 <sup>3</sup> / <sub>16</sub> x 2
TCD48	40-40	150	200	1 <sup>1</sup> / <sub>2</sub> x 2
TCD485	40-20	150	200	1 <sup>1</sup> / <sub>2</sub> x 2
TCD49	50-50	150	200	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>1</sup> / <sub>8</sub>
TCD497	50-30	150	200	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>1</sup> / <sub>4</sub>
TCD52	10-10	250	325	1 <sup>3</sup> / <sub>16</sub> x 2
TCD55	20-20	250	325	1 <sup>1</sup> / <sub>2</sub> x 2
TCD62	10-10	350	425	1 <sup>3</sup> / <sub>16</sub> x 2
TCD65	20-20	350	425	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>1</sup> / <sub>8</sub>
TCD71	8-8	450	525	1 <sup>3</sup> / <sub>16</sub> x 2
TCD72	10-10	450	525	1 <sup>1</sup> / <sub>2</sub> x 2
TCD74	15-15	450	525	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>1</sup> / <sub>8</sub>
TCD75	20-20	450	525	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>1</sup> / <sub>8</sub>

### Dual Separate-Section

Mallory Cat. No.	Cap. Mfd.	DC Wkg. Volts	Maximum Surge Voltage	Size Dia. Length
TCS44	15-15	150	200	1 <sup>3</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS46	20-20	150	200	1 <sup>3</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS47	30-30	150	200	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS48	40-40	150	200	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS505	70-70	175	225	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>8</sub>
TCS52	10-10	250	325	1 <sup>3</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS55	20-20	250	325	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS61	8-8	350	425	1 <sup>3</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS64	15-15	350	425	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS71	8-8	450	525	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS74	15-15	450	525	1 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>8</sub>
TCS75	20-20	450	525	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>1</sup> / <sub>8</sub>

# MALLORY DRY ELECTROLYTIC CAPACITORS



## FP† Dry Electrolytic Capacitors

**APPLICATION**—For top chassis mounting in filter and audio bypass circuits and TV applications. Extremely dependable under heavy ripple current, and high surge voltage.

**DESCRIPTION**—All WP and FP capacitors are designed for high temperature (85°C.) operation at full rated voltage. Single, dual, triple and quad section units encased in compact hermetically sealed aluminum cases with self-contained mounting feature. Type FP is supplied with famous Mallory Fabricated Plate (metalized cotton gauze) anodes, type WP with etched plate anodes. Special internal design provides low RF impedance and minimum coupling between sections. Case at negative potential.

**TERMINALS**—Solder lug type all at one end. Positive terminals identified by symbols in terminal board corresponding to case marking. Mounting ring provides negative terminal connection.

**MOUNTING**—Primarily designed for twist prong mounting through suitable chassis slots and may also be mounted as follows:

1. Type MP metal wafer providing the necessary slots without actually punching the chassis for grounded negative circuits.
2. Type BP bakelite wafer for insulated mounting, otherwise similar to Paragraph No. 1. One furnished with each capacitor.
3. TH clip for horizontal mounting.
4. Type PS socket for plug-in mounting. (Remove blank ear with diagonal pliers to polarize unit in relation to socket.)  
See page 20 for applicable hardware, and insulating sleeves.

**PACKAGING**—Individual display carton, with mounting wafer.

†Only Mallory can supply genuine Fabricated Plate (metalized cotton gauze) capacitors.

### Surge Voltage Data

● Due to the many multiple section listings on FP capacitors, it is not practical to show surge voltage ratings without consuming considerable space in the chart. The surge voltage ratings are, therefore, given separately in the small chart.

Wkg. VDC.	Surge Volts
6	10
10	15
15	20
25	40
150	200
200	275
250	325
300	375
350	425
400-450	525

Mallory Cat. No.	Capacity Mfd.	Wkg. Volts DC	Size Dia. Length
WP510	.52Z@15750 cycles	3 V.	1 x 2
WP540	1.0Z@60 cycles	3 V.	1½ x 3
WP505	10Z@30 cycles	3 V.	¾ x 2
WP032	3000	10	1¾ x 2½
WP039	1000	15	1 x 2½
WP041	2000	15	1¾ x 2½
WP055	100	25	1 x 2
WP057	500	25	1 x 2½
WP059	1000	25	1¾ x 2
WP063	4	50	¾ x 2
WP065	500	50	1¾ x 2
FP113	30	150	¾ x 2
FP115	50	150	1 x 2
FP116	100	150	1 x 2½
FP117	150	150	1 x 3
FP119	300	150	1¾ x 3
FP125	15	250	¾ x 2
FP135	30	350	1 x 2
FP137	50	350	1 x 2½
FP138	80	350	1¾ x 2½
FP140	125	350	1¾ x 3
FP142	10	450	¾ x 2
FP143	15	450	1 x 2
FP144	20	450	1 x 2
FP145	30	450	1 x 2½
FP146	40	450	1 x 2½
FP149	80	450	1¾ x 2½
WP204	250-1000	10-6	1¾ x 2
WP200	1000-1000	15-15	1¾ x 2½
FP208	20-20	150-150	1 x 2
FP211	30-30	150-150	1 x 2
FP210	40-20	150-150	1 x 2
FP212	40-40	150-150	1 x 2½
FP213	50-30	150-150	1 x 2½
FP214	50-50	150-150	1 x 2½
FP216	80-40	150-150	1 x 3
FP215	125-100	150-150	1¾ x 2½
FP217	20-20	250-250	1 x 2
FP221	40-40	250-250	1 x 3
FP218	120-20	300-300	1¾ x 3
FP228	30-30	350-300	1 x 3
FP225	15-15	350-350	1 x 2
FP227	20-20	350-350	1 x 2½
FP244	80-50	450-50	1¾ x 3
FP230	20-50	450-250	1 x 3
FP235	20-80	450-350	1¾ x 2½
FP550	10-80	450-400	1¾ x 3
FP231	10-10	450-450	1 x 2
FP234	20-20	450-450	1 x 3
FP237	30-30	450-450	1¾ x 2½
FP236	40-10	450-450	1¾ x 2
FP238	40-40	450-450	1¾ x 3
FP239	50-40	450-450	1¾ x 3
FP240	50-50	450-450	1¾ x 3
FP245	80-10	450-450	1¾ x 3
FP246	80-50	450-450	1¾ x 4
FP250	40-80	475-200	1¾ x 2½
FP255	20-100	475-300	1¾ x 3
FP258	15-15	475-475	1 x 2½
FP262	40-40	475-475	1¾ x 3
WP520	40-40-40	25-25-25	1 x 2
FP303	20-250-100	150-15-15	1¾ x 3
FP312	100-25-50	150-25-50	1 x 3
WP302	15-15-1000	150-150-2	1 x 2
FP306	40-20-20	150-150-25	1 x 2
FP307	40-20-100	150-150-25	1 x 2½
FP304	40-20-200	150-150-25	1 x 2½
FP310	40-40-20	150-150-25	1 x 2½
FP314	40-40-200	150-150-25	1 x 2½
FP309	50-30-100	150-150-15	1 x 2½
FP311	50-50-20	150-150-25	1 x 3
FP354	20-20-20	150-150-150	1 x 2
FP355	40-20-20	150-150-150	1 x 2½
FP357	40-40-40	150-150-150	1 x 3
FP313	30-20-20	200-200-25	1 x 2

Mallory Page 6 (See Mallory Page 1 for List Prices)

# MALLORY DRY ELECTROLYTIC CAPACITORS

Mallory Cat. No.	Capacity Mfd.	Wkg. Volts DC	Size Dia. Length
FP318	90-90-20	200-200-50	1 1/2 x 3
FP360	15-20-20	250-150-150	1 x 2
FP316	20-15-20	250-250-25	1 x 2
FP363	40-20-20	250-250-250	1 1/2 x 2
FP326	100-60-20	300-150-25	1 1/2 x 3
FP334	20-80-10	300-250-200	1 1/2 x 2 1/2
FP335	100-60-20	300-250-250	1 1/2 x 3
FP336	200-60-20	300-250-250	1 1/2 x 4
FP331	30-30-20	350-300-25	1 x 3
FP328	15-10-20	350-350-25	1 x 2
FP330	30-20-20	350-350-25	1 x 3
FP369	20-10-5	350-350-250	1 x 2
FP371	30-10-20	350-350-250	1 x 3
FP367	10-10-10	350-350-350	1 x 2
FP342	40-40-130	450-150-50	1 1/2 x 2 1/2
FP343	40-100-50	450-150-50	1 1/2 x 3
FP341	40-90-50	450-150-150	1 1/2 x 3
FP352	20-60-100	450-250-25	1 1/2 x 2 1/2
FP353	20-40-10	450-250-250	1 1/2 x 2
FP380	20-15-15	450-350-300	1 x 3
FP344	10-30-30	450-400-300	1 1/2 x 2 1/2
FP332	10-10-20	450-450-25	1 x 2
FP339	20-20-20	450-450-25	1 x 3
FP346	40-40-20	450-450-25	1 1/2 x 3
FP364	80-40-100	450-450-25	1 1/2 x 4
FP366	20-10-50	450-450-50	1 x 3
FP395	40-40-40	450-450-150	1 1/2 x 3
FP345	40-10-80	450-450-200	1 1/2 x 3
FP373	40-10-100	450-450-200	1 1/2 x 3
FP375	40-40-100	450-450-200	1 1/2 x 4
FP376	10-10-40	450-450-250	1 1/2 x 3
FP389	10-10-10	450-450-450	1 x 2 1/2
FP390	15-15-10	450-450-450	1 x 3
FP393	40-40-10	450-450-450	1 1/2 x 3
FP377	40-40-40	450-450-450	1 1/2 x 4
FP378	80-40-20	450-450-450	1 1/2 x 4
FP379	10-100-40	475-200-50	1 1/2 x 2 1/2
FP384	20-20-40	475-300-25	1 1/2 x 2
FP385	40-40-500	475-475-8	1 1/2 x 3
FP386	10-10-5	475-475-25	1 x 2 1/2
FP387	10-10-100	475-475-25	1 x 3
FP391	20-20-60	475-475-400	1 1/2 x 3
FP394	10-10-10	475-475-475	1 x 3
FP396	30-30-20	475-475-475	1 1/2 x 3
FP407	30-20-20-200	150-150-150-10	1 1/2 x 2
FP409	40-40-30-20	150-150-150-25	1 1/2 x 2
FP410	50-50-50-20	150-150-150-25	1 1/2 x 2 1/2
FP417	100-40-80-20	300-50-25-25	1 1/2 x 2 1/2
FP418	120-20-100-20	300-250-30-25	1 1/2 x 3
FP419	200-20-100-20	300-250-50-25	1 1/2 x 4
FP413	40-40-40-20	300-300-300-150	1 1/2 x 3
FP420	40-40-20-10	300-300-300-300	1 1/2 x 2 1/2
FP414	15-80-40-200	350-200-200-25	1 1/2 x 3
FP416	40-40-20-20	350-300-300-25	1 1/2 x 3
FP421	5-5-50-80	400-400-300-250	1 1/2 x 3
FP422	10-40-80-100	450-350-200-50	1 1/2 x 3
FP425	30-40-40-10	450-350-350-200	1 1/2 x 3
FP426	20-15-20-20	450-450-25-25	1 1/2 x 2
FP428	40-10-25-10	450-450-350-350	1 1/2 x 3
FP424	15-15-10-20	450-450-450-25	1 1/2 x 2
FP432	40-10-10-250	450-450-450-25	1 1/2 x 3
FP431	40-15-10-25	450-450-450-25	1 1/2 x 2 1/2
FP429	40-30-10-20	450-450-450-25	1 1/2 x 3
FP436	40-20-20-40	450-450-450-25	1 1/2 x 3
FP437	20-20-20-100	450-450-450-50	1 1/2 x 2 1/2
FP433	60-10-10-20	450-450-450-150	1 1/2 x 3
FP434	10-10-10-10	450-450-450-450	1 1/2 x 2
FP444	20-20-20-20	450-450-450-450	1 1/2 x 3
FP456	25-20-40-100	475-450-300-50	1 1/2 x 3
FP457	10-40-10-20	475-450-450-50	1 1/2 x 2 1/2
FP461	15-15-80-40	475-475-300-50	1 1/2 x 3
FP465	10-10-20-100	475-475-400-25	1 1/2 x 2
FP471	40-20-10-10	475-475-475-250	1 1/2 x 3
FP473	20-20-10-10	475-475-475-300	1 1/2 x 2 1/2
FP474	10-10-10-10	475-475-475-475	1 1/2 x 2

## Why the MALLORY FP CAPACITOR is Tops

### IN DEPENDABLE PERFORMANCE!

● Only Mallory supplies genuine Fabricated Plate (metalized cotton gauze) capacitors for replacement.

It takes a superior capacitor to operate at 185°F. and Mallory FP capacitors do it. Tests prove they perform consistently during 2000 hours of operation at a temperature of 185°F. At lower temperatures, even longer!

Proof of this performance is found in the experience of one television manufacturer, who kept records of field failures for six months. Of 385,000 Mallory FP capacitors in service only six failed. Special design and meticulous production care make such records possible . . . by eliminating the major source of internal corrosion.

You can count on Mallory FP capacitors for longer shelf life—longer life in an inactive set—lower RF impedance—and ability to withstand higher ripple current.

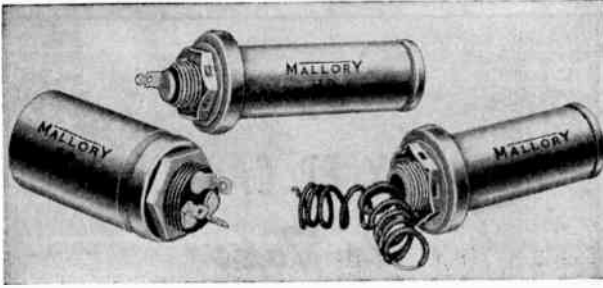
Check these new improvements in Mallory FP capacitors . . . stronger anode tabs—withstand higher discharge currents—improved high surge separators—still greater heat resistance—extra heavy rubber seal—heavier cathode tab—special etched cathode.

And Mallory capacitors cost no more than ordinary capacitors . . . they're easy to install, and when they are installed they're dependable.

Mallory FP capacitors are manufactured under the following patents:

2144959      2202166  
2020408      Des. 122825

# MALLORY DRY ELECTROLYTIC CAPACITORS



## Threaded Neck Dry Electrolytic Capacitors

**APPLICATION**—Designed for replacement of wet or dry electrolytic threaded neck type filter capacitors originally employed in any type of electronic filter or bypass circuit.

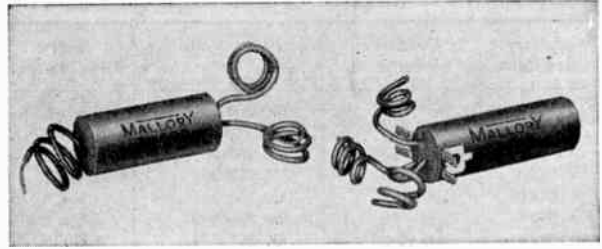
**DESCRIPTION**—Type RS are single section, RM multiple separate section capacitors encased in aluminum cans equipped with threaded necks for mounting. Both types are internally insulated from their aluminum can. Type HD is for heavy duty, type HS for high surge voltage conditions. Type SR638 is lug type dual. Type SR645 has special internal connections, one terminal common anode, one terminal negative to one section and case negative to the other section.

**TERMINALS**—RS, RM and HS have 8" flexible insulated stranded copper leads all out through the threaded neck part of the case. Type HD has one solder lug terminal for positive and case is negative. Type SR has two positive lug terminals with case common negative.

**MOUNTING**—Types RS, RM, HD and HS have threaded necks ( $\frac{1}{2}$  x 16 for 1" dia.— $\frac{3}{4}$  x 16 for 1 $\frac{1}{2}$ " dia.) supplied with palnut and special washer providing installation in various chassis hole sizes. All 1" diameter units in these types are also supplied with a special turned-over washer for 1 $\frac{1}{2}$ " clamp mounting. Type SR has  $\frac{1}{8}$ -16 thread molded necks with solid nut. See page 20 for other hardware.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Capacity Mfd.	Volts DC	Size	
			Dia.	Length
RS207	30	250	1 x 3 $\frac{1}{2}$	
RS212	8	450	1 $\frac{1}{2}$ x 3	
RS213	8	450	1 x 2 $\frac{1}{2}$	
RS214	12	450	1 $\frac{1}{2}$ x 3	
RS215	12	450	1 x 2 $\frac{1}{2}$	
RS216	16	450	1 x 3 $\frac{1}{2}$	
RS217	16	450	1 $\frac{1}{2}$ x 3	
RS219	20	450	1 $\frac{1}{2}$ x 3	
RS223	30	450	1 $\frac{1}{2}$ x 3	
RS224	40	450	1 $\frac{1}{2}$ x 3	
HD684	10	450	1 x 3	
HS693	8	600	1 $\frac{1}{2}$ x 4	
RM262	8-8	450	1 $\frac{1}{2}$ x 3	
RM265	8-8-8	450	1 $\frac{1}{2}$ x 4 $\frac{1}{2}$	
SR638	8-8	450	1 $\frac{1}{2}$ x 2 $\frac{1}{2}$	
SR645	8-8	450	1 $\frac{1}{2}$ x 2 $\frac{1}{2}$	



## Cardboard Tubular Dry Electrolytic Capacitors

**APPLICATION**—Low cost filter and bypass units for above or below-chassis mounting where humidity conditions are not extreme.

**DESCRIPTION**—Single, dual, triple and quad section units in cardboard tubes with extra inner seal and ample wax seal at ends. Dual, triple and quad section units are common negative or separate section type, as indicated in chart.

**TERMINALS**—All types are supplied with flexible covered leads out one end except those marked (\*) which have negative lead out opposite end.

**MOUNTING**—All units (except TN111) are supplied with an adjustable horizontal mounting strap (MS-1). Units marked (†) have special feet for vertical mounting in addition to the strap. For other hardware, see page 20.

**PACKAGING**—Individual display carton.

Single Section			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
ST595†	8	450	$\frac{3}{4}$ x 2 $\frac{1}{2}$
ST597†	16	450	$\frac{3}{4}$ x 2 $\frac{1}{2}$
ST598†	20	450	1 x 2 $\frac{1}{2}$
ST599†	30	450	1 x 3 $\frac{1}{2}$
ST645	60	450	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
ST845	80	450	1 $\frac{1}{4}$ x 4 $\frac{1}{2}$

Dual Common Negative			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
TN111	10-10	25-25	$\frac{3}{4}$ x 1 $\frac{1}{2}$
2N501	250-1000	10-6	1 $\frac{1}{4}$ x 2 $\frac{1}{2}$
2N509*	20-20	150-150	$\frac{3}{4}$ x 2 $\frac{1}{2}$
2N513*	30-30	150-150	$\frac{3}{4}$ x 2 $\frac{1}{2}$
2N514*	40-20	150-150	$\frac{3}{4}$ x 2 $\frac{1}{2}$
2N511*	40-40	150-150	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
2N520*	50-30	150-150	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
2N521†	50-50	150-150	1 x 2 $\frac{1}{2}$
2N523	100-100	150-150	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
2N525	30-30	200-200	1 $\frac{1}{4}$ x 3
2N527	50-75	250-50	1 $\frac{1}{4}$ x 2 $\frac{1}{2}$
2N529	100-150	250-50	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
2N516*	8-8	250-250	$\frac{3}{4}$ x 2 $\frac{1}{2}$
2N531	40-40	300-300	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
2N533	40-50	450-50	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
2N535	30-60	450-300	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
2N518†	8-8	450-450	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
2N537	40-40	450-450	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$

Dual Separate Section			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
2S556†	30-30	150-150	1 x 2 $\frac{1}{2}$
2S587†	8-8	450-450	1 $\frac{1}{4}$ x 2 $\frac{1}{2}$
2S589†	16-16	450-450	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$

Triple Common Negative			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
3N527*	20-20-20	150-150-25	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
3N533*	30-30-20	150-150-25	1 x 2 $\frac{1}{2}$
TN125*	20-10-10	150-150-150	$\frac{3}{4}$ x 2 $\frac{1}{2}$
TN129†	40-20-20	150-150-150	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
3N535	40-30-40	350-250-150	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
3N537	30-50-100	450-150-25	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
3N539	30-30-30	450-350-250	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
3N541	40-20-10	450-450-450	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$

Triple Separate Section			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
3S579†	8-8-20	450-450-25	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$
3S584†	8-8-8	450-450-450	1 $\frac{1}{8}$ x 2 $\frac{1}{2}$

Quad Common Negative			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
4N723	10-10-10-150	450-450-450-50	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$
4N727	10-10-10-10	450-450-450-450	1 $\frac{1}{4}$ x 3 $\frac{1}{2}$

Quad Separate Section			
Mallory Cat. No.	Capacity Mfd.	Volts DC	Size Dia. Length
4S715†	16-16-10-10	150-150-25-25	1 $\frac{1}{4}$ x 2 $\frac{1}{2}$

# MALLORY DRY ELECTROLYTIC CAPACITORS



## High Capacity Dry Electrolytic Capacitors and Non-Polarized Dry Electrolytic Capacitors

**APPLICATION**—Type HC are for filtering dry disc rectifiers and for electric fence controls, talking picture equipment, and other high-capacity low-voltage applications. Type HC1060A is especially designed for replacement in fence control equipment.

Type NP are non-polarized units for use where polarity may be applied in either direction, but are not suitable for continuous AC applications. Useful in welding and control equipment as a stored energy device.

**DESCRIPTION**—High quality etched plate electrolytic capacitors supplied in moisture-proof plastic cases requiring no external insulation. Type HC are polarized, and NP are non-polarized type.

**TERMINALS**—Two solder lug terminals at one end.

**MOUNTING**—Supplied with type VR bracket for vertical mounting, and design permits horizontal mounting with protector end cap (sold separately). See page 20 for hardware details.

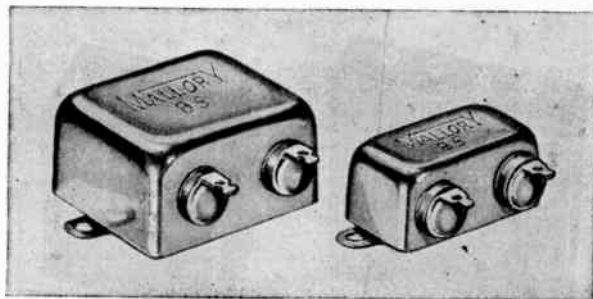
**PACKAGING**—Individual display carton.

Mallory Cat. No.	Capacity Mfd.	DC Wkg. Volts	Maximum Surge Voltage	Size			
				Dia.	Length		
HC1020	2000	10	15	1 7/16	x 3 3/8		
HC1040	4000	10	15	1 13/16	x 3 3/8		
HC1060	6000	10	15	1 3/8	x 3 3/8		
HC1060A*	6000	10	15	1 1/2	x 4 1/8		
HC1520	2000	15	20	1 7/8	x 3 3/8		
HC1540	4000	15	20	1 3/8	x 3 3/8		
HC1560	6000	15	20	1 3/8	x 4 1/8		
HC2510	1000	25	40	1 7/8	x 3 3/8		
HC2520	2000	25	40	1 3/8	x 3 3/8		
HC2540	4000	25	40	1 3/8	x 4 1/8		
HC5005	500	50	75	1 7/8	x 3 3/8		
HC5010	1000	50	75	1 3/8	x 3 3/8		
HC5020	2000	50	75	1 3/8	x 4 1/8		
HC15010	1000	150	200	2 1/8	x 4 3/8		
HC20005	500	200	275	2 1/8	x 4 3/8		
HC45003	300	450	525	2 1/8	x 4 3/8		

NP0340	2000	25	40	2 1/8	x 4 3/8
NP1225	200	125	200	1 13/16	x 4 3/8
NP1235	300	125	200	2 1/8	x 4 3/8
NP1255	500	125	200	2 1/8	x 4 3/8
NP2525	200	250	325	2 1/8	x 4 3/8
NP3003	15	300	375	1 7/8	x 3 3/8
NP3006	30	300	375	1 7/8	x 3 3/8
NP3008	50	300	375	1 7/8	x 3 3/8
NP3014	100	300	375	1 3/8	x 4 3/8
NP3020	150	300	375	2 1/8	x 4 3/8
NP3025	200	300	375	2 1/8	x 4 3/8
NP4503	30	450	525	1 7/8	x 3 3/8
NP4505	50	450	525	1 3/8	x 3 3/8
NP4510	100	450	525	2 1/8	x 4 3/8

\*This unit in Aluminum Case

†Designed for Photoflash Application.



## Bathtub Dry Electrolytic Capacitors

**APPLICATION**—For filter and bypass circuits in marine, aircraft, geophysical and other applications where extreme operating conditions are encountered. BS81 and BS91 are ideal for power amplifier and other high voltage applications.

**DESCRIPTION**—Dry electrolytic capacitors where cartridges are first sealed in aluminum tubes and then encased in sturdy corrosion-resistant, hot-tinned steel cases providing complete hermetical seal under all weather conditions. All units internally insulated from outer case. BS81 and BS91 employ the special Mally balanced series unit construction for extreme dependability at high voltage. Temperature range, -40°F. to +185° F.

**TERMINALS**—Two solder lug terminals on one side.

**MOUNTING**—Provided with mounting flanges at each end having 3/16" holes.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	DC Wkg. Volts	Max. Surge Voltage	Size*			
				H	W	L	Y
BS26	25	25	40	3/8	x 1	x 1 1/4	x 2 1/2
BS29	50	25	40	3/8	x 1	x 1 1/4	x 2 1/2
BS36	25	50	75	3/8	x 1	x 1 1/4	x 2 1/2
BS39	50	50	75	7/8	x 1	x 1 1/4	x 2 1/2
BS45	20	150	200	7/8	x 1	x 1 1/4	x 2 1/2
BS48	40	150	200	1	x 1 1/4	x 1 1/4	x 2 1/2
BS62	10	300	375	7/8	x 1	x 1 1/4	x 2 1/2
BS65	20	300	375	1 1/8	x 1 1/4	x 1 1/4	x 2 1/2
BS81	8	500	650	1	x 1 1/4	x 2	x 2 1/2
BS91	8	600	750	1	x 1 1/4	x 2	x 2 1/2

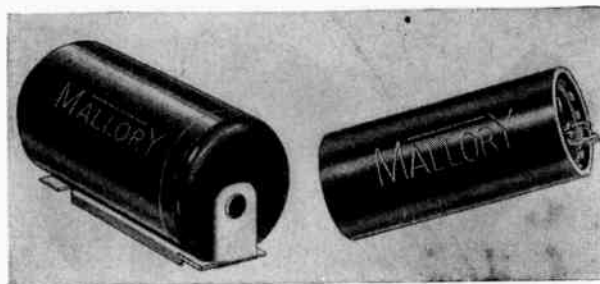
\*H—Height; W—Width; L—Length; Y—Mounting Centers.

## 1949 MALLORY VIBRATOR GUIDE

Long recognized as one of the most useful publications in the radio service field. Up-to-date, completely organized for quick, accurate reference. Contains all available information through early 1949 models of automobile and battery-operated home radio receivers as well as vibrator power supplies. See your Mally Distributor.



# MALLORY DRY ELECTROLYTIC CAPACITORS



## AC Motor Starting Capacitors Dry Electrolytic

**APPLICATION**—For replacement of rectangular case type motor starting capacitors.

**DESCRIPTION**—Dry electrolytic intermittent duty AC capacitors housed in rectangular cases and provided with terminal arrangement similar to the design of the original capacitors they replace.

**TERMINALS**—Equipped with two capacitor terminals and two dummy terminals. The L and unmarked terminal are the capacitors, while T and TL are dummies for convenience in wiring.

**MOUNTING**—Designed to mount in the original clamps or boxes used for the original capacitors.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Mfd. New	Rating Old	Volts AC	Size*		
				W	L	H
MSG220	32	32-36	110	2	x 3½	x 3½
MSG221	53	53-60	110	2	x 3½	x 3½
MSG222	64	64-72	110	2	x 3½	x 3½
MSG223	78	78-85	110	2	x 3½	x 3½
MSF224	86	86-96	110	1½	x 4½	x 4½
MSG225	97	97-107	110	2	x 3½	x 3½
MSG226	108	108-120	110	2	x 3½	x 3½
MSF227	108	108-120	110	1½	x 4½	x 4½
MSG228	124	124-138	110	2	x 3½	x 3½
MSF229	124	124-138	110	1½	x 4½	x 4½
MSG230	145	145-162	110	2	x 3½	x 3½
MSG231	161	161-180	110	2	x 3½	x 3½
MSF232	161	161-180	110	1½	x 4½	x 4½
MSF233	189	189-210	110	1½	x 4½	x 4½
MSG234	270	270-300	110	2	x 3½	x 3½
MSG250	26	26-30	220	2	x 3½	x 3½
MSG251	32	32-36	220	2	x 3½	x 3½
MSF252	32	32-36	220	1½	x 4½	x 4½
MSG253	43	43-48	220	2	x 3½	x 3½

\*W—Width; L—Length; H—Height.

## AC Motor Starting Capacitors Dry Electrolytic

**APPLICATION**—For intermittent duty in starting AC capacitor motors in any application where round type cases are required.

**DESCRIPTION**—Dry electrolytic non-polarized type capacitors housed in round cases. Rated at the minimum capacity value with a plus tolerance of 20% unless otherwise indicated by reference to old minimum-maximum capacity rating. Type P furnished in moisture-proof plastic containers, and type MSU in aluminum cases with external insulating sleeve.

**TERMINALS**—Two solder lug terminals at one end.

**MOUNTING**—Both type P and MSU may be mounted interchangeably in any original mounting for units of equivalent size. Type P may also be mounted by means of a plastic end cap (type PL) and sturdy metal snap-in type bracket (type HB) furnished separately when desired. See page 20 for these and other mounting hardware.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Mfd. New	Rating Old	Volts AC	Size	
				Dia.	Length
MSU120	20	20-24	110	1⅞	x 3
MSU121	26	26-30	110	1⅞	x 3
MSU122	32	32-36	110	1⅞	x 3
MSU123	38	38-42	110	1⅞	x 3
MSU124	43	43-48	110	1⅞	x 3
P5310	53	53-60	110	1⅞	x 3½
P6410	64	64-72	110	1⅞	x 3½
P7010	70	70-78	110	1⅞	x 3½
P7510	75	75-84	110	1⅞	x 3½
P8610	86	86-96	110	1⅞	x 3½
P9710	97	97-107	110	1⅞	x 3½
P10810	108	108-120	110	1⅞	x 3½
P12410	124	124-138	110	1⅞	x 3½
P13010	130	130-157	110	1⅞	x 3½
P14510	145	145-162	110	1⅞	x 3½
P16110	161	161-180	110	1⅞	x 3½
MSU136	194	194-216	110	1⅞	x 4½
P19410	194	194-216	110	1⅞	x 3½
MSU138	200	200-220	110	1⅞	x 4½
P21610	216	216-240	110	1⅞	x 3½
P24310	243	243-270	110	1⅞	x 3½
P27010	270	270-300	110	1⅞	x 4½
P32410	324	324-360	110	1⅞	x 4½
P34010	340	340-412	110	1⅞	x 4½
P37810	378	378-420	110	2⅞	x 4½
P40010	400	400-450	110	2⅞	x 4½
P43010	430	430-485	110	2⅞	x 4½
P2520	25	25-30	220	1⅞	x 3½
P3220	32	32-36	220	1⅞	x 3½
P3820	38	38-42	220	1⅞	x 3½
P4320	43	43-48	220	1⅞	x 3½
P5320	53	53-60	220	1⅞	x 3½
P6420	64	64-72	220	1⅞	x 4½
P7020	70	70-78	220	2⅞	x 4½
P7520	75	75-84	220	2⅞	x 4½
P8620	86	86-96	220	2⅞	x 4½



## Capacitor Selector

For determining correct capacity to use in making replacements of defective motor starting capacitors which have lost their identity.

For checking capacity ranges from 26 to 161 mfd. 110-125 VAC  
Catalog No. MSS-100.

For checking capacity ranges from 25 to 645 mfd. 110-125 VAC  
Catalog No. MSS-101.

Mallory Page 10 (See Mallory Page 2 for List Prices)

# MALLORY PAPER CAPACITORS



## Continuous Duty—Oil Impregnated—AC Capacitors

**APPLICATION**—Designed primarily for heavy duty AC applications. May be used as motor running capacitors, fluorescent light ballast, etc. where continuous duty and dependability are required.

**DESCRIPTION**—Supplied in metal cases, these units may be safely operated at voltages up to 10% above the rated values and at temperatures as high as 75°C. The impregnating oil is non-inflammable and non-oxidizable, which accounts for the high safety factor and long life of these capacitors.

**TERMINALS**—Two solder lug terminals at one end. Terminals feature a new all welded construction.

**MOUNTING**—Mounting may be accomplished by using the original housing or by means of type VR brackets. Complete description of available hardware is on page 20. Order separately as required.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	Volts AC	Size Dia. Length
RP-3301	1	330	1 1/2 x 1 1/2
RP-3302	2	330	1 1/2 x 3/4
RP-3303	3	330	2 x 2 1/2
RP-3304	4	330	2 x 2 1/4
RP-3305	5	330	2 x 3/4
RP-3306	6	330	2 x 3/4
RP-3307	7	330	2 x 4/8
RP-3308	8	330	2 1/8 x 5/8
RP-3310	10	330	2 1/2 x 4/8
RP-3312	12	330	2 1/2 x 5/8
RP-3315	15	330	2 1/2 x 6/8

## Tubular Paper Capacitors

**APPLICATION**—For use in radio and electronic circuits, especially RF bypassing, where low cost and small size are paramount. Well protected from moisture but not hermetically sealed.

**DESCRIPTION**—Both TP and OW are compact paper tubular construction. Type TP is wax impregnated and filled. Type OW is oil impregnated and wax filled.

**TERMINALS**—Two bare tinned copper leads, one at each end.

**MOUNTING**—By means of their lead wires or TH clips of applicable size. See page 20 for mounting hardware.

**PACKAGING**—25, 50 or 100 capacitors per display carton.

### Wax impregnated tubular paper capacitors

Cap. Mfd.	400 Volts DC		600 Volts DC		1000 Volts DC	
	Mallory Cat. No.	S	Mallory Cat. No.	S	Mallory Cat. No.	S
.0001			TP401	1		
.00025			TP402	1		
.0005			TP403	1		
.001			TP404	19	TP455	19
.002			TP405	19	TP456	19
.003			TP406	19	TP457	20
.004			TP407	19	TP458	20
.005			TP408	19	TP459	3
.006			TP409	19	TP460	3
.007			TP445	2	TP461	5
.008			TP450	2	TP462	5
.01	TP421	19	TP410	2	TP434	3
.015	TP400	2	TP411	3	TP463	7
.02	TP423	3	TP412	5	TP435	8
.025			TP451	5		
.03	TP424	5	TP413	6	TP464	9
.04	TP425	5	TP414	8	TP465	9
.05	TP426	7	TP415	8	TP437	10
.06	TP427	7	TP416	8	TP466	10
.075			TP452	9	TP467	11
.1	TP428	8	TP418	9	TP439	12
.15			TP417	11		
.2	TP429	10	TP419	12		
.25	TP430	11	TP420	13		
.3	TP444	11	TP453	14		
.4	TP442	12	TP454	15		
.5	TP431	14	TP432	16		
1.0	TP422	17	TP433	18		

### Type TP Size Chart

To save space in the main chart, the various sizes have been listed below. Column "S" refers to these sizes.

S	Size		S	Size	
	Dia.	Length		Dia.	Length
1	1/32	x 1	11	1/16	x 1 1/2
2	1/16	x 1	12	3/16	x 1 1/2
3	7/32	x 1 1/4	13	1/8	x 1 1/2
4	1/2	x 1 1/8	14	3/8	x 1 1/2
5	1/2	x 1 1/4	15	3/4	x 2
6	9/16	x 1 1/4	16	1	x 2 1/2
7	1/2	x 1 1/2	17	1	x 2 1/2
8	17/32	x 1 1/2	18	1 1/4	x 2 1/2
9	3/4	x 1 3/8	19	.390	x 1
10	3/4	x 1 1/2	20	.390	x 1 1/4

## MALLORY TELEVISION ENCYCLOPEDIA

Here's another Mallory "first"—the only complete television replacement service manual available to radio servicemen. Here's what it gives you:

- Complete tube complements
- IF Alignment data
- Circuit references
- Original part numbers
- Replacement part numbers
- Rider's references

A companion book to your Mallory Radio Service Encyclopedia.

# MALLORY OIL IMPREGNATED CAPACITORS

## Oil Impregnated Tubular Paper Capacitors

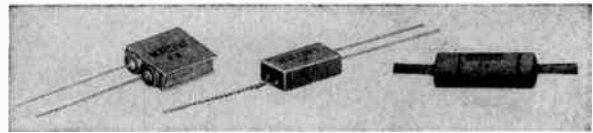


Fig. 1

Fig. 2

Fig. 3

## Special Vibrator Buffer Capacitors

**APPLICATION**—Intended for replacement of original vibrator buffer and hash suppressor capacitors of similar design.

**DESCRIPTION**—Type VB is oil impregnated and housed in small rectangular metal case. Section is insulated from case. Type VD is dual wax impregnated unit in small rectangular waxed cardboard case. Type VO is wax impregnated and filled in oval waxed tube.

**TERMINALS**—VB has two bare tinned copper leads out one end. VD has two bare tinned copper leads out one end and one similar common lead out the other end. VO has heavy copper braid at each end.

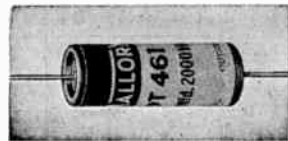
**MOUNTING**—In recess or clamp used in the original equipment.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size Dia. Length
OW340	.0005	1600	1/2 x 1 1/2
OW341	.001	1600	1/2 x 1 1/2
OW331	.002	1600	3/8 x 1 1/2
OW342	.003	1600	3/8 x 1 1/2
OW343	.004	1600	3/8 x 1 1/2
OW332	.005	1600	3/8 x 1 1/2
OW344	.006	1600	3/8 x 1 1/2
OW345	.007	1600	3/8 x 1 1/2
OW346	.0075	1600	3/8 x 1 1/2
OW333	.008	1600	3/8 x 1 1/2
OW334	.01	1600	3/8 x 1 1/2
OW335	.015	1600	11/16 x 1 1/2
OW336	.02	1600	3/4 x 1 1/2
OW337	.03	1600	3/4 x 2
OW338	.04	1600	13/16 x 2
OW339	.05	1600	3/4 x 2
OWD335*	.015 } .015 }	1600	3/4 x 2
OW635*	.0005	6000	3/8 x 1 3/4
OW621*	.001	6000	11/16 x 1 3/4
OW622*	.002	6000	27/32 x 1 3/4
OW623*	.003	6000	1 x 1 3/4
OW625*	.005	6000	27/32 x 2 1/2
OW6275*	.0075	6000	15/16 x 2 1/2
OW611*	.01	6000	1 1/2 x 2 1/2
OW612*	.02	6000	1 7/8 x 3
OW613*	.03	6000	1 1/2 x 3 3/4

\*Packaged in Individual Display Carton with Mounting Strap.

## Metal Cased Oil Impregnated Paper Capacitors



**APPLICATION**—For vibrator buffer, coupling, and other circuits where highest quality tubular type capacitors are required.

**DESCRIPTION**—Mineral oil impregnated hermetically sealed aluminum tubulars with external insulating sleeves.

**TERMINALS**—Two bare tinned copper leads, one at each end.

**MOUNTING**—Designed for mounting by its own leads, may also be mounted by use of the TH clip furnished with each capacitor. See page 20 for description of the TH clip and other hardware.

**PACKAGING**—Individual display carton with TH Clip.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size Dia. Length
OT101	.01	600	3/8 x 1 1/2
OT103	.02	600	3/8 x 1 1/2
OT106	.05	600	11/16 x 1 3/4
OT110	.1	600	11/16 x 1 11/16
OT113	.25	600	13/16 x 2 1/2
OT116	.5	600	1 1/8 x 2 1/2
OT301	.01	1000	3/8 x 1 3/4
OT303	.02	1000	11/16 x 1 3/4
OT306	.05	1000	11/16 x 2 3/4
OT310	.1	1000	13/16 x 2 3/4
OT370	.002	1600	3/8 x 1 3/4
OT377	.003	1600	3/8 x 1 3/4
OT371	.005	1600	3/8 x 1 3/4
OT372	.008	1600	3/8 x 1 3/4
OT373	.01	1600	11/16 x 1 3/4
OT375	.015	1600	11/16 x 1 11/16
OT376	.02	1600	11/16 x 1 11/16
OT378	.03	1600	11/16 x 2 3/4
OT379	.04	1600	11/16 x 2 3/4
OT380	.05	1600	11/16 x 2 7/8
OT458	.0025	2000	11/16 x 1 3/4
OT459	.005	2000	11/16 x 1 11/16
OT460	.0075	2000	11/16 x 1 3/4
OT461	.01	2000	11/16 x 1 3/4
OT462	.0125	2000	11/16 x 1 3/4
OT463	.015	2000	11/16 x 1 3/4
OT464	.02	2000	11/16 x 2
OT465	.03	2000	13/16 x 2
OT466	.04	2000	13/16 x 2 1/4
OT467	.05	2000	13/16 x 2 1/4

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size* W L H	Fig. No.
VB470	.0075	1600	3/8 x 3/8 x 3/8	1
VB471	.01	1600	3/8 x 3/8 x 3/8	1
VD491	.0008 } .0008 }	1600	3/8 x 3/8 x 1 1/8	2
VO480	.5	120	7/16 x 3/8 x 2 1/4	3

\*H—Height; W—Width; L—Length.



## Miniature Metal Tubular Capacitors

**APPLICATION**—For hearing aid, personal radio, and other uses where very small size tubulars are desirable.

**DESCRIPTION**—Oil impregnated tubular capacitor in minute hermetically sealed metal tubes with insulating sleeve.

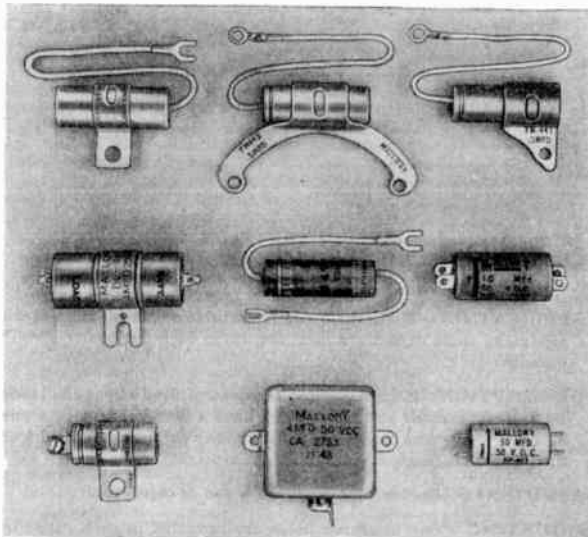
**TERMINALS**—Two bare tinned copper leads, one at each end.

**MOUNTING**—By means of its own leads.

**PACKAGING**—Ten to a display carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size Dia. Length
MT105	.001	100	3/32 x 1/2
MT107	.002	100	3/32 x 1/2
MT115	.005	100	3/32 x 1/2
MT125	.01	100	21/64 x 1/2
MT127	.02	100	21/64 x 11/16
MT135	.05	100	21/64 x 1 1/16
MT145	.1	100	21/64 x 1 3/8
MT605	.001	600	3/32 x 13/16
MT607	.002	600	3/32 x 13/16
MT615	.005	600	3/32 x 13/16
MT625	.01	600	21/64 x 1 1/16

# MALLORY AUTOMOTIVE NOISE SUPPRESSION CAPACITORS



Top Row: All AG types; FM442; FM441  
Center Row: DL445X; AM454; RF482  
Bottom Row: All AS types; CA275X; RF481

## Automotive Noise Suppression Capacitors

**APPLICATION**—For suppressing radio interference emanating from auto generators, oil gauges, ammeters, and other automotive, aircraft, or marine equipment.

**AM**—For ammeter and gauge suppression.

**FM**—For Ford generator suppression.

**DL**—For domelight suppression.

**RF**—For vibrator hash suppression.

**CA**—For general suppression in aircraft and marine application.

**AS, AG**—For generator, ammeter and contact spark suppression.

**DESCRIPTION**—Wax impregnated cartridges assembled in various style housings, as pictured. Type AG is round type with flexible lead, well protected from moisture, but not hermetically sealed. Type AS is hermetically sealed, provides low impedance, and is ideal for extreme climatic conditions.

**TERMINALS**—Various, as pictured.

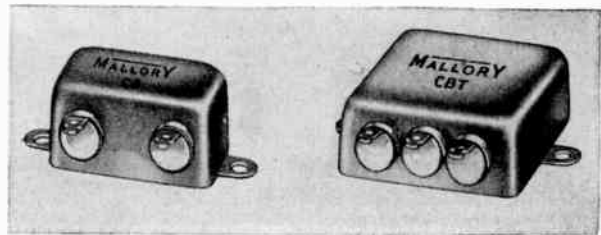
**MOUNTING**—Types AM 454 and RF 481 are held in place by the connecting wires or with TH clips. All others have own self-contained mounting features.

**PACKAGING**—Individual display cartons.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size	
			Dia.	Length
RF481	.5	50	3/4 x 1 1/4	
RF482	1.0	50	3/4 x 1 23/32	
CA275X	4.0	50	2 x 2 x 1	
AS125	.01	100	.675 x 1 1/16	
AG442*	.05	100	3/8 x 1 1/4	
AG443	.05	100	7/16 x 1 3/16	
AS145	.1	100	.675 x 1 1/4	
AS165	.25	100	3/4 x 1 1/2	
AS185	.5	100	1 x 1 1/4	
FM441	.5	100	.675 x 1 1/4	
RF480	.5	100	1 1/16 x 1 1/16	
AG450	.5-.5	100	3/4 x 2	
FM442	.5	160	.675 x 1 1/4	
AG444	.25	200	3/4 x 1 1/4	
DL445	.4	200	1 x 2 3/4	
AM454	.5	200	1 1/16 x 2	
AG451	.5	200	3/4 x 2	
AG453†	.5	200	3/4 x 2	
AG452	1.0	200	1 x 2 3/16	
AS525	.01	500 AC-DC	.675 x 1	
AS545	.1	500 AC-DC	1 x 1 1/2	
AS565	.25	500 AC-DC	1 x 2 1/4	

\*For Midget Aircraft Motors

†Has shielded lead



## Steel Cased Oil Filled Capacitors

**APPLICATION**—For general use in aircraft, marine, geophysical and industrial electronic equipment where extreme dependability under severe conditions is desired.

**DESCRIPTION**—Oil impregnated single, dual, and triple section units housed in rugged, hermetically sealed, hot-tinned steel cases.

**TERMINALS**—Single section has two terminals. Dual section units have three terminals with left terminal common, and both are internally insulated from case. Triple units have three terminals with common grounded to case. All terminals protrude in a row on one long side of case.

**MOUNTING**—By means of flanges at each end.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size*			
			W	L	H	X
CB403	.25	400	3/4 x 1 1/4	3/4 x 2 1/4		
CB404	.5	400	1 x 1 1/4	3/4 x 2 1/4		
CB405	1.0	400	1 3/4 x 2	3/4 x 2 3/4		
CB406	2.0	400	2 x 2	1 1/4 x 2 3/4		
CB602	.1	600	3/4 x 1 1/4	3/4 x 2 1/4		
CB603	.25	600	1 x 1 1/4	3/4 x 2 1/4		
CB604	.5	600	1 1/4 x 1 1/4	3/4 x 2 1/4		
CB605	1.0	600	1 3/4 x 2	3/4 x 2 3/4		
CB1002	.1	1000	3/4 x 1 1/4	3/4 x 2 1/4		
CB1003	.25	1000	1 1/4 x 1 1/4	3/4 x 2 1/4		
CB1004	.5	1000	1 3/4 x 2	3/4 x 2 3/4		
CBD403	.25-.25	400	1 1/4 x 1 1/4	3/4 x 2 1/4		
CBD404	.5-.5	400	1 3/4 x 2	3/4 x 2 3/4		
CBD602	.1-.1	600	3/4 x 1 1/4	3/4 x 2 1/4		
CBT403	3X .25	400	1 3/4 x 2	3/4 x 2 3/4		
CBT404	3X .5	400	1 3/4 x 2	1 x 2 1/4		
CBT602	3X .1	600	1 x 1 1/4	3/4 x 2 1/4		

\*W—Width; L—Length; H—Height; X—Mounting Centers.

## Uncased Wax Capacitors

**APPLICATION**—Designed for replacement of defective sections in large paper capacitor blocks or other applications where sealing pitch is applied for final seal.

**DESCRIPTION**—Wax impregnated section wrapped in varnish paper for moisture protection until finally potted when installed.

**TERMINALS**—Two flexible insulated leads out one end.

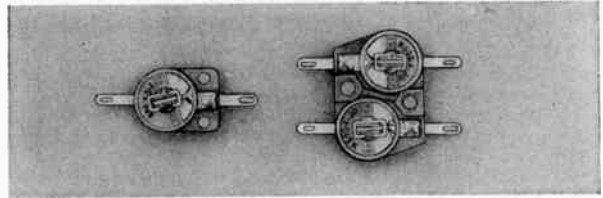
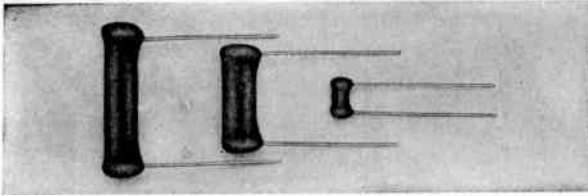
**MOUNTING**—Held in place by pouring with hot pitch.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size*		
			W	L	H
UB351	1	200	1/2 x 1 1/4	2 1/4	
UB352	2	200	3/4 x 1 1/16	2 1/4	
UB353	4	200	1 1/16 x 2 1/16	2 1/4	
UB354	1	400	3/16 x 1 1/4	2 1/4	
UB355	2	400	1 x 1 1/4	2 1/4	
UB356	4	400	1 1/16 x 1 1/4	4 3/4	
UB357	.5	600	3/4 x 1 1/4	2 1/4	
UB358	1	600	1 x 1 1/16	2 1/4	
UB359	2	600	1 1/4 x 2 1/16	2 1/4	
UB364	4	600	1 1/16 x 1 1/4	4 3/4	
UB362	1	1000	1 1/16 x 1 1/2	4 3/4	
UB363	2	1000	1 1/4 x 1 1/4	4 3/4	

\*W—Width; L—Length; H—Height.

# MALLORY CERAMIC CAPACITORS



## Ceramic Capacitors

**APPLICATION**—The small size and rugged construction of these capacitors make them ideal for by-passing, coupling, and other AM and FM-TV applications. The general purpose types "UC" may be used in all receiver applications except frequency determining circuits. They are particularly suitable for general replacement of molded mica and paper tubular capacitors. The zero temperature coefficient types "ZT" are ideally suited for use in precision radio and electronic circuits where a truly stable capacitor unaffected by temperature change is required. Negative temperature coefficient types "NT" are designed for use in precision radio and electronic circuits requiring a negative temperature coefficient of capacity.

**DESCRIPTION**—All Mallory ceramic capacitors are of low-loss ceramic construction, having a dipped phenolic coating for maximum protection from moisture. Their small physical size makes them ideal for replacement purposes when space is at a premium. Type "ZT," while similar in construction to the general purpose types "UC" have the important additional characteristic that their nominal capacity rating is substantially unaffected by a change in temperature of from  $-55^{\circ}\text{C}$  through  $85^{\circ}\text{C}$ .

Type "NT" have a negative temperature coefficient of capacity of 750 parts/million/ $^{\circ}\text{C}$ . temperature change. As a matter of convenience, they are rated in micro-microfarads at a temperature of  $25^{\circ}\text{C}$ . A rise in ambient temperature above  $25^{\circ}\text{C}$  will result in a proportional decrease of rated capacity. With lowering of temperature an automatic increase of capacity will be observed. In practical applications these capacitors should be mounted adjacent to the circuit components which require capacity compensation.

**TERMINALS**—One radial bare tinned copper lead  $1\frac{1}{4}$ " long at each end.

**MOUNTING**—By means of their wire leads.

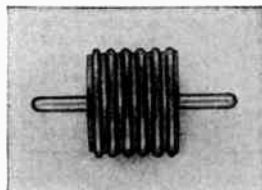
**PACKAGING**—Five capacitors per display carton.

### Voltage Rating—500 V DC

Capacity (mmfd)	General Purpose $\pm 20\%$ Tolerance		Zero Temperature Coefficient $\pm 10\%$ Tolerance		Negative Temperature Coefficient 750 Parts/Million/ $^{\circ}\text{C}$ $\pm 10\%$ Tolerance	
	Cat. No.	Size*	Cat. No.	Size*	Cat. No.	Size*
3			ZT-553	1	NT-555	1
5			ZT-555	1	NT-541	1
10	UC-541	1	ZT-541	1		
15	UC-5415	1				
20			ZT-542	1		
25	UC-5425	1	ZT-5425	2		
33			ZT-5433	2		
47					NT-5447	2
50	UC-545	1	ZT-545	3		
75	UC-5475	1	ZT-5475	3	NT-5475	3
100	UC-531	1	ZT-531	3	NT-531	3
150	UC-5315	1				
200	UC-532	1				
250	UC-5325	1				
300	UC-533	1				
500	UC-535	1				
750	UC-5375	2				
1000	UC-521	2				
1500	UC-5215	2				
2000	UC-522	3				
2500	UC-5225	3				
3000	UC-523	3				
5000	UC-525	3				

*SIZE CHART		
Sizes	Diameter	Length
1	.240"	.460"
2	.240"	.710"
3	.315"	1.250"



## High Voltage Ceramic Capacitors

With a rating of 500 micro-microfarads at 15,000 volts, this capacitor may be used as an exact replacement in the high voltage power circuit in many TV sets. A rigid case and built-in corona shield give an added safety factor. The capacitor is supplied with No. 6 copper terminals  $\frac{1}{2}$ " long. Interconnecting

leads may be soldered or clipped to these terminals without damage to the capacitor. Overall dimensions are  $1\frac{1}{2}$ " diameter by  $\frac{1}{2}$ " long excluding terminals. Each capacitor is packaged in an individual display carton. Catalog number HV-15035.

## Ceramic Trimmer Capacitors

**APPLICATION**—Their small size and stable electrical characteristics make these capacitors ideal for use in high frequency FM-TV circuits.

**DESCRIPTION**—Each capacitor consists of fired silver electrodes on a ceramic rotor and base. They have a  $360^{\circ}$  rotor with a substantially constant capacity change and are completely sealed from dust and dirt. Single or dual units are available.

**TERMINALS**—Solder lug type at each end of capacitor.

**MOUNTING**—Two clearance holes are provided in each capacitor for screw mounting.

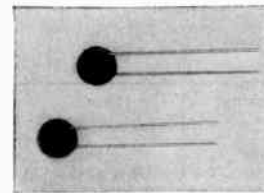
**PACKAGING**—One capacitor per display carton.

Single Units—Overall size  $2\frac{1}{32}$ " x  $2\frac{7}{32}$ " x  $\frac{1}{8}$ " thick.  
Voltage Rating—500 VDC

Catalog No.	Capacity Range (mmfd)	Temperature Coefficient
ST-5515-Z	1.5 to 7	Zero
ST-553-Z	3 to 12	Zero
ST-554-N	4 to 30	Neg. 500 Parts/Million/ $^{\circ}\text{C}$ .
ST-557-N	7 to 45	Neg. 500 Parts/Million/ $^{\circ}\text{C}$ .

Dual Units—Overall size  $1\frac{1}{4}$ " x  $\frac{1}{2}$ " x  $\frac{1}{8}$ " thick.  
Voltage Rating—500 VDC

Catalog No.	Capacity Range Each Section (mmfd)	Temperature Coefficient
DT-5515-Z	1.5 to 7	Zero
DT-553-Z	3 to 12	Zero
DT-554-N	4 to 30	Neg. 500 Parts/Million/ $^{\circ}\text{C}$ .
DT-557-N	7 to 45	Neg. 500 Parts/Million/ $^{\circ}\text{C}$ .



## Disk Ceramic Capacitors

Because of their small physical size, rugged construction, and excellent electrical characteristics these unique capacitors are particularly suitable for replacement of molded mica and paper tubular units. They

have a dipped phenolic coating for maximum protection from moisture. Equipped with radial bare tinned copper wire leads they are easily and quickly mounted. Ten capacitors are packaged in each display carton.

Catalog Number	Capacity (mfd)	DC Working Volts	Size Dia. Thickness	Length of Leads
DC-525	.005	500	$1\frac{1}{32}$ x $\frac{1}{8}$	$1\frac{1}{4}$ " Min.
DC-511	.01	500	$\frac{3}{4}$ x $\frac{1}{8}$	$1\frac{1}{4}$ " Min.

# MALLORY CHOKE COILS AND NOISE FILTERS



## Radio Frequency Choke Coils

**APPLICATION**—General purpose radio frequency choke coils for all circuits.

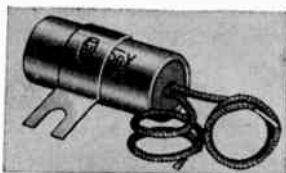
**DESCRIPTION**—Hour-glass wound for low distributed capacity and housed in compact insulating tubes.

**TERMINALS**—Two bare tinned copper wire leads, one at each end.

**MOUNTING**—By means of its leads or with TH clips, as described on hardware page. Also may be mounted by means of a stud through a hole provided through the core of the choke coil.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Turns	Wire	Inductance Microhenries	Size Dia. Length
RF581	90	16	430	1 x 1½
RF582	55	16	260	1 x 1½
RF583	55	12	25-30	1½ x 1½



## Motor Brush Noise Filters (Type W)

**APPLICATION**—Type W filters, while primarily designed for installation on motor brushes, may be used wherever a permanently installed dual capacity filter is desired. Where un-grounded motor frames or appliance cases are involved, type WSP is recommended for elimination of possible shock hazard.

**DESCRIPTION**—Dual wax impregnated capacitors housed in sealed metal tubes and specially designed to have low RF impedance. Case is grounded to common terminal of the included sections except in SP type where a shock limiting capacitor is employed between the common lead and case.

**TERMINALS**—Two flexible covered leads, case common ground.

**MOUNTING**—By means of attached tangential strap.

**PACKAGING**—Individual display cartons.

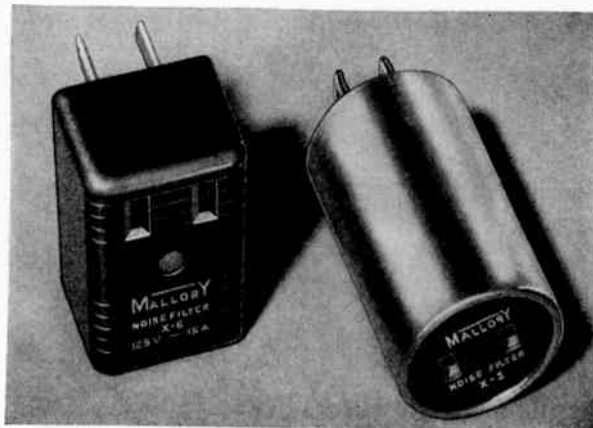
**Type W7**—115-220 Volts AC-DC for Light Interference  
Size ¾" x 2"

**Type W9**—115-220 Volts AC-DC for Medium Interference  
Size 1" x 3"

**Type W11**—115-220 Volts AC-DC for Severe Interference  
Size 1½" x 3"

**Type W7SP**—115-220 Volts AC-DC for Light Interference  
Size ¾" x 2"

**Type W9SP**—115-220 Volts AC-DC for Medium Interference  
Size 1" x 2½"



## Appliance Noise Filters (Type X)

**APPLICATION**—For use with plug-in type appliances where straight capacity type filters are sufficient to produce desired noise suppression.

**DESCRIPTION**—Single and dual type capacitor filters in round metal housings designed for insertion between appliance cord and wall outlet. X-6 is furnished in attractive compact brown plastic case.

**TERMINALS**—Male prongs for insertion into wall outlet and slots for appliance plug.

**MOUNTING**—Self-supporting by its prongs.

**PACKAGING**—Individual display carton.

**Type X1** is for relatively slight interference. Size 1½" x 1½", rated 110 volts, 5 amperes.

**Type X3** is a capacitor type filter having greater efficiency than Type X1. Size 1½" x 2½", rated 110-220 volts, 5 amperes.

**Type X5** is a triple capacity filter with provision for return lead to appliance. Special safety feature prevents possibility of shock and makes this unit ideal for use with vacuum cleaners, food mixers, etc. Size 1½" x 2½", rated 110-220 volts, 5 amperes, and equipped with binding post for connection to appliance or motor frame.

**Type X6** for medium interference. Furnished in an attractive, compact, rectangular brown plastic case. Size 1¼" x 2" x 1". Rated at 125 volts AC-DC, 15 amperes.

**Type X6D** same as X6 except packaged on an attractive counter display card, six to a card.

## IMPORTANT

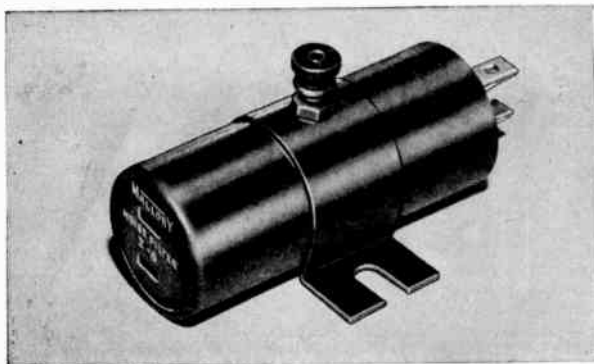
### General Noise Elimination Information

● All radio noise suppression devices should be applied at the source of the noise. Filters inserted in radio receiver cords are usually ineffective.

The filters described herein are, therefore, designed for insertion at the offending device. They incorporate many improvements accomplished through the extensive research and war production experience of the P. R. Mallory Company. While there will be some exceptions, most of the types of interference found in the home can be effectively reduced by the Mallory filters described. Unusual cases should be referred to the Mallory Engineering Department for advice.

Each filter is supplied with a complete instruction sheet for proper installation.

# MALLORY NOISE SUPPRESSION FILTERS



## Appliance Noise Filters (Type Z)

**APPLICATION**—For use with plug-in type appliances where inductance-capacity continuation filters are necessary to accomplish desired noise suppression.

**DESCRIPTION**—Single and dual inductance-capacity filters housed in round metal containers designed for insertion between appliance cord and wall outlet.

**TERMINALS**—Male prongs and female receptacles. Types Z4, 6 and 8 have extra provision for return lead to ground or appliance frame.

**MOUNTING**—Self-supported by its prongs.

**PACKAGING**—Individual display carton.

**Type Z2** is a capacitor-inductance filter for medium interference. Use with electric razor or small appliances. Most effective on grounded line systems where reversal of plugs will affect operation. Size  $1\frac{1}{2}'' \times 2\frac{1}{16}''$ , rated 110-220 volts, 3 amperes.

**Type Z4** is a dual inductance-capacity filter for severe interference on appliances where a return lead from the filter is inconvenient. Ideal for electric razor, vibrators and household appliances. Size  $1\frac{1}{2}'' \times 2\frac{1}{16}''$ , rated 110-220 volts, 3 amperes.

**Type Z6** is a dual inductance-capacity filter with provision for return lead to ground. Recommended for suppressing severe interference. Size  $1\frac{1}{2}'' \times 3\frac{3}{4}''$ . Rated 110-220 volts, 3 amperes.

**Type Z8** is same as Z6 but with provision for return wire connection to motor or appliance frame rather than ground. An efficient filter equivalent to box type within 3 ampere rating.

## Heavy-Duty Appliance Noise Filters (Type LC)



**APPLICATION**—For portable plug-in applications where severe interference is involved and ampere rating exceeds that of type Z.

**DESCRIPTION**—Combination inductance-capacity filter housed in rectangular metal case. Size  $2\frac{1}{16}'' \times 3\frac{1}{16}'' \times 3\frac{7}{16}''$ .

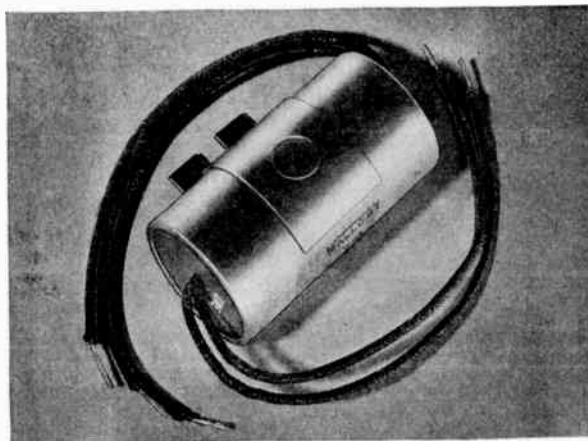
**TERMINALS**—Ample line cord with male plug for insertion in wall outlet. Female receptacle for appliance cord plug. Binding post for return wire lead to appliance or motor frame.

**MOUNTING**—Two metal flanges (when permanent mounting is desired).

**PACKAGING**—Individual carton.

**Type LC5** rated 115-220 volts AC-DC, 5 amperes.

**Type LC10** rated 115-220 volts AC-DC, 10 amperes.



## Fluorescent Lighting Noise Filter

**APPLICATION**—Specially designed for fluorescent lights where permanent installation on or in the light fixture is desired.

**DESCRIPTION**—Dual inductance-capacity filter housed in round metal tubes. Contains shock limiting capacitor. Size  $1\frac{1}{16}'' \times 2\frac{3}{4}''$ .

**TERMINALS**—Flexible covered wire leads, two at one end for input—three at other end for output of which the red lead is for grounding to light frame.

**MOUNTING**—By means of attached tangential strap.

**PACKAGING**—Individual display carton.

**Type Z8A**, 115-220 volts, AC-DC, 3 amperes. For fluorescent lights.



## Heavy-Duty Appliance Noise Filters (Type LB)

**APPLICATION**—For permanent installation wherever heavy-duty filters are required, such as outdoor signs, large motors, or at meter board.

**DESCRIPTION**—Heavy-duty choke-capacity combination filters sealed in rectangular case and housed in standard heavy gauge metal cut-out boxes.

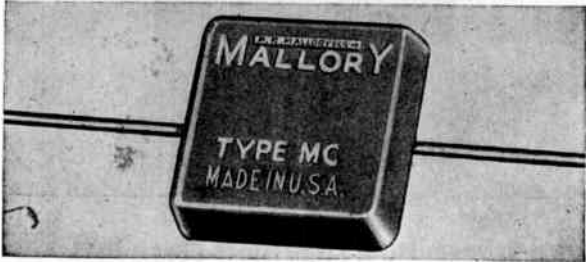
**TERMINALS**—Heavy, flexible insulated wire leads for splicing with house or motor wiring.

**MOUNTING**—Mounts by means of screws through bottom of cut-out box.

**PACKAGING**—Individual carton.

Type	Rating	Size
LB-10	220V-10 Amp.	$6\frac{1}{2}'' \times 6\frac{1}{2}'' \times 4''$
LB-20	220V-20 Amp.	$10\frac{1}{4}'' \times 10\frac{1}{4}'' \times 6''$
LB-40	220V-40 Amp.	$12'' \times 10\frac{1}{4}'' \times 6''$

# MALLORY MICA CAPACITORS



Case Size— $1\frac{3}{16}'' \times 1\frac{1}{16}'' \times \frac{5}{16}''$  with  $1\frac{1}{8}''$  Wire Leads  
Voltage Rating = 500 VDC Working—1000 VDC Test

Capacity Mfd.	Standard Mica ±20% Cap. Tolerance	Silver Mica ±10% Cap. Tolerance	Silver Mica ±2% Cap. Tolerance
	Mallory Cat. No.	Mallory Cat. No.	Mallory Cat. No.
.0005	MC445	MCB445	MCE445
.0008	MC451	MCB451	MCE451
.001		MCB455	MCE455
.0015	MC456	MCB456	MCE456
.002	MC457	MCB457	MCE457
.0025	MC460	MCB460	MCE460
.003	MC461	MCB461	MCE461
.004	MC463	MCB463	MCE463
.005	MC465	MCB465	MCE465
.006	MC467	MCB467	MCE467
.007	MC469	MCB469	MCE469
.008	MC471	MCB471	MCE471
.01	MC475	MCB475	MCE475

## Mica Receiver Capacitors

**APPLICATION**—Designed primarily for radio receiving applications, they may be used in television and other electronic circuits within their voltage range.

**DESCRIPTION**—Made with carefully selected mica and foil and housed in high quality compact rectangular bakelite case with standard RMA color coding for identification.

**TERMINALS**—Bare tinned copper leads.

**MOUNTING**—By means of its leads.

**PACKAGING**—5 or 10 capacitors per display carton only.

Case Size— $\frac{7}{16}'' \times 2\frac{5}{32}'' \times \frac{7}{32}''$  with  $1\frac{1}{8}''$  Wire Leads  
Voltage Rating = 500 VDC Working—1000 VDC Test

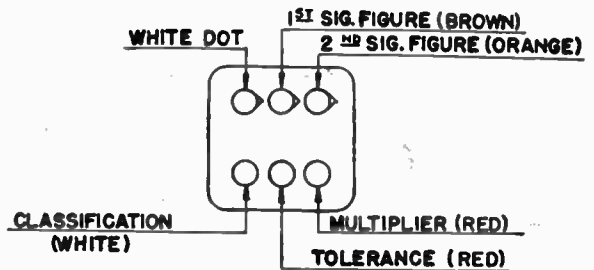
Capacity Mfd.	Standard Mica ±20% Cap. Tolerance	Silver Mica ±10% Cap. Tolerance	Silver Mica ±2% Cap. Tolerance
	Mallory Cat. No.	Mallory Cat. No.	Mallory Cat. No.
.000005	MC205	MCB205	MCE215
.00001	MC215	MCB215	MCE220
.000025	MC220	MCB220	
.00004	MC223	MCB223	MCE223
.00005	MC225	MCB225	MCE225
.000075	MC230	MCB230	MCE230
.0001	MC235	MCB235	MCE235
.00015	MC236	MCB236	MCE236
.0002	MC237	MCB237	MCE237
.00025	MC240	MCB240	MCE240
.0003	MC241	MCB241	MCE241
.0004	MC243	MCB243	MCE243
.0005	MC245	MCB245	MCE245
.0008	MC251	MCB251	MCE251
.001	MC255	MCB255	MCE255
.0015	MC256		

## New RMA Color Code

● The new RMA color code, shown below, permits positive identification of the mica capacitors listed.

Reading across the top from left to right with the arrow pointing to the right, the first dot shall always be white to indicate standard RMA molded mica capacitor. The second and third dots become the first two significant figures in the capacitance. The second row is read from right to left. The lower right dot should be the multiplier. The lower second dot indicates the tolerance and the lower left dot indicates the class.

The key to color significance is as follows:



Example shown above = 1300 mmfd. ±2%. 500 V.W.

Note: When any Mallory mica capacitor has a white dot in the upper left hand corner (when the arrows point to the right) that capacitor is coded under the new RMA color code, as shown above. Any other color in the upper left hand corner indicates the old color code, which may be found in Catalogue No. 467-A.

Color	Sig. Fig.	Mult.	Tol.	Class. *
Black	0	1	±20%	A
Brown	1	10		B
Red	2	100	± 2%	C
Orange	3	1000	± 3%	D
Yellow	4	10000		
Green	5		± 5%	
Blue	6			
Violet	7			
Gray	8			I
White	9			J
Gold		0.1		
Silver		0.01	± 10%	

\*Denotes various electrical characteristics.

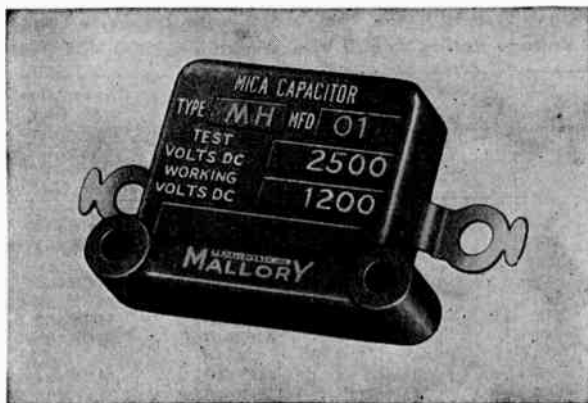
Voltage ratings vary with capacitance as shown in RMA Specification—April, 1946.

**DON'T MISS THE  
MALLORY CONTROL DEALS**

Turn to Page 3, Mallory Controls, for full information.



# MALLORY MICA CAPACITORS



## Mica Transmitting Capacitors (Type MH)

**APPLICATION**—For use in transmitting and power amplifier circuits where voltage exceeds the 500-volt rating of type MC.

**DESCRIPTION**—Made with accurately gauged high-quality India mica in bakelite molded case providing insulated mounting. Capacity tolerance  $\pm 20\%$ . Only size variation for various ratings is the thickness as shown in the chart.

**TERMINALS**—Short, heavy tinned copper solder lugs for minimum RF and contact resistance.

**MOUNTING**—Insulated mounting by means of screws through holes molded in case.

**PACKAGING**—Individual display carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Test Volts DC	Thickness
MH535	.0001	600	1000	$\frac{25}{64}$
MH635	.0001	1200	2500	$\frac{25}{64}$
MH735	.0001	2500	5000	$\frac{25}{64}$
MH545	.0005	600	1000	$\frac{25}{64}$
MH645	.0005	1200	2500	$\frac{25}{64}$
MH745	.0005	2500	5000	$\frac{25}{64}$
MH555	.001	600	1000	$\frac{25}{64}$
MH655	.001	1200	2500	$\frac{25}{64}$
MH755	.001	2500	5000	$\frac{25}{64}$
MH557	.002	600	1000	$\frac{25}{64}$
MH657	.002	1200	2500	$\frac{25}{64}$
MH757	.002	2500	5000	$\frac{25}{64}$
MH565	.005	600	1000	$\frac{25}{64}$
MH665	.005	1200	2500	$\frac{25}{64}$
MH765	.005	2500	5000	$\frac{25}{64}$
MH575	.01	600	1000	$\frac{25}{64}$
MH675	.01	1200	2500	$\frac{25}{64}$
MH577	.02	600	1000	$\frac{25}{64}$



## Mica Transmitting Capacitors (Type MX)

**APPLICATION**—Ideal for amateur transmitting equipment. They may also be used in coupling, tank, and bypass circuits at radio frequencies within their rating. (Note that the maximum amperes for several radio frequencies are given in the chart. The operating current should be kept within these limits.)

**DESCRIPTION**—Heavy-duty mica construction, supplied in attractive rectangular porcelain cases.

**TERMINALS**—Two screw type with complete washer and nut assembly.

**MOUNTING**—Two flanges with ample holes for machine screw mounting.

**PACKAGING**—Individual display carton.

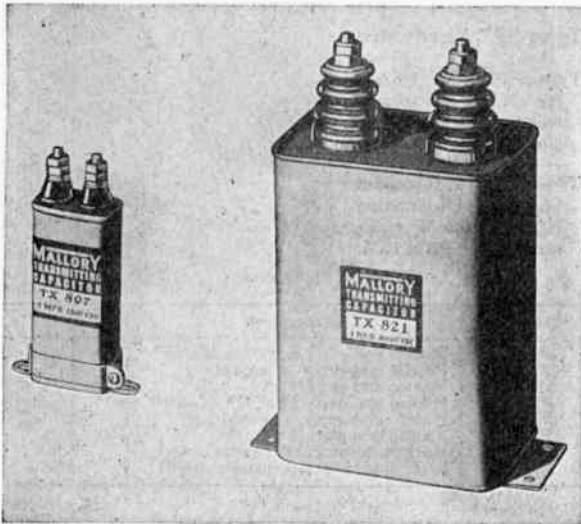
Mallory Cat. No.	Cap. Mfd.	Test Volts DC	Max. Amps.	Freq. KC.
MX855	.001	12,500	9.0	15000
			10.0	7500
			11.0	3750
			12.0	1875
MX857	.002	12,500	9.0	15000
			12.0	7500
			13.0	3750
			15.0	1875
MX865	.005	10,000	10.0	15000
			13.0	7500
			14.0	3750
			15.0	1875
MX875	.01	7,000	10.0	15000
			13.0	7500
			15.0	3750
			15.0	1875
MX877	.02	3,500	10.0	15000
			13.0	7500
			17.0	3750
			17.0	1875
MX885	.05	3,500	11.0	15000
			14.0	7500
			16.0	3750
			18.0	1875
MX895	.1	2,000	11.0	15000
			14.0	7500
			16.0	3750
			18.0	1875

## MALLORY

**RADIO SERVICE ENCYCLOPEDIA**

552 pages of replacement information  
for all pre-war and post-war receivers

# MALLORY OIL FILLED AND IMPREGNATED CAPACITORS



## Transmitting Capacitors (Type TX)

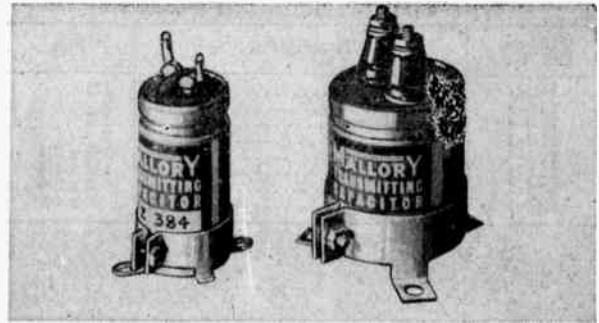
**APPLICATION**—For radio, television, transmitting, and all circuits requiring high voltage capacitors.

**DESCRIPTION**—Compact rectangular oil filled capacitors of sturdy construction.

**TERMINALS**—Suitable standoff insulated terminals at one end to safely cover maximum voltage rating of each unit.

**MOUNTING**—Base dimensions less than 3½ x 5½, by rectangular clamp providing either upright or inverted position. Base sizes of 3½ x 5½ and above, by permanent flanges at the unit base.

**PACKAGING**—Individual carton.



## Transmitting Capacitors (Type TZ)

**APPLICATION**—For filter and bypass circuits in power amplifiers, television and transmitting equipment where compact round can units are desired.

**DESCRIPTION**—Oil impregnated type capacitor furnished in round containers for upright or inverted mounting. All units internally insulated from case.

**TERMINALS**—The 1½" diameter units have two solder lug terminals with ample insulation for the voltage ratings involved. The 2" diameter units have special standoff insulated terminals.

**MOUNTING**—Supplied with type VR bracket for inverted or upright mounting.

**PACKAGING**—Individual carton.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size*		
			W	L	H
TX801	1	600	1 x 1½ x 2½		
TX802	2	600	1 x 1½ x 2½		
TX803	4	600	1 x 1½ x 4¼		
TX816	6	600	1½ x 2½ x 4½		
TX817	10	600	1½ x 3¾ x 4½		
TX822	.5	1000	1 x 1½ x 2½		
TX804	1	1000	1 x 1½ x 2½		
TX805	2	1000	1 x 1½ x 3¾		
TX806	4	1000	1½ x 2½ x 4½		
TX824	6	1000	1½ x 3¾ x 4½		
TX825	10	1000	1½ x 3¾ x 4½		
TX807	1	1500	1 x 1½ x 4¼		
TX808	2	1500	1½ x 2½ x 4½		
TX809	4	1500	1½ x 3¾ x 4½		
TX829	6	1500	1½ x 3¾ x 4½		
TX830	10	1500	3¾ x 3¾ x 4½		
TX831	.25	2000	1 x 1½ x 2½		
TX832	.5	2000	1 x 1½ x 2½		
TX810	1	2000	1½ x 2½ x 3¾		
TX811	2	2000	1½ x 3¾ x 4¼		
TX823	4	2000	2½ x 3¾ x 4¾		
TX833	6	2000	3¾ x 3¾ x 4¾		
TX834	10	2000	4¾ x 3¾ x 4¾		
TX812	1	2500	1½ x 2½ x 4		
TX813	2	2500	1½ x 3¾ x 4¾		
TX835	.1	3000	1½ x 2½ x 2¾		
TX836	.25	3000	1½ x 2½ x 3¾		
TX837	.5	3000	1½ x 2½ x 4¾		
TX814	1	3000	1½ x 3¾ x 4¾		
TX815	2	3000	3¾ x 3¾ x 4¾		
TX838	4	3000	4¾ x 3¾ x 5¾		
TX839	1	4000	2½ x 3¾ x 4¾		
TX827	2	4000	4¾ x 3¾ x 4¾		
TX828	4	4000	8½ x 5½ x 3½		
TX818	1	5000	5½ x 3½ x 5¾		
TX819	2	5000	5½ x 3½ x 9		
TX820	.5	6000	4¾ x 5½ x 3½		
TX821	1	6000	3½ x 4½ x 6¾		

\*W—Width; L—Length; H—Height.

Mallory Cat. No.	Cap. Mfd.	Working Volts DC	Size Dia. Height
TZ382	2.0	600	1 x 2½
TZ383	4.0	600	1½ x 4½
TZ384	1.0	1000	1½ x 2½
TZ385	2.0	1000	1½ x 4½
TZ389	4.0	1000	2 x 4
TZ386	.5	1500	1½ x 3¾
TZ387	1.0	1500	1½ x 4½
TZ388	2.0	1500	2 x 4
TZ390	1.0	2000	2 x 3¾
TZ391	2.0	2000	2 x 4½

## MALLORY TECHNICAL MANUAL

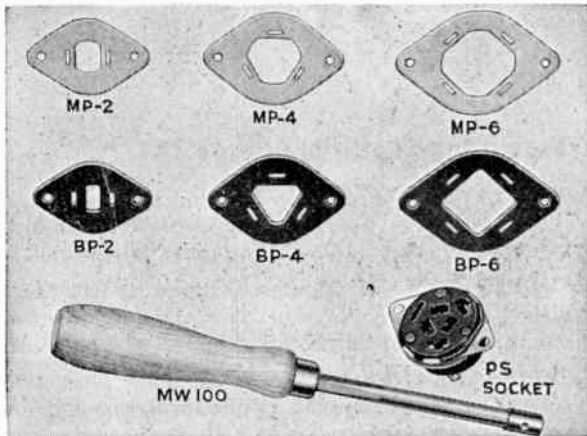
● This simply written, practical book bridges the gap between radio theory and practice. Designed for the radio serviceman, engineer, amateur or experimenter who wants the latest technical information . . . presented so that he can easily apply it to everyday problems. Contains page after page of information profusely illustrated. It's worth far more than its price.

Mallory Page 19 (See Mallory Page 3 for List Prices)

# MALLORY CAPACITOR HARDWARE

## Type "MSU," P, HC and NP Hardware

Mallory Cat. No.	Description	Size
115-1	Top Cap.....	1 3/8
116-1	Top Cap.....	2
118-1	Bottom Cap.....	1 3/8
119-1	Bottom Cap.....	2
121-1	Bracket.....	1 3/8 x 3 3/4
122-1	Bracket.....	1 3/8 x 4 1/4
123-1	Bracket.....	2 x 3 3/8
124-1	Bracket.....	2 x 4 1/8



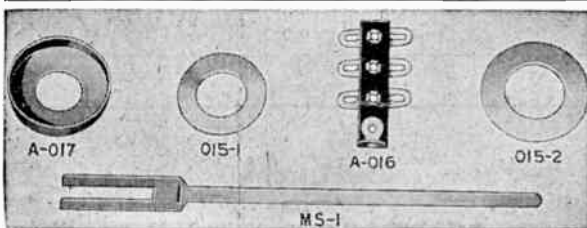
Type MP—Metal plates for grounded mounting of FP and WP capacitors.

Type BP—Bakelite plates for insulated mounting of FP and WP capacitors.

Type PS—Molded plastic sockets for plug-in mounting FP or WP capacitors. (Blank ear on capacitor should be removed to permit polarization with respect to socket.)

Type MW-100—Special wrench for twisting mounting ears on FP or WP capacitors.

Cat. No.	Description	Size
MP-2	Metal mounting wafer for FP.....	3/8
MP-4	Metal mounting wafer for FP.....	1
MP-6	Metal mounting wafer for FP.....	1 3/8
BP-2	Bakelite mounting wafer for FP.....	3/8
BP-4	Bakelite mounting wafer for FP.....	1
BP-4A	Bakelite mounting wafer for FP..... (To mount 1" FP in chassis punched for 1 3/8" wafer)	1
BP-6	Bakelite mounting wafer for FP.....	1 3/8
PS-4	Plug-in socket for FP.....	1
PS-6	Plug-in socket for FP.....	1 3/8
PS-4	Retainer clamp for PS-4 socket.....	
MW-100	Mounting wrench for FP.....	



Type MS-1—Adjustable metal strap for horizontal mounting tubular types up to 1 3/8" diameter.

Type A-016—Terminal connector or anchor strap for general use where required.

Type O15-1—Washer for RS type 3/8" neck when used in over-size chassis hole.

Type O15-2—Washer for use with RS, RM or HS units where chassis hole is too large for regular mounting. Use two washers, one above and one below chassis.

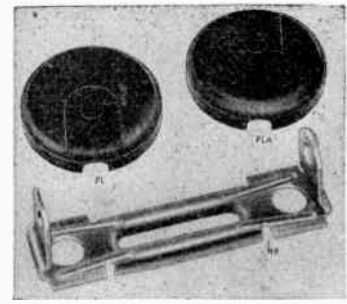
Type A-017—Special washer with turned-over edge for ring clamp mounting 1" RS type in 1 3/8" ring clamp.

Cat. No.	Description	Size
O15-1	Washer for 3/8" neck in 3/8" hole.....	Var.
O15-2	Washer for 3/8" neck in 1" hole.....	Var.
MS-1	Adjustable mounting strap.....	Var.
A-016	Terminal connector.....	Var.
A-017	Washer for clamp mounting neck cans.....	Var.

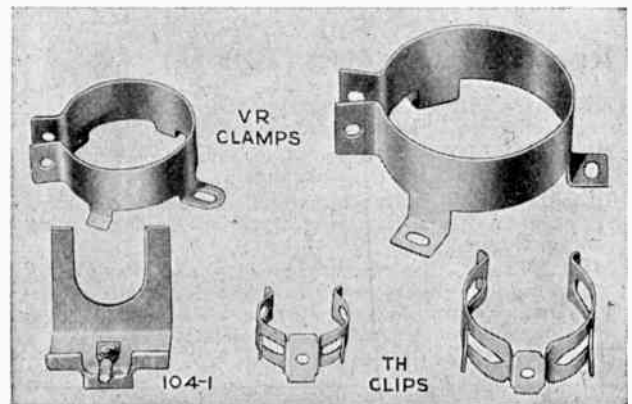
## Type "P" Hardware

Types PL and PLA—Plastic end cap to protect terminals on HC or NP units when desired.

Type HB—Horizontal bracket for mounting HC and NP units, using end cap type PL or PLA.



Cat. No.	Description	Size
PL-3	Plastic end cap For "On Motor" mounting	1 7/8
PL-6	Plastic end cap For "On Motor" mounting	1 13/16
PL-8	Plastic end cap For "On Motor" mounting	2 1/8
PLA-3	Plastic end cap For "Off Motor" mounting	1 7/8
PLA-6	Plastic end cap For "Off Motor" mounting	1 13/16
PLA-8	Plastic end cap For "Off Motor" mounting	2 1/8
HB-4	Horizontal bracket (plastic cases)...	3 3/8
HB-8	Horizontal bracket (plastic cases)...	4 3/8



Type TH—Special clips for horizontal mounting of any tubular or FP unit within the diameter range shown. Designed primarily to mount without tools under special chassis lances in original equipment, they may also be attached to chassis with 5-32 screw and nut in any 1/8" hole.

Type VR—Brackets for vertical mounting round units.

Type 104-1—Special bracket with spade bolt for mounting RS and RM units where spade bolt mounting was used.

Cat. No.	Description	Size
TH-13	Spring clip for TC.....	3/8
TH-15	Spring clip for TC.....	1/2 to 9/16
TH-17	Spring clip for TC.....	5/8 to 1 1/16
TH-19	Spring clip for TC and FP.....	3/4 to 13/16
TH-21	Spring clip for TC.....	7/8 to 1 1/8
TH-23	Spring clip for TC and FP.....	1 to 1 1/16
TH-25	Spring clip for TC and FP.....	1 1/8 to 1 7/16
VR-1	Clamp for vertical mounting.....	1 to 1 1/16
VR-3	Clamp for vertical mounting.....	1 1/8 to 1 7/16
VR-4	Clamp for vertical mounting.....	1 1/2 to 1 13/16
VR-6	Clamp for vertical mounting.....	1 3/4 to 1 13/16
VR-8	Clamp for vertical mounting.....	2 to 2 1/16
VR-10	Clamp for vertical mounting.....	2 1/2
104-1	Spade bolt mounting for neck type cans.....	Variable

## OE and CE Insulating Sleeve

Cat. No.	Description	Size
OE-1	Open end FP insulating sleeve.....	3/4 x 2
OE-3	Open end FP insulating sleeve.....	1 x 2
OE-4	Open end FP insulating sleeve.....	1 x 3
OE-5	Open end FP insulating sleeve.....	1 3/8 x 2
OE-6	Open end FP insulating sleeve.....	1 3/8 x 3
CE-1	Closed end FP insulating sleeve.....	3/4 x 2
CE-3	Closed end FP insulating sleeve.....	1 x 2
CE-4	Closed end FP insulating sleeve.....	1 x 3
CE-5	Closed end FP insulating sleeve.....	1 3/8 x 2
CE-6	Closed end FP insulating sleeve.....	1 3/8 x 3

Effective June 1, 1950

# AEROVOX PRICE LIST

Subject to Change Without Notice

Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price		
<b>PAGE P-51</b>															
<b>TYPE PR8</b>				<b>TELEVISION CAPACITORS</b>				<b>TYPE 1441WL-HV</b>				<b>TYPE GL</b>			
<b>Singles</b>				<b>TYPE 38</b>				<b>2000 Volts</b>				<b>600 Volts</b>			
Mfda.	Volts	Price		Mfda.	Price			Mfda.	Price			Mfda.	Volts	Price	
2000	4	3.50													
<b>PAGE P-52</b>															
<b>AF TRIPLES</b>				<b>TYPE 5084</b>				<b>PAGE P-53</b>				<b>TYPE GLS</b>			
<b>(85°C)</b>				<b>5000 Volts</b>				<b>TYPE PRVC</b>				<b>450 Volts</b>			
<b>PAGE P-53</b>															
<b>AF TRIPLES (85°C)</b>				<b>TYPE 6084</b>				<b>TYPE PRV</b>				<b>TYPE GLS</b>			
<b>6000 Volts</b>				<b>6000 Volts</b>				<b>600 Volts</b>				<b>450 Volts</b>			
Mfda.	Volts	Price		Mfda.	Volts	Price		Mfda.	Volts	Price		Mfda.	Volts	Price	
<b>PAGE P-54</b>															
<b>AF SINGLES</b>				<b>TYPE 10084</b>				<b>TYPE SRE</b>				<b>TYPE PRS</b>			
<b>4000 Volts</b>				<b>10,000 Volts</b>				<b>100 Volts</b>				<b>Singles</b>			
<b>PAGE P-55</b>															
<b>AF SINGLES (85°C)</b>				<b>TYPE 15084</b>				<b>TYPE PRS8</b>				<b>TYPE PR88</b>			
<b>4000 Volts</b>				<b>15,000 Volts</b>				<b>Singles</b>				<b>Duals</b>			
<b>PAGE P-56</b>															
<b>AF SINGLES (85°C)</b>				<b>TYPE 1468L-HV</b>				<b>TYPE PRS88</b>				<b>TYPE PR88B</b>			
<b>4000 Volts</b>				<b>1500 Volts</b>				<b>Singles</b>				<b>Duals</b>			





# AEROVOX PRICE LIST

Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price	Aerovox Cat. No.	List Price
<b>PAGE P-63</b>				<b>PAGE P-64</b>									
<b>AEROVOX MICA CAPACITORS</b>				<b>TYPES 1991-1996</b>									
<b>TYPE 1441W</b>				<b>Mfda. Types Price</b>									
<b>500 Volts</b>													
Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price
.0001	1.00	.0001	1.20	.0001	1.25	.0001	1.50	.0001	1.75	.0001	2.00	.0001	2.25
<b>TYPE 1441WX</b>				<b>TYPE 1467</b>				<b>TYPE 1484</b>					
<b>300 Volts</b>				<b>500 Volts</b>				<b>500 Volts</b>					
Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price
.004	.50	.004	.75	.004	.90	.004	1.10	.004	1.30	.004	1.50	.004	1.75
<b>TYPE 1488</b>				<b>TYPE 1533</b>				<b>TYPE 1549</b>					
<b>500 Volts</b>				<b>3750 Volts</b>				<b>500 Volts</b>					
Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price
.000001	.25	.000001	2.85	.000001	3.00	.000001	3.25	.000001	3.50	.000001	3.75	.000001	4.00
<b>TYPE 1488</b>				<b>TYPE 1549</b>				<b>TYPE 1591</b>					
<b>500 Volts</b>				<b>2500 Volts</b>				<b>500 Volts</b>					
Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price	Mfda.	Price
.0005	.30	.0005	1.25	.0005	1.50	.0005	1.75	.0005	2.00	.0005	2.25	.0005	2.50

# Television Capacitors



## TYPE PRS



### PRS SINGLES

Mfd.	Volts	Size: Ins. D. x L.
2000	4	1 x 2 3/4
500	6	1 x 1 3/4
1000	6	1 x 2 1/4
2000	6	1 x 2 3/4
100	12	1 x 1 1/2
250	12	1 x 1 3/4
500	12	1 x 2 1/4
10	25	1 x 1 1/4
16	25	1 x 1 1/2
25	25	1 x 1 1/4
50	25	1 x 1 1/2
100	25	1 x 1 1/2
500	25	1 x 2 1/4
10	50	1 x 1 1/4
20	50	1 x 1 1/2
25	50	1 x 1 1/4
50	50	1 x 1 1/2
100	50	1 x 1 1/2
4	150	1 x 1 1/4
8	150	1 x 1 1/4
12	150	1 x 1 1/4
20	150	1 x 1 1/4
24	150	1 x 1 1/4
30	150	1 x 1 1/2
40	150	1 x 1 1/2
50	150	1 x 1 1/2
8	250	1 x 1 1/2
12	250	1 x 1 1/2
20	250	1 x 1 1/2
8	350	1 x 1 1/2
10	350	1 x 1 1/2
12	350	1 x 1 1/2
24	350	1 x 1 1/2
4	450	1 x 1 1/2
8	450	1 x 1 1/2
10	450	1 x 1 1/2
12	450	1 x 1 1/2
16	450	1 x 1 1/2
20	450	1 x 1 1/2
30	450	1 x 2 1/4
40	450	1 x 2 1/4
10	500	1 x 3 1/4
15	500	1 x 3 3/4

### PRS DUALS

Mfd.	Volts	Size: Ins. D. x L.
50-30	150	1 x 2 1/4
50-50	150	1 x 2 1/4
20-20	250	1 x 2 1/4
8-8	450	1 x 2 1/4
10-10	450	1 x 2 1/4

### PRS TRIPLES

Mfd.	Volts	Size: Ins. D. x L.
20-20-20	150	1 1/2 x 1 3/4

## CODE CHART

The AF capacitor type designation is a coded description of the unit. Letters indicate voltages and numbers indicate capacitance determined from this chart:

No.	Cap.	Mfd.	No.	Cap.	Mfd.
1	5	11	55		
2	10	12	60		
3	15	13	65		
4	20	14	70		
5	25	15	75		
6	30	16	80		
7	35	17	85		
8	40	18	90		
9	45	19	95		
10	50	20	100		

Letter	Voltage	Letter	Voltage
A	25	K	500
B	50	L	600
C	100	M	700
D	150	N	20
E	200	P	15
F	250	R	10
G	300	S	6
H	350	T	5
I	400	X	475
J	450	W	525

## TYPE AF & AFH ELECTROLYTICS



### AF SINGLES

Type	Mfd.	Rating Volts	Size: Ins. D. x L.
AF400P	2000	15	1 3/8 x 3
AF200A	1000	25	1 3/8 x 2
AF16D	80	150	1 x 2
AF200P	1000	15	1 x 3
AF6F	30	250	3/4 x 2
AF8F	40	250	1 x 2 1/2
AF12F	60	250	1 x 2 1/2
AF10G	50	300	1 x 2 1/2
AF10J	50	450	1 x 3
AF16J	80	450	1 3/8 x 3
AF6X	30	475	1 x 3
AF18X	90	475	1 3/8 x 3 1/2
AF16K	80	500	1 3/8 x 3

### AF DUALS

Type	Mfd.	Rating Volts	Size: Ins. D. x L.
AF50R400S	250/2000	10/6	1 3/8 x 2
AF20020CP	1000-1000	15	1 x 3 1/2
AF3010A	150-50	25	1 x 2
AF1616D	80-80	150	1 3/8 x 2
AF4025D	200-125	150	1 3/8 x 3
AF32J	15-10	450	1 x 2 1/2
AF42J	20-10	450	1 x 3
AF66J	30-30	450	1 3/8 x 2
AF88J	40-40	450	1 3/8 x 3
AF164J	80-20	450	1 3/8 x 3 1/2
AF420C	20/100	450/100	1 3/8 x 2
AF62X	80-10	475	1 3/8 x 2 1/2
AF82X	40-10	475	1 3/8 x 2 1/2
AF15X10B	75/50	475/50	1 3/8 x 3
AF4X20G	20/100	475/300	1 3/8 x 3
AF8X8I	40/40	475/400	1 3/8 x 3
AF58K	25-40	500	1 3/8 x 3
AF88K	40-40	500	1 3/8 x 3
AF12K16D	60/80	500/150	1 3/8 x 3
AF8K10E	40/50	500/200	1 3/8 x 3
AF4K20G	20/100	500/300	1 3/8 x 3
AF8K8I	40/40	500/400	1 3/8 x 3

### AFH (85°C) SINGLES

Type	Mfd.	Rating Volts	Size: Ins. D. x L.
AFH10D	50	150	1 x 2
AFH20D	100	150	1 x 2
AFH3F	15	250	1 x 2
AFH3G	15	300	1 x 2
AFH16G	80	300	1 x 3 1/2
AFH20G	100	300	1 x 3 1/2
AFH16H	80	350	1 3/8 x 2 1/2
AFH25H	125	350	1 3/8 x 3
AFH8I	40	400	1 3/8 x 2
AFH2J	10	450	3/4 x 3
AFH4J	20	450	1 x 2
AFH6J	30	450	1 x 2 1/2
AFH8J	40	450	1 3/8 x 2

### AFH (85°C) DUALS

Type	Mfd.	Rating Volts	Size: Ins. D. x L.
AFH24D	10-20	150	1 3/8 x 2
AFH88D	40-40	150	1 x 2 1/2
AFH1010D	50-50	150	1 x 2 1/2
AFH4040D	200-200	150	1 3/8 x 3
AFH44F	20-20	250	1 x 2
AFH1616G	80-80	300	1 3/8 x 3
AFH244G	120-20	300	1 3/8 x 3
AFH66GH	30/30	300/350	1 x 3
AFH64H	30-20	350	1 x 3
AFH8H2E	40/10	350/200	1 3/8 x 2
AFH26I	10-30	400	1 x 3
AFH22J	10-10	450	1 x 2
AFH44J	20-20	450	1 3/8 x 2
AFH63J	30-15	450	1 3/8 x 2
AFH88J	40-40	450	1 3/8 x 3
AFH128J	60-40	450	1 3/8 x 3 1/2
AFH162J	80-10	450	1 3/8 x 3
AFH8J4A	40/20	450/25	1 x 3
AFH16J10B	80/50	450/50	1 3/8 x 3
AFH4J16H	20/30	450/350	1 3/8 x 3
AFH8J2H	40/10	450/350	1 3/8 x 2
AFH8J8H	40/40	450/350	1 3/8 x 3

### AF TRIPLES

Type	Mfd.	Rating Volts	Size: Ins.—D. x L.
AF444A	20-20-20	25	1 x 2
AF844D	40-20-20	150	1 x 2 1/2
AF64H4A	80-20/20	350/25	1 x 3
AF11110G16F	55/50/80	400/300/250	1 3/8 x 3
AF444J	20-20-20	450	1 3/8 x 2 1/2
AF644J	30-20-20	450	1 3/8 x 3
AF888J	40-40-40	450	1 3/8 x 3 1/2
AF444JA	20-20/20	450/25	1 x 3
AF664JA	30-30/20	450/25	1 3/8 x 2 1/2
AF6J205A	80/100-25	450/25	1 3/8 x 2
AF82J16D	40-10/80	450/150	1 3/8 x 2 1/2
AF82J2H	40-10/10	450/350	1 3/8 x 2
AF88J2K	40-40/10	450/500	1 3/8 x 3 1/2
AF222X	10-10-10	475	1 x 3
AF644X	30-20-20	475	1 3/8 x 3
AF662X	30-30-10	475	1 3/8 x 3
AF822X	40-10-10	475	1 3/8 x 3
AF2X20E8B	10/100/40	475/200/50	1 3/8 x 2 1/2
AF8X8I5B	40/40/25	475/400/50	1 3/8 x 3
AF4X4G8A	20/20/40	475/300/25	1 3/8 x 2
0F4K4G8A	20/20/40	500/300/25	1 3/8 x 2

(CONTINUED ON NEXT PAGE)

ALL CAPACITORS LISTED WILL MEET THE HIGH TEMPERATURES ENCOUNTERED IN TV RECEIVERS.

Aerovox capacitors are available in JAN size and will meet all the requirements of the applicable JAN specs. Order by JAN type No.





# Television Capacitors

(CONTINUED FROM PRECEDING PAGE)

## AFH (85°C) TRIPLES

Type	Rating		Size: Ins. D. x L.
	Mfd.	Volts	
AFH844D	40-20-20	150	1 x 2
AFH888D	40-40-40	150	1 x 2 1/2
AFH202E8B	100-10/40	200/50	1 1/2 x 2
AFH161612F	80-80-80	250	1 1/2 x 3
AFH84F2D	40-20/10	250/150	1 1/2 x 2
AFH844F	40-20-20	250	1 x 3
AFH1242Q	50-20-10	300	1 1/2 x 2
AFH88G4D	40-40/20	300/150	1 1/2 x 2
AFH20G12D4A	100/60/20	300/150/25	1 1/2 x 3
AFH1284H	60-40-20	350	1 1/2 x 3 1/2
AFH2H10D20B	10/50/100	350/150/50	1 x 3
AFH218G2D	10/40/10	400/300/150	1 1/2 x 2
AFH168130B	80-40/150	400/50	1 1/2 x 4
AFH222J	10-10-10	450	1 x 3
AFH266J	10-30-30	450	1 1/2 x 3
AFH333J	15-15-15	450	1 x 3 1/2
AFH666J	30-30-30	450	1 1/2 x 3 1/2
AFH882J	40-40-10	450	1 1/2 x 3
AFH22J4A	10-10/20	450/25	1 x 2
AFH88J4A	40-40/20	450/25	1 1/2 x 3
AFH88J8A	40-40/40	450/25	1 1/2 x 3
AFH42J8B	20-10/40	450/50	1 x 3
AFH88J16B	40-40/80	450/50	1 1/2 x 3 1/2
AFH88J8D	40-40/40	450/150	1 1/2 x 3 1/2
AFH82J16D	40-10/80	450/150	1 1/2 x 3
AFH8J1810D	40/90-50	450/150	1 1/2 x 3
AFH8J8D26B	40/40/180	450/150/50	1 1/2 x 3
AFH82J16E	40-10/80	450/200	1 1/2 x 3
AFH44J12H	20-20/60	450/350	1 1/2 x 3
AFH82J2H	40-10/10	450/350	1 1/2 x 3
AFH6J1018A	30/50/40	450/400/25	1 1/2 x 3
AFH2J616G	10/30/30	450/400/300	1 1/2 x 2 1/2

## AF QUADRUPLES

Type	Rating		Size: Ins. D. x L.
	Mfd.	Volts	
AF8842G	40-40-20-10	300	1 1/2 x 2 1/2
AF16222H	80-10-10-10	350	1 1/2 x 3
AF212H162F	40/10/50-10	400/350/250	1 1/2 x 3
AF3C62J	15-30-20-10	450	1 1/2 x 3
AF422J	40-20-10-10	450	1 1/2 x 3
AF222J5A	10-10-10/25	450/25	1 1/2 x 2
AF444J4A	20-20-20/20	450/25	1 1/2 x 2 1/2
AF832J5A	40-15-10/25	450/25	1 1/2 x 3
AF663J6B	30-30-15/30	450/50	1 1/2 x 3
AF842J20B	40-20-10/100	450/50	1 1/2 x 3 1/2
AF8J8D26B	40/40/10-30	450/150/50	1 1/2 x 3
AF2222X	10-10-10-10	475	1 1/2 x 2
AF824X2A	40-10-20/10	475/25	1 1/2 x 3
AF2X2J16E10B	10/10/80/50	475/450/200/50	1 1/2 x 2 1/2

## AFH (85°C) QUADRUPLES

Type	Rating		Size: Ins. D. x L.
	Mfd.	Volts	
AFH2412D4A	10-20-60/20	150/25	1 1/2 x 2
AFH101010D4A	50-50-50/20	150/25	1 1/2 x 2
AFH844G5A	40-20-20/25	300/25	1 1/2 x 2
AFH1284G10A	60-40-20/50	300/25	1 1/2 x 3
AFH888G4D	40-40-40/20	300/150	1 1/2 x 3
AFH16222H	80-10-10-10	350	1 1/2 x 3
AFH3H168E40A	15/80-40/200	350/200/25	1 1/2 x 3
AFH8H84G4A	40/40-20/20	350/300/25	1 1/2 x 3
AFH2222J	10-10-10-10	450	1 1/2 x 2
AFH3666J	15-30-30-30	450	1 1/2 x 4
AFH4444J	20-20-20-20	450	1 1/2 x 3
AFH8422J	40-20-10-10	450	1 1/2 x 3
AFH822J50A	40-10-10/250	450/25	1 1/2 x 3
AFH822J60A	40-10-10/300	450/25	1 1/2 x 3
AFH832J5A	40-15-10/25	450/25	1 1/2 x 3
AFH862J4A	40-30-10/20	450/25	1 1/2 x 3
AFH88J26B	40-40/10-30	450/50	1 1/2 x 3
AFH1222J4D	60-10-10/20	450/150	1 1/2 x 3

## TYPE 38



### OIL FILLED METAL-CASED TUBULARS

Type 6038MTD  
6000 V.D.C.

Cap. Mfd.	Size: Ins.
.0005	1 1/2 x 1 1/2
.001	1 1/2 x 1 1/2
.005	1 1/2 x 2 1/2
.01	1 1/2 x 2 1/2
.05	1 1/2 x 3 1/2

## TYPE P88



### MOLDED TUBULAR CAPACITORS

Type 6088  
6000 V.D.C.

Cap. Mfd.	Size: Ins.
.0005	1 1/2 x 2
.001	1 1/2 x 2
.005	1 1/2 x 2

Type 10088  
10,000 V.D.C.

Cap. Mfd.	Size: Ins.
.0005	1 1/2 x 2

## HI-VOLTAGE MICA CAPACITORS

Type 1468L-HV

Size: 1 1/2 x 1 1/2 x 1/8 ins.  
1500 V.D.C.W.

Cap. Mfd.		
.000005	.000075	.00025
.00001	.0001	.0003
.000025	.00015	.00045
.00005	.0002	.0004

Type 1467L-HV

Size: 1 1/2 x 1 1/2 x 1/8 ins.  
1500 V.D.C.W.

Cap. Mfd.		
.0005	.00075	.001

Type 1441WL-HV

Size: 1 x 1/2 x 1/8 ins.  
2000 V.D.C.W.

Cap. Mfd.		
.0005	.00075	.001

Standard Tolerance ±20%

## TYPE 84



### CARDBOARD CASE PAPER TUBULARS

(85°C)

Type 2584  
2500 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 1 1/2
.00025	1/2 x 1 1/2
.0005	1/2 x 1 1/2
.001	1/2 x 1 1/2
.003	1/2 x 1 1/2
.005	1/2 x 1 1/2
.01	1/2 x 1 1/2
.03	1/2 x 2 1/2
.05	1/2 x 2 1/2
.1	1 x 2 1/2
.15	1 x 3 1/2

Type 5084  
5000 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 1 1/2
.00025	1/2 x 1 1/2
.005	1/2 x 1 1/2
.001	1/2 x 1 1/2
.003	1/2 x 2
.0005	1/2 x 2
.01	1/2 x 2
.03	1 x 2 1/2
.05	1 1/2 x 3

Type 6084  
6000 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 1 1/2
.00025	1/2 x 1 1/2
.005	1/2 x 1 1/2
.001	1/2 x 1 1/2
.003	1/2 x 2
.0005	1/2 x 2
.01	1/2 x 2
.03	1 1/2 x 2 1/2
.05	1 1/2 x 3

Type 7584  
7500 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 1 1/2
.00025	1/2 x 1 1/2
.0005	1/2 x 1 1/2
.001	1/2 x 1 1/2
.003	1/2 x 2
.005	1/2 x 2
.01	1 x 2 1/2
.03	1 1/2 x 3

Type 10084  
10,000 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 2 1/2
.00025	1/2 x 2 1/2
.0005	1/2 x 2 1/2
.001	1/2 x 2 1/2
.003	1/2 x 2 1/2
.005	1 x 2 1/2
.01	1 1/2 x 2 1/2

Type 15084  
15,000 V.D.C.

Cap. Mfd.	Size: Ins.
.0001	1/2 x 2 1/2
.00025	1/2 x 2 1/2
.0005	1/2 x 2 1/2
.001	1 x 2 1/2
.003	1 1/2 x 2 1/2
.005	1 1/2 x 3

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# Electrolytic Capacitors



## BANTAM\* CAPACITORS



### TYPE SRE

Tiniest Aerovox electrolytic. Handles full sized jobs, especially suitable for hearing aids, personal radios, screen filter circuits and similar functions. Hermetically sealed, aluminum tube with waxed cardboard insulating jacket. New stud terminals with No. 18 gauge tinned copper wire leads.

Volts	Cap. Mfd.	Size: Ins. Dia. X Lgth.
3	10C	3/8 x 1
3	200	3/8 x 1 1/2
3	800	1/2 x 1 1/2
3	500	1/2 x 1 1/2
6	50	3/8 x 1
6	100	3/8 x 1 1/2
12	50	3/8 x 1 1/2
12	100	3/8 x 1 1/2
12	200	1/2 x 1 1/2
25	25	3/8 x 1 1/2
25	50	3/8 x 1 1/2
25	100	3/8 x 1 1/2
50	10	3/8 x 1 1/2
50	15	3/8 x 1 1/2
150	5	3/8 x 1
150	10	3/8 x 1 1/2
150	15	3/8 x 1 1/2
150	25	3/8 x 1 1/2

## CLEAT-MOUNTING METAL-CAN CAPACITORS TYPE PRVC

Originally designed by Aerovox. Replaces other electrolytics requiring mounting hole in chassis. Installed in a jiffy by center screw and metal cleat. Separate sections, two leads each section. Coded leads.



### Type PRVC 600

Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 1/2 x 4
8	1 1/2 x 4
16	1 1/2 x 4

### Type PRVC 475

Cap. Mfd.	Size: Ins. Dia. X Hght.
8	1 1/2 x 3
12	1 1/2 x 3
16	1 1/2 x 3
8-8	1 1/2 x 4

### Type PRVC 450

Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 1/2 x 3
8	1 1/2 x 3
10	1 1/2 x 3
12	1 1/2 x 3
16	1 1/2 x 3
20	1 1/2 x 3
30	1 1/2 x 3
40	1 1/2 x 3
80	1 1/2 x 4

### Type PRVC 450

Cap. Mfd.	Size: Ins. Dia. X Hght.
8-8	1 1/2 x 4
8-16	1 1/2 x 4
10-10	1 1/2 x 4
12-12	1 1/2 x 4
16-16	1 1/2 x 4
20-20	1 1/2 x 4

### Type PRVC 450

Cap. Mfd.	Size: Ins. Dia. X Hght.
8-8-8	1 1/2 x 4
10-10-10	1 1/2 x 4

\*Trade Mark.

## TUBULAR ALUMINUM CAN DANDEES\*



### TYPE PRS

Tubular units encased in aluminum containers especially suited for compact assemblies. The higher voltage listings meet the new radio and electronic circuit potentials, particularly in cathode-ray applications like television receivers and oscillographs.

PRS units are normally supplied with etched foil but plain foil is available. High-purity aluminum construction. Vented for excessive gas pressures. Dual, triple and quad units supplied with insulated standard wire leads and mounting bands. Single element units have solid wire leads. Sizes indicated below are for units with outer insulating tube.

### SINGLE ELEMENT UNITS

Cap. Mfd.	V.D.C.W.	Size: Ins. Dia. X Lgth.
100	6	1 x 1 1/2
250	6	1 x 1 1/2
500	6	1 x 1 1/2
1000	6	1 x 2 1/4
1500	6	1 x 2 1/4
2000	6	1 x 2 1/4
100	12	1 x 1 1/2
250	12	1 x 1 1/2
500	12	1 x 2 1/4
1000	12	1 x 2 1/4
100	15	1 x 1 1/2
250	15	1 x 1 1/2
500	15	1 x 2 1/4
1000	15	1 x 2 1/4
100	25	1 x 1 1/2
250	25	1 x 1 1/2
500	25	1 x 2 1/4
1000	25	1 x 2 1/4
10	50	1 x 1 1/2
25	50	1 x 1 1/2
50	50	1 x 1 1/2
100	50	1 x 1 1/2
4	150	1 x 1 1/2
8	150	1 x 1 1/2
12	150	1 x 1 1/2
16	150	1 x 1 1/2
20	150	1 x 1 1/2
24	150	1 x 1 1/2
30	150	1 x 1 1/2
40	150	1 x 1 1/2
50	150	1 x 1 1/2
100	150	1 x 2 1/4
4	250	1 x 1 1/2
8	250	1 x 1 1/2
12	250	1 x 1 1/2
16	250	1 x 1 1/2
20	250	1 x 1 1/2
40	250	1 x 2 1/4
4	350	1 x 1 1/2
8	350	1 x 1 1/2
12	350	1 x 1 1/2
16	350	1 x 1 1/2
24	350	1 x 1 1/2
4	450	1 x 1 1/2
8	450	1 x 1 1/2
10	450	1 x 1 1/2
12	450	1 x 1 1/2
16	450	1 x 1 1/2
20	450	1 x 1 1/2
30	450	1 x 2 1/4
40	450	1 x 2 1/4
8	500	1 x 1 1/2
10	500	1 x 1 1/2
12	500	1 x 1 1/2
16	500	1 x 1 1/2
8	600	1 x 1 1/2
10	600	1 x 1 1/2
12	600	1 x 1 1/2
16	600	1 x 1 1/2
8	700	1 x 1 1/2
10	700	1 x 1 1/2
12	700	1 x 1 1/2
16	700	1 x 1 1/2

### DUAL DANDEES (Dual-Element Units)

Cap. Mfd.	V.D.C.W.	Size: Ins. Dia. X Lgth.
10-10	25	1 x 1 1/2
10-10	50	1 x 1 1/2
8-8	150	1 x 1 1/2
8-15	150	1 x 2 1/4
20-20	150	1 x 1 1/2
20-30	150	1 x 2 1/4
20-40	150	1 x 2 1/4
30-30	150	1 x 1 1/2
30-40	150	1 x 2 1/4
30-50	150	1 x 2 1/4
40-40	150	1 x 2 1/4
40-80	150	1 x 2 1/4
50-30	150	1 x 2 1/4
50-50	150	1 x 2 1/4
80-40	150	1 x 2 1/4
100-100	150	1 x 2 1/4
8-8	200	1 x 1 1/2
8-16	200	1 x 2 1/4
16-16	200	1 x 1 1/2
30-30	200	1 x 1 1/2
8-16	250	1 x 1 1/2
10-10	250	1 x 1 1/2
16-16	250	1 x 2 1/4
20-20	250	1 x 2 1/4
30-30	250	1 x 2 1/4
8-8	450	1 x 1 1/2
8-16	450	1 x 2 1/4
10-10	450	1 x 2 1/4
16-16	450	1 x 2 1/4
20-20	450	1 x 2 1/4
30-30	450	1 x 2 1/4
40-20	450	1 x 2 1/4
40-40	450	1 x 2 1/4

### TRIPLE DANDEES (Triple-Element Units)

Cap. Mfd.	V.D.C.W.	Size: Ins. Dia. X Lgth.
20-20-20	150	1 x 1 1/2
30-20-10	150	1 x 1 1/2
30-30-30	150	1 x 2 1/4
40-20-20	150	1 x 2 1/4
40-30-20	150	1 x 2 1/4
40-40-40	150	1 x 2 1/4
50-30-10	150	1 x 2 1/4
50-30-20	150	1 x 2 1/4
80-40-20	150	1 x 2 1/2

### TYPE PRS MULTIPLES (Common Negative)

Size: 1 1/2 Dia. x 2 1/4 Lgth. (ins.)	Type PRS 64D20A
Cap. Mfd. X V.D.C.W.	
30-20 x 150 + 100 x 25	
Type PRS 86D4A	
40-80 x 150 + 20 x 25	

Size: 1 1/2 Dia. x 2 1/4 Lgth. (ins.)	Type PRS 106D20A
Cap. Mfd. X V.D.C.W.	
50-80 x 150 + 100 x 25	
Type PRS 1010D4A	
50-50 x 150 + 20 x 25	

### TYPE PRS-B DUAL ELEMENT



Cap. Mfd.	V.D.C.W.	Surge Peak	Size: Ins. Dia. X Lgth.
450	450	500v	1 x 3
8-8	150	200v	1 x 3
8-16	150	200v	1 1/2 x 3 1/2
16-16	150	200v	1 1/2 x 3 1/2

Cap. Mfd.	V.D.C.W.	Surge Peak	Size: Ins. Dia. X Lgth.
250	250	300v	1 x 2 1/2
8-16	150	200v	1 x 2 1/2
16-16	150	200v	1 x 3

## SCREW-MOUNTING WIRE-LEAD CAPACITORS TYPE GL



Inverted mounting, aluminum can unit in single, double and triple elements. Two separate color-coded leads, 5" long brought out from each section. Convenient mounting with palmnut and threaded neck.

Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 1/2 x 4
8	1 1/2 x 4 1/2
16	1 1/2 x 4 1/2

Cap. Mfd.	Size: Ins. Dia. X Hght.
8	1 1/2 x 3
12	1 1/2 x 3
16	1 1/2 x 3

### Type GL475 (Dual Element)

8-8	1 1/2 x 4
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Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 1/2 x 8
8	1 1/2 x 8
10	1 1/2 x 8
12	1 1/2 x 8
16	1 1/2 x 8
20	1 1/2 x 8
30	1 1/2 x 8
40	1 1/2 x 8
80	1 1/2 x 4

### Type GL450 (Dual Element)

8-8	1 1/2 x 4
8-16	1 1/2 x 4
10-10	1 1/2 x 4
12-12	1 1/2 x 4
16-16	1 1/2 x 4
20-20	1 1/2 x 4

### Type GL450 (Triple Element)

8-8-8	1 1/2 x 4
10-10-10	1 1/2 x 4

## MIDGET SCREW-MOUNTING WIRE-LEAD CAPACITORS TYPE GLS



Similar to Type GL. Smaller diameter cans and minimum length. Best for compact assemblies.

Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 x 2 1/2
8	1 x 2 1/2
12	1 x 3 1/2
16	1 x 3 1/2

### Type GLS450 (Double Element)

8-8	1 1/2 x 3
-----	-----------

Cap. Mfd.	Size: Ins. Dia. X Hght.
4	1 x 2 1/2
8	1 x 2 1/2
12	1 x 2 1/2
16	1 x 3 1/2



# Electrolytic Capacitors

## PLUG-IN ELECTROLYTIC CAPACITORS TYPE AEP

Quick change, hermetically sealed dry electrolytic. Plugs into standard octal socket for fast replacement or testing when continuous service is important. High capacity and ultra-compact, using etched foil in small can sizes. Non-corrosive aluminum internal construction throughout. Vented for safety.



### Single Element Units

Type	Cap. Mfda. × V.D.C.W.	Size: Ins. Dia. × Hght.
AEP5A	25 x 25	1 1/8 × 2 1/2
AEP4D	20 x 150	1 1/8 × 2 1/2
AEP8D	40 x 150	1 1/8 × 2 1/2
AEP2J	10 x 450	1 1/8 × 2 1/2
AEP3J	15 x 450	1 1/8 × 2 1/2
AEP4J	20 x 450	1 1/8 × 2 1/2
AEP6J	30 x 450	1 1/8 × 2 1/2
AEP8J	40 x 450	1 1/8 × 2 1/2
AEP16J	80 x 450	1 1/8 × 3 1/2
AEP2L	10 x 600	1 3/8 × 4 1/4

### Dual Element Units

AEP44D	20-20 x 150	1 3/8 × 2 1/2
AEP88D	40-40 x 150	1 3/8 × 2 1/2
AEP22J	10-10 x 450	1 3/8 × 2 1/2
AEP44J	20-20 x 450	1 3/8 × 2 1/2

### Triple Element Units

AEP444D	20-20-20 x 150	1 3/8 × 2 1/2
AEP88D4A	40-40 x 150/20 x 25	1 3/8 × 2 1/2
AEP22J	10-10-10 x 450	1 3/8 × 2 1/2
AEP22J4A	10-10 x 450/20 x 25	1 3/8 × 2 1/2
AEP44J4A	20-20 x 450/20 x 25	1 3/8 × 2 1/2
AEP44J	20-20-20 x 450	1 3/8 × 3

### Quadruple Element Units

AEPG444D4A	20-20-20 x 150/20 x 25*	1 3/8 × 2 1/2
AIPG444J4A	20-20-20 x 450/20 x 25*	1 3/8 × 3

\*Ground lug provided for cathode connection.

## HIGH CAPACITY LOW VOLTAGE CAPACITORS

### TYPE HCLV

High capacity — low voltage units used in electric fence control and other applications requiring these capacity-voltage values. Unit supplied with outer insulating tube and mounting ring. External tube sizes indicated below.



### Type HCLV12—12 V.D.C.W.

Cap. Mfda.	Size Dia. × Hght.
500	1 1/8 × 3
1000	1 1/8 × 3 1/2
2000	1 1/8 × 4 1/2
3000	2 1/8 × 4 1/2
4000	2 1/8 × 4 1/2

### Type HCLV18—18 V.D.C.W.

500	1 1/8 × 3
1000	1 1/8 × 4 1/2
2000	1 1/8 × 4 1/2
4000	2 1/8 × 4 1/2

### Type HCLV25—25 V.D.C.W.

500	1 1/8 × 3
1000	1 1/8 × 4 1/2
2000	2 1/8 × 3 1/2
3000	2 1/8 × 4 1/2
4000	2 1/8 × 4 1/2

### Type HCLV50—50 V.D.C.W.

1000	2 1/8 × 3 1/2
2000	2 1/8 × 4 1/2

## REPLACEMENT FOR WET ELECTROLYTICS



### TYPE WR

Dry electrolytic for replacement of wet electrolytic units. Furnished in round aluminum cans, the range of capacities covers most applications in standard radio receivers and other equipment originally using wet type electrolytic capacitors. 450 V.D.C.

## DRAWN-CASE "BATHTUB"



### TYPE BT

Designed for rigid mounting in minimum space. Extra sturdy construction, immersion proof.

### Type BT 500—500 V.D.C.W.

Cap. Mfd.	L. × W. × H.
4	2 × 2 × 1 1/4
8	2 × 2 × 1 1/4

### Type BT 450—450 V.D.C.W.

8	1 3/4 × 1 × 1
12	1 3/4 × 1 1/4 × 1
16	2 × 1 1/4 × 1

### Type BT 350—350 V.D.C.W.

8	1 3/4 × 1 × 1
12	1 3/4 × 1 × 1
16	1 3/4 × 1 × 1
20	1 3/4 × 1 1/4 × 1

### Type BT 150—150 V.D.C.W.

8	1 3/4 × 1 × 1
12	1 3/4 × 1 × 1
16	1 3/4 × 1 × 1
24	1 3/4 × 1 × 1
30	1 3/4 × 1 × 1
40	1 3/4 × 1 × 1

### Type BT 50—50 V.D.C.W.

10	1 3/4 × 1 × 1
25	1 3/4 × 1 × 1
50	1 3/4 × 1 × 1

### Type BT 25—25 V.D.C.W.

10	1 3/4 × 1 × 1
25	1 3/4 × 1 × 1
50	1 3/4 × 1 × 1

Cap. Mfd.	Replacement For	Size Dia. × Hght.
10	4 to 12 mfd.	1 3/8 × 3
20	16 to 20 mfd.	1 3/8 × 3
30	20 to 30 mfd.	1 3/8 × 3
40	30 to 40 mfd.	1 3/8 × 3

## UPRIGHT OR INVERTED MOUNTING CAPACITORS TYPE E

Popular hermetically sealed units widely used in high quality radio, electronic, communication and similar equipment. Can be mounted in any position with ring-type clamp provided with unit. Single or multiple elements. Two terminals on singles, three on dual, and 4 terminals on triple element units.



### Type E475 (Single Element) 475 V.D.C.W.—525 V. Surge Pk.

Cap. Mfda.	Can Size Dia. Hght.
4	1 3/8 × 2 1/4

### Type E450 (Single Element)

#### 450 V.D.C.W.—500 V. Surge Pk.

4	1 3/8 × 2 1/4
8	1 3/8 × 2 1/4
10	1 3/8 × 2 1/4
12	1 3/8 × 2 1/4
16	1 3/8 × 2 1/4
20	1 3/8 × 2 1/4
30	1 3/8 × 2 1/4
40	1 3/8 × 2 3/4
80	1 3/8 × 4 1/4

### Type E50 (Single Element)

#### 50 V.D.C.W.—75 V. Single Pk.

10	1 × 1 1/4
25	1 × 1 1/4

### Type E25 (Single Element)

#### 25 V.D.C.W.—40 V. Surge Pk.

10	1 × 1 1/4
25	1 × 1 1/4



### Type E450 (Dual Element)

#### 450 V.D.C.W.—500 V. Surge Pk.

8-8	1 3/8 × 2 1/4
8-16	1 3/8 × 2 1/4
10-10	1 3/8 × 2 1/4
12-12	1 3/8 × 2 1/4
16-16	1 3/8 × 2 3/4
20-20	1 3/8 × 2 3/4

### Type E450 (Triple Element)

8-8-8	1 3/8 × 2 1/4
10-10-10	1 3/8 × 2 1/4

## INSULATED SCREW- MOUNTING CAPACITORS TYPE G

Hermetically-sealed aluminum can unit used in best quality equipment. Top performance and construction. Has threaded cover with hex nut and washer for convenient mounting on chassis. Washer can be used to insulate can from chassis. Terminals molded in cover. Cathode connection through terminal in cover.



### Type G475 (Single Element)

#### 475 V.D.C.W.—525 V. Surge Pk.

Cap. Mfda.	Can Size Dia. Hght.
4	1 3/8 × 2 1/4
8	1 3/8 × 2 1/4

### Type G450 (Single Element)

#### 450 V.D.C.W.—500 V. Surge Pk.

4	1 3/8 × 2 1/4
8	1 3/8 × 2 1/4
10	1 3/8 × 2 1/4
12	1 3/8 × 2 1/4
16	1 3/8 × 2 1/4
20	1 3/8 × 2 1/4
30	1 3/8 × 2 1/4
40	1 3/8 × 2 3/4
80	1 3/8 × 4 1/4



### Type G450 (Dual Element)

8-8	1 3/8 × 2 1/4
8-16	1 3/8 × 2 1/4
10-10	1 3/8 × 2 1/4
12-12	1 3/8 × 2 1/4
16-16	1 3/8 × 2 3/4
20-20	1 3/8 × 2 3/4

# Paper Capacitors



## DURANITE\* MOLDED TUBULAR CAPACITORS

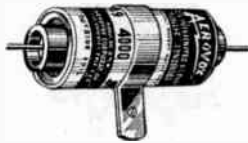


TYPE P88

Toughest capacitors ever offered for radio-electronic equipment. DURANITE capacitors are entirely new—in design, impregnant, processing and casing. New technique glove-fitting contact and seal throughout. DURANITE provides a permanent, non-varying, rock-hard casing, does not dry out, does not develop cracks or fissures. Pig-tail leads firmly imbedded, won't pull out, won't work loose. Moisture-proof; operate from sub-zero to over 212°F. Exposure to temperatures of 250°F. will not impair life or performance, no deterioration on the shelf.

Cap. Mfd.	SIZE: Diameter x Length				
	P288 200 VDCW	P488 400 VDCW	P688 600 VDCW	P1088 1000 VDCW	P1688 1600 VDCW
.001			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0015			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.002			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0022			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.003			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0033			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.004			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0047			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.005			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.006			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0068			1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.0075		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.01		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.015	1 1/4 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.02		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.022		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.025		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.03		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.033		1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.04	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.047	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.05	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.068	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.075	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.1	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.15	1 3/8 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.22		2	2	2	2
.25		2	2	2	2
.33	2	x	x	x	x
.47	2	x	x	x	x
.5	2	x	x	x	x

## OIL-FILLED TUBULARS TYPE 89



Immersion-proof, oil-impregnated, oil-filled units in handy, space-saving tubes. Ideal for vibrator applications, coupling and by-pass functions in transmitters, high-voltage and in test equipment. Fully sealed against oil leakage or moisture penetration. Case is insulated, not connected to the capacitor section. Supplied with mounting strap and outer insulating tube.

Cap. Mfd.	Diameter x Length	
	Type 489 400 VDCW	Type 639 600 VDCW
.001	1 1/4 x 1	1 1/4 x 1
.002	1 1/4 x 1	1 1/4 x 1
.003	1 1/4 x 1	1 1/4 x 1
.004	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1
.006	1 1/4 x 1	1 1/4 x 1
.0075	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1
.015	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1
.04	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1
.075	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1
.25	1 1/4 x 1	1 1/4 x 1
.5	1 1/4 x 1	1 1/4 x 1

Cap. Mfd.	Diameter x Length	
	Type 1089 1000 VDCW	Type 2089 2000 VDCW
.001	1 1/4 x 1	1 1/4 x 1
.002	1 1/4 x 1	1 1/4 x 1
.003	1 1/4 x 1	1 1/4 x 1
.004	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1
.006	1 1/4 x 1	1 1/4 x 1
.0075	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1
.015	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1
.04	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1
.075	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1
.25	1 1/4 x 1	1 1/4 x 1

## TUBULAR LO-VOLTAGE TYPE 84

Lo-voltage, type 84 units are wax-impregnated, wax-sealed capacitors in paper cases, used for non-critical applications such as in home and auto radio receivers where they perform satisfactorily. These capacitors are available with HYVOL H impregnation for operation at temperatures up to 85°C., and for lower voltages at higher than 85°C. For over 600 VDC, units are available with HYVOL M impregnation. Type 84 capacitors, with HYVOL M impregnation and at ratings less than 600 volts, are slightly larger than those listed. Sizes available upon request. Units are obtainable with a radial mounting band on request at extra cost.

Cap. Mfd.	Wax-Impregnated, Wax-Sealed Cardboard Tubular Capacitors	
	Type 484 400 VDCW	Type 684 600 VDCW
.001	1 1/4 x 1	1 1/4 x 1
.002	1 1/4 x 1	1 1/4 x 1
.003	1 1/4 x 1	1 1/4 x 1
.004	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1
.006	1 1/4 x 1	1 1/4 x 1
.0075	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1
.015	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1
.025	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1
.04	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1
.075	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1
.15	1 1/4 x 1	1 1/4 x 1
.2	1 1/4 x 1	1 1/4 x 1
.25	1 1/4 x 1	1 1/4 x 1
.5	1 1/4 x 1	1 1/4 x 1
1.0	1 1/4 x 1	1 1/4 x 1

Cap. Mfd.	Wax-Impregnated, Wax-Sealed Cardboard Tubular Capacitors	
	Type 1084 1000 VDCW	Type 1684 1600 VDCW
.001	1 1/4 x 1	1 1/4 x 1
.002	1 1/4 x 1	1 1/4 x 1
.003	1 1/4 x 1	1 1/4 x 1
.004	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1
.006	1 1/4 x 1	1 1/4 x 1
.0075	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1
.015	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1
.025	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1
.04	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1
.06	1 1/4 x 1	1 1/4 x 1
.075	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1
.15	1 1/4 x 1	1 1/4 x 1
.2	1 1/4 x 1	1 1/4 x 1
.25	1 1/4 x 1	1 1/4 x 1

## AEROCON\* MINIATURE CAPACITORS



TYPE P85

The new, tiny, Aerolene-impregnated tubular unit. DURANITE endfill excludes humidity. Designed especially for personal radios, hearing aids and electronics assemblies requiring good performance and minimum size.

Cap. Mfd.	SIZE: Diameter x Length			
	100 VDCW	200 VDCW	400 VDCW	600 VDCW
.00025				
.0005				
.001				
.0015				
.002				
.0022				
.003				
.0033				
.004				
.0047				
.005				
.006				
.0068				
.01				
.015				
.02				
.022				
.03				
.033				
.04				
.047				
.05				
.068				
.1				
.25	1 1/4 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.5	1 1/4 x 1 1/2	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1

Cap. Mfd.	Type 2589 2500 VDCW		Type 3089 3000 VDCW	
	.0005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.001	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1

Cap. Mfd.	Type 3589 3500 VDCW		Type 4089 4000 VDCW	
	.0005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.001	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1

Cap. Mfd.	Type 5089 5000 VDCW		Type 6089 6000 VDCW	
	.0005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.001	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.005	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.01	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.02	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.03	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.05	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1
.1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1	1 1/4 x 1

## COMPACT ENERGY- STORAGE CAPACITORS TYPE PX



For high-speed flash photography, flash signaling equipment, pulsing and other energy storage uses requiring extremely high currents during short, discharge periods. Compact, minimum weight, solder lug terminals, terne plate containers.

Type No.	VDC Peak	Nomin-1 Cap. Mfd.
PX1001	1500	20
50.0 Watt Seconds		
PX1403	2000	28
75.0 Watt Seconds		
PX1402	2500	21
PX1801	3000	16
100.0 Watt Seconds		
PX1501B	2500	30
PX2001	4000	12.5
SIZE: Length x Width x Height		
PX1001	2 1/4" x 3 3/8" x 4 5/8"	
PX1501B	3 1/4" x 3 3/8" x 4 5/8"	
ALL OTHERS	4 1/4" x 3 3/8" x 4 5/8"	



# Paper Capacitors

## COMPACT HYVOL\* CAPACITORS



**TYPE 16CT**

Compact, immersion-proof unit, of minimum size and weight. Corrosion-proof metal container. Special immersion-proof terminals for severe atmospheric and climatic conditions. Suitable for by-pass and filter applications in receivers and low-power transmitters. Type 16CT is standard, but Type 16CB (terminals on bottom) units also available. Dual units with can grounded, available on request.

**Type 416**  
400 VDCW

Cap. Mfda.	
.01	1 1/4"
.05	1 1/4"
.1	1 1/4"
.25	1 1/4"
.5	1 1/4"
1.0	2"

**Type 616**  
600 VDCW

.01	1 1/4"
.05	1 1/4"
.1	1 1/4"
.25	1 1/4"
.5	2"
1.0	2 1/2"

**Type 1016**  
1000 VDCW

.01	1 1/4"
.05	1 1/4"
.1	1 1/4"
.25	1 1/4"
.5	2"

Standard: Width 1 1/4", Depth 1 1/4"

## AEROVOX "HYVOL" VERTICAL-MOUNTING HIGH-VOLTAGE CAPACITORS



**Type 14**

Particularly applicable for high-voltage filter circuits such as cathode-ray tube power supplies and high-voltage by-pass circuits in transmitters and high-powered public address equipment. Standard 1 1/4" diameter, grounded can, with one-piece molded-bakelite pillar insulator to provide maximum spacing between live terminal and can. Mounting ring furnished for upright or inverted mounting.

**Type 2014**  
2000 VDCW

Cap. Mfda.	Hght. X Dia.
.01	2 1/4" x 1 1/4"
.05	2 1/4" x 1 1/4"
.1	2 1/4" x 1 1/4"
.25	3" x 1 1/4"

**Type 3014**  
3000 VDCW

.01	2 1/4" x 1 1/4"
.05	2 1/4" x 1 1/4"
.1	2 1/4" x 1 1/4"
.25	3" x 1 1/4"

\*Trade Mark.

## COMPACT HYVOL\* CAPACITORS



**TYPE 18CB**

Compact, immersion-proof unit, smaller in height and depth than Type 16. However, greater width makes Types 18 adaptable for applications where small-sized dual- and triple-element capacitors with three terminals are required. Different base sizes make units adaptable for duals and triples. Even on single sections, different base sizes make unit fit in particular applications where Type 16's do not fit. Type 18CB is standard, but Type 18CT (terminals on top) also available.

**Type 418**

400 VDCW—Single Element	
Cap. Mfda.	
.05	1
.1	1 1/4"
.25	1 1/2"
.5	1 1/2"
1.0	2"

400 VDCW—Dual Element

.05-.05	1
.1-.1	1 1/4"
.25-.25	1 1/2"
.5-.5	2"

400 VDCW—Triple Element

.05-.05-.05	1
.1-.1-.1	1 1/4"
.25-.25-.25	2"

**Type 618**

600 VDCW—Single Element	
Cap. Mfda.	
.05	1
.1	1 1/4"
.25	1 1/2"
.5	1 1/2"
1.0	2 1/2"

600 VDCW—Dual Element

.05-.05	1
.1-.1	1 1/4"
.25-.25	1 1/2"
.5-.5	2 1/2"

600 VDCW—Triple Element

.05-.05-.05	1 1/4"
.1-.1-.1	1 1/2"
.25-.25-.25	2 1/2"

**Type 1018**

1000 VDCW—Single Element	
Cap. Mfda.	
.05	1
.1	1 1/4"
.25	1 1/2"
.5	1 1/2"

1000 VDCW—Dual Element

.05-.05	1 1/4"
.1-.1	1 1/2"
.25-.25	1 1/2"

1000 VDCW—Triple Element

.05-.05-.05	1 1/4"
.1-.1-.1	1 1/2"

Standard: Width 1 1/4", Depth 1 1/4"

## AEROVOX HYVOL\*



**Type 09 (Basic)**



**Type 09MB (Mounting Bracket)**



**Type 09MS (Strap Mounting)**

### TYPE 09

Immersion-proof in sturdy rectangular metal can. High-voltage screw type pillar terminals fitted with soldering lugs. Use of "HYVOL" allows exceptionally compact size for capacity, working voltage, and safety factor. Intended for heavy-duty continuous service in transmitters, amplifiers, etc. Type MB bracket is supplied unless otherwise specified, except on units with base size 3 1/2" x 3 1/2" and 3 1/2" x 4 1/2" where Type MS bracket is supplied. MSB is available for all types upon request.

**Type 609—600 VDCW**

Cap. Mfda.	H. X W. X D.
.5	2 1/4" x 1 1/4" x 1 1/4"
1.0	2 1/4" x 1 1/4" x 1 1/4"
2.0	2 1/4" x 1 1/4" x 1 1/4"
3.0	3 1/4" x 2 1/4" x 1 1/4"
4.0	3 1/4" x 2 1/4" x 1 1/4"
5.0	4 1/4" x 2 1/4" x 1 1/4"
6.0	4 1/4" x 2 1/4" x 1 1/4"
8.0	3 1/4" x 3 1/4" x 1 1/4"
10.0	4 1/4" x 3 1/4" x 1 1/4"
12.0	4 1/4" x 3 1/4" x 1 1/4"
15.0	4 1/4" x 3 1/4" x 1 1/4"

**Type 1009—1000 VDCW**

.1	2 1/4" x 1 1/4" x 1 1/4"
.25	2 1/4" x 1 1/4" x 1 1/4"
1.0	2 1/4" x 1 1/4" x 1 1/4"
2.0	3 1/4" x 2 1/4" x 1 1/4"
3.0	3 1/4" x 2 1/4" x 1 1/4"
4.0	4 1/4" x 2 1/4" x 1 1/4"
5.0	4 1/4" x 2 1/4" x 1 1/4"
8.0	4 1/4" x 3 1/4" x 1 1/4"
10.0	4 1/4" x 3 1/4" x 1 1/4"
12.0	4 1/4" x 3 1/4" x 1 1/4"
15.0	4 1/4" x 3 1/4" x 1 1/4"

**Type 1509—1500 VDCW**

.5	2 1/4" x 1 1/4" x 1 1/4"
1.0	4 1/4" x 1 1/4" x 1 1/4"
2.0	4 1/4" x 2 1/4" x 1 1/4"
3.0	4 1/4" x 2 1/4" x 1 1/4"
4.0	4 1/4" x 3 1/4" x 1 1/4"
5.0	4 1/4" x 3 1/4" x 1 1/4"
6.0	4 1/4" x 3 1/4" x 1 1/4"
8.0	4 1/4" x 3 1/4" x 2 1/4"
10.0	4 1/4" x 3 1/4" x 2 1/4"
12.0	4 1/4" x 3 1/4" x 2 1/4"
15.0	4 1/4" x 3 1/4" x 2 1/4"

**Type 2009—2000 VDCW**

.1	2 1/4" x 1 1/4" x 1 1/4"
.25	2 1/4" x 1 1/4" x 1 1/4"
.5	2 1/4" x 1 1/4" x 1 1/4"
1.0	3 1/4" x 2 1/4" x 1 1/4"
2.0	4 1/4" x 3 1/4" x 1 1/4"
3.0	4 1/4" x 3 1/4" x 1 1/4"
4.0	4 1/4" x 3 1/4" x 1 1/4"
5.0	4 1/4" x 3 1/4" x 2 1/4"
6.0	4 1/4" x 3 1/4" x 2 1/4"
8.0	4 1/4" x 3 1/4" x 2 1/4"
10.0	4 1/4" x 3 1/4" x 2 1/4"
12.0	5 1/4" x 3 1/4" x 2 1/4"
15.0	6 1/4" x 3 1/4" x 2 1/4"

**Type 2509—2500 VDCW**

.5	3 1/2" x 2 1/2" x 1 1/4"
1.0	3 1/2" x 3 1/2" x 1 1/4"
2.0	4 1/2" x 3 1/2" x 1 1/4"
4.0	4 1/2" x 3 1/2" x 3 1/4"
10.0	6 1/2" x 3 1/2" x 4 1/4"

**Type 3009—3000 VDCW**

.1	2 x 2 1/2" x 1 1/4"
.25	2 1/2" x 2 1/2" x 1 1/4"
.5	3 1/2" x 2 1/2" x 1 1/4"
1.0	3 1/2" x 3 1/2" x 1 1/4"
2.0	4 1/2" x 3 1/2" x 3 1/4"
4.0	4 1/2" x 3 1/2" x 4 1/4"

**Type 4009—4000 VDCW**

.1	2 1/2" x 3 1/2" x 2 1/4"
.25	2 1/2" x 3 1/2" x 2 1/4"
.5	3 1/2" x 3 1/2" x 2 1/4"
1.0	5 1/2" x 3 1/2" x 2 1/4"
2.0	5 1/2" x 3 1/2" x 4 1/4"
4.0	8 x 3 1/2" x 4 1/4"

**Type 5009—5000 VDCW**

.1	2 1/2" x 3 1/2" x 2 1/4"
.25	3 1/2" x 3 1/2" x 2 1/4"
.5	4 1/2" x 3 1/2" x 2 1/4"
1.0	4 1/2" x 3 1/2" x 4 1/4"
2.0	6 x 3 1/2" x 4 1/4"

**Type 6009—6000 VDCW**

.1	3 1/2" x 3 1/2" x 2 1/4"
.25	4 1/2" x 3 1/2" x 2 1/4"
.5	4 1/2" x 3 1/2" x 4 1/4"
1.0	8 x 3 1/2" x 4 1/4"

**Type 7509—7500 VDCW**

.1	3 1/2" x 3 1/2" x 2 1/4"
.25	5 1/2" x 3 1/2" x 2 1/4"
.5	5 1/2" x 3 1/2" x 4 1/4"

# Paper Capacitors



## AEROVOX "HYVOL" VERTICAL-MOUNTING HIGH-VOLTAGE CAPACITORS OIL-IMPREGNATED OIL-FILLED TYPE 12



High-voltage, inverted or vertical, immersion-proof unit suitable for such high-voltage circuit applications as in television, cathode-ray tube power supplies, high-voltage rectifiers, or as a high-voltage by-pass capacitor. Recommended where long leakage path between terminals is required. Barrier in bakelite top increases insulation and creepage path between terminals. For certain applications, ceramic insulators may be removed if desired. Mounting ring furnished for upright or inverted mounting.

Barrier in bakelite top increases insulation and creepage path between terminals. For certain applications, ceramic insulators may be removed if desired. Mounting ring furnished for upright or inverted mounting.

Type 2012—2000 VDCW		
Cap. Mfd.	Hght. X Dia.	
1.0	3 3/4 x 2 3/4	
2.0	5 1/4 x 2 3/4	
Type 3012—3000 VDCW		
.05	2 3/4 x 2 3/4	
.1	2 3/4 x 2 3/4	
.25	3 3/4 x 2 3/4	
.5	3 3/4 x 2 3/4	
1.0	5 1/4 x 2 3/4	
Type 4012—4000 VDCW		
.05	2 3/4 x 2 3/4	
.1	3 3/4 x 2 3/4	
.25	5 1/4 x 2 3/4	
Type 6012—6000 VDCW		
.03	2 3/4 x 2 3/4	
.05	3 3/4 x 2 3/4	
.1	4 3/4 x 2 3/4	
Type 7512—7500 VDCW		
.01	3 3/4 x 2 3/4	
.02	3 3/4 x 2 3/4	
.03	3 3/4 x 2 3/4	
.05	4 3/4 x 2 3/4	
.1	4 3/4 x 2 3/4	

## AEROVOX HYVOL\* OIL-IMPREGNATED OIL-FILLED CAPACITORS In Round Aluminum Cans —Inverted Mounting TYPE 10



New immersion-proof unit, physically interchangeable with the old single terminal type unit. In round aluminum can-inverted mounting. Ideal for crowded assemblies; especially in filter circuits of power supplies, high-gain high-fidelity amplifiers and small transmitters. One piece molded bakelite terminal assembly. Both terminal lugs insulated from container.

Type 610—600 VDCW		
Cap. Mfd.	Hght. X Dia.	
2.0	2 3/4 x 1 1/4	
4.0	4 3/4 x 1 1/4	
Type 1010—1000 VDCW		
1.0	2 3/4 x 1 1/4	
2.0	4 3/4 x 1 1/4	
Type 1510—1500 VDCW		
.5	2 3/4 x 1 1/4	
1.0	4 3/4 x 1 1/4	

\*Trade Mark.

## BATHTUB CASE HYVOL\* CAPACITORS TYPE 30



A compact superior-grade oil-impregnated, oil-filled, drawn-metal case capacitors. Hermetically sealed, immersion-proof. Built for severe operating conditions as in aircraft, police, broadcast, public address and other types of communications equipment. They are standard capacitors in Governmental radio and electrical apparatus. The AeroVox-designed terminals are constructed with "double rubber" bakelite\* insulators permanently riveted to the case, and make a sturdy, absolutely immersion-proof assembly.

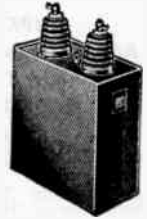
\*Rubber or a suitable gasket material depending on the impregnant used and the operating conditions.

Type 430—400 VDCW Single Element			
Cap. Mfd.	L. X W. X H.		
.05	1 1/2 x 1	x	3/8
.1	1 3/4 x 1	x	3/8
.25	1 3/4 x 1	x	3/8
.5	1 3/4 x 1	x	3/8
.75	2 x 1 1/4	x	3/8
1.0	2 x 1 1/4	x	3/8
2.0	2 x 2	x	1
Dual Element			
.05-.05	1 1/2 x 1	x	3/8
.1-.1	1 3/4 x 1	x	3/8
.25-.25	1 3/4 x 1	x	3/8
.5-.5	2 x 1 1/4	x	3/8
1.0-1.0	2 x 2	x	1
Triple Element			
.05-.05-.05	1 1/2 x 1	x	3/8
.1-.1-.1	1 3/4 x 1	x	3/8
.25-.25-.25	2 x 1 1/4	x	3/8
Type 630—600 VDCW Single Element			
.05	1 1/2 x 1	x	3/8
.1	1 3/4 x 1	x	3/8
.25	1 3/4 x 1	x	3/8
.5	1 3/4 x 1	x	3/8
.75	2 x 1 1/4	x	3/8
1.0	2 x 2	x	1
Dual Element			
.05-.05	1 1/2 x 1	x	3/8
.1-.1	1 3/4 x 1	x	3/8
.25-.25	1 3/4 x 1	x	3/8
.5-.5	2 x 1 1/4	x	3/8
1.0-1.0	2 x 2	x	1
Triple Element			
.05-.05-.05	1 1/2 x 1	x	3/8
.1-.1-.1	1 3/4 x 1	x	3/8
.25-.25-.25	2 x 1 1/4	x	3/8
Type 10301000 VDCW Single Element			
.05	1 1/2 x 1	x	3/8
.1	1 3/4 x 1	x	3/8
.25	1 3/4 x 1	x	3/8
.5	2 x 1 1/4	x	3/8
.75	2 x 1 1/4	x	3/8
1.0	2 x 2	x	1
Dual Element			
.05-.05	1 1/2 x 1	x	3/8
.1-.1	1 3/4 x 1	x	3/8
.25-.25	1 3/4 x 1	x	3/8
.5-.5	2 x 1 1/4	x	3/8
Triple Element			
.05-.05-.05	1 1/2 x 1	x	3/8
.1-.1-.1	1 3/4 x 1	x	3/8
.25-.25-.25	2 x 1 1/4	x	3/8

SEE PAGE P-52  
TELEVISION  
PAPER  
CAPACITOR  
LISTING  
FOR OTHER PAPER  
TUBULAR CAPACITORS  
SEE PAGE P-55

## HIGH VOLTAGE TRANSMITTER CAPACITORS

### TYPE 20



High quality oil-capacitors designed to meet the exacting service requirements of communications and electronic equipment, and general DC applications in industrial equipment. Single capacitors or parallel grouped capacitors available in ratings from 6000 to 50,000 VDCW. These units consist of precision wound, adequately insulated sections connected in parallel and assembled in heavy, welded copper bearing steel tanks, designed to expand or contract with changes in temperature. Finished in long lasting dark grey lacquer. Heavy duty, wet process porcelain insulator assemblies are gasketed, pressure sealed, and oil-filled to prevent internal creepage and corona. The assembled units are heat vacuum dried, vacuum impregnated with AeroVox Hyvol and hermetically sealed for long life under exacting operating conditions. Single units rated at 80 KV or less are normally supplied with the capacitor element insulated from ground. Type 20 units not carried in stock but are built to order. Submit full application information when ordering.

Type 6020—6000 VDCW		
Cap. Mfd.	H. X W. X D.	
2.0	11 x 8 x 4	
4.0	11 x 12 x 4	
5.0	11 x 12 x 4	
6.0	13 x 12 x 4	
10.0	18 x 12 x 6	
Type 7520—7500 VDCW		
.5	11 x 8 x 4	
1.0	11 x 8 x 4	
2.0	11 x 8 x 4	
4.0	18 x 12 x 4	
6.0	18 x 12 x 6	
Type 10020—10,000 VDCW		
1.0	11 x 8 x 4	
2.0	11 x 12 x 4	
4.0	18 x 12 x 6	
5.0	18 x 12 x 6	
Type 12520—12,500 VDCW		
.5	11 x 8 x 4	
1.0	11 x 12 x 4	
2.0	18 x 12 x 6	
5.0	18 x 12 x 9 1/2	
Type 15020—15,000 VDCW		
.25	11 x 8 x 4	
.5	11 x 12 x 4	
1.0	18 x 12 x 4	
2.0	16 x 12 x 9 1/2	
3.0	16 x 12 x 9 1/2	
Type 20020—20,000 VDCW		
Cap. Mfd.	H. X W. X D.	
.25	11 x 8 x 4	
.5	11 x 12 x 4	
1.0	13 x 12 x 6	
1.5	15 x 12 x 9 1/2	
2.0	15 x 12 x 9 1/2	
4.0	15 x 14 x 16	
Type 25020—25,000 VDCW		
.2	11 x 12 x 4	
.25	11 x 12 x 4	
.5	11 x 12 x 6	
1.0	16 x 12 x 9 1/2	
Type 37520—37,500 VDCW		
.1	18 x 18 1/2 x 4	
.25	18 x 18 1/2 x 6	
.5	16 x 18 1/2 x 8 1/2	
1.0	16 x 18 1/2 x 16	
Type 50020—50,000 VDCW		
.1	18 x 18 1/2 x 4	
.25	16 x 18 1/2 x 8 1/2	
.5	16 x 16 1/2 x 16	
Type 12520 VD 25,000 Volts Output (12,500 — 12,500 Volts) Dual Units (For Voltage-Doubler Circuits)		
0.25-0.25	11 x 8 x 4	
0.5-0.5	11 x 12 x 4	

## AEROVOX HYVOL\* TYPE 05



Hermetically sealed, round metal can unit. High-voltage pillar terminals. Very conservative ratings for continuous operation. Mounting ring furnished for upright or inverted mounting.

Type 605—600 VDCW		
Cap. Mfd.	Dia. X Hght.	
1.0	2 x 2	
2.0	2 x 2	
4.0	2 x 2 1/2	

Type 1005—1000 VDCW		
Cap. Mfd.	Dia. X Hght.	
1.0	2 x 2	
2.0	2 x 2 1/2	
4.0	2 x 3	
Type 1505—1500 VDCW		
1.0	2 x 2 3/8	
2.0	2 x 3 5/8	
4.0	2 1/2 x 4	
Type 2005—2000 VDCW		
1.0	2 x 2 3/4	
2.0	2 x 4 1/2	
4.0	3 x 4	
Type 2505—2500 VDCW		
1.0	2 1/2 x 3	
2.0	2 1/2 x 4 1/2	
Type 3005—3000 VDCW		
1.0	2 1/2 x 4 1/2	
2.0	3 x 4 1/2	



# Metallized Papers

## TYPE P82 AEROLITE METALLIZED- PAPER TUBULAR CAPACITORS



Tiny Aerolite Metallized-Paper tubular units. Hyvol K impregnated, in moisture resistant wax impregnated cardboard cases. Up to 78% reduction in size over equivalent paper foil units, also corresponding reduction in weight. Power factor less than 1%. Std. tolerance  $\pm 20\%$ .

Cap. Mfd.	Size
.01	$\frac{3}{8} \times \frac{5}{8}$
.02	$\frac{3}{8} \times \frac{5}{8}$
.03	$\frac{3}{8} \times \frac{5}{8}$
.05	$\frac{3}{8} \times \frac{5}{8}$
.1	$\frac{3}{8} \times \frac{5}{8}$
.25	$\frac{3}{8} \times \frac{5}{8}$
.5	$\frac{3}{8} \times \frac{5}{8}$
1.0	$\frac{3}{8} \times \frac{5}{8}$
2.0	$\frac{3}{8} \times \frac{5}{8}$

Cap. Mfd.	Size
.01	$\frac{3}{8} \times \frac{5}{8}$
.02	$\frac{3}{8} \times \frac{5}{8}$
.03	$\frac{3}{8} \times \frac{5}{8}$
.05	$\frac{3}{8} \times \frac{5}{8}$
.1	$\frac{3}{8} \times \frac{5}{8}$
.25	$\frac{3}{8} \times \frac{5}{8}$
.5	$\frac{3}{8} \times \frac{5}{8}$
1.0	$\frac{3}{8} \times \frac{5}{8}$

Cap. Mfd.	Size
.01	$\frac{3}{8} \times \frac{5}{8}$
.02	$\frac{3}{8} \times \frac{5}{8}$
.03	$\frac{3}{8} \times \frac{5}{8}$
.05	$\frac{3}{8} \times \frac{5}{8}$
.1	$\frac{3}{8} \times \frac{5}{8}$
.25	$\frac{3}{8} \times \frac{5}{8}$
.5	$\frac{3}{8} \times \frac{5}{8}$
1.0	$\frac{3}{8} \times \frac{5}{8}$

## TYPE 89ZXY METALLIZED-PAPER CAPACITORS



Tubular Aerolites in hermetically-sealed, metal cases. Hyvol K or M impregnated. Unique self-healing feature and Aerovox service-proven, double rubber bakelite terminal seals. Ideal for extreme conditions and hard use. Meets JAN moisture, emersion and vibration test requirements. Available with insulating cardboard or plastic sleeve and with mounting bracket. Std. Tolerance  $\pm 20\%$ . See footnotes below table.

150 V.D.C.		400 V.D.C.	
Cap. Mfd.	Size	Cap. Mfd.	Size
3.0	$\frac{3}{8} \times 2$	.5	$\frac{3}{8} \times 2$
4.0	$1 \frac{1}{8} \times 2$	1.0	$\frac{3}{8} \times 2 \frac{1}{2}$
6.0	$1 \frac{1}{8} \times 2$	2.0	$1 \frac{1}{8} \times 2 \frac{1}{2}$

200 V.D.C.		600 V.D.C.	
Cap. Mfd.	Size	Cap. Mfd.	Size
.05	$\frac{3}{8} \times 1$	.01	$\frac{3}{8} \times 1$
.1	$\frac{3}{8} \times 1$	.02	$\frac{3}{8} \times 1$
.25	$\frac{3}{8} \times 1$	.03	$\frac{3}{8} \times 1$
.5	$\frac{3}{8} \times 1 \frac{1}{2}$	.05	$\frac{3}{8} \times 1$
1.0	$\frac{3}{8} \times 1 \frac{1}{2}$	.1	$\frac{3}{8} \times 1 \frac{1}{2}$
2.0	$\frac{3}{8} \times 2$	.25	$\frac{3}{8} \times 1 \frac{1}{2}$

400 V.D.C.		1.0 V.D.C.	
Cap. Mfd.	Size	Cap. Mfd.	Size
.03	$\frac{3}{8} \times 1$	.5	$\frac{3}{8} \times 2$
.05	$\frac{3}{8} \times 1$	1.0	$\frac{3}{8} \times 2 \frac{1}{2}$
.1	$\frac{3}{8} \times 1 \frac{1}{2}$	2.0	$1 \frac{1}{8} \times 2 \frac{1}{2}$
.25	$\frac{3}{8} \times 1 \frac{1}{2}$		

Sizes shown are floating case without insulating tube.  
 NOTE: For grounded section, insulated case, deduct  $\frac{1}{8}$ " from lengths specified above and add G to type designation; (Example 89ZGXY). For plastic insulating tube, add  $\frac{1}{8}$ " to length and  $\frac{1}{8}$ " to diameter and replace Y type designation with P. (Example 89ZXP). For cardboard insulating tube, add  $\frac{1}{8}$ " to diameter and  $\frac{1}{8}$ " to length and omit Y in type designation. (Example 89ZX). For mounting bracket, omit X in type designation. (Example 89ZY).

## TYPE P83Z MICROMINIATURES



Ultra-small, new metallized-dielectric capacitor particularly applicable in the electronic field to replace the low capacity paper units now being used. Hyvol K impregnated in humidity resistant molded thermo-plastic cases. The improved metallized dielectric provides both the dielectric and the electrodes. Capacitance is predetermined mechanically in the initial processing.

Standard Tolerance 25%

Cap.	Volt
.0005	600
.001	600
.002	400
.003	400
.005	200
.01	200
.04	200

Cap.	Volt
.002	600
.0022	600
.0047	600
.005	600
.0068	600
.01	400

## AEROLITE TYPE P30Z METALLIZED-PAPER CAPACITORS



Aerolite Metallized-Paper capacitors. Hyvol K or M impregnated in bathtub, hermetically sealed metal cases. Photo shows terminals in standard position. Units with terminals in other positions or with stud-nut terminals are available on special order. Meets rigid JAN requirements for moisture immersion and vibration testing. Std. Tolerance  $\pm 20\%$ .

Cap. Mfd.	Volts	Size
.6	200	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
1.0	200	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
2.0	200	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
4.0	150	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
6.0	150	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
8.0	150	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
10.0	150	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
12.0	150	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
.25	400	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
.5	400	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
1.0	400	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
2.0	400	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
4.0	400	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
.1	600	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
.25	600	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
.5	600	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
1.0	600	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$
2.0	600	$1 \frac{1}{8} \times 1 \frac{1}{8} \times \frac{3}{8}$

## TYPE P123ZG ULTRA-COMPACT METALLIZED-PAPER CAPACITORS



Ultra-compact, tiny capacitors in hermetically-sealed, metal cases. Bonded glass to metal terminal construction to minimize size. This is the smallest unit available. Similar to the 89ZXY except tinier. Ideal for military and aircraft applications where minimum size and weight with maximum durability is rigidly specified. Can be supplied with Plastic insulating tubes. Std. Tolerance  $\pm 20\%$ .

Cap. Mfd.	Volts	Size	Cap. Mfd.	Volts	Size
.0005	200	$.175 \times \frac{1}{8}$	.050	400	$.400 \times \frac{1}{8}$
.001	200	$.175 \times \frac{1}{8}$	.068	400	$.400 \times 1 \frac{1}{8}$
.002	200	$.175 \times \frac{1}{8}$	.10	400	$.400 \times 1 \frac{1}{8}$
.003	200	$.175 \times \frac{1}{8}$	.15	400	$.500 \times 1 \frac{1}{8}$
.005	200	$.175 \times \frac{1}{8}$	.2	400	$.500 \times 1 \frac{1}{8}$
.01	200	$.175 \times \frac{1}{8}$	.22	400	$.562 \times 1 \frac{1}{8}$
.047	200	$.235 \times \frac{3}{8}$	.25	400	$.562 \times 1 \frac{1}{8}$
.050	200	$.235 \times \frac{3}{8}$	.33	400	$.562 \times 1 \frac{1}{8}$
.068	200	$.312 \times \frac{3}{8}$	.47	400	$.562 \times 1 \frac{1}{8}$
.10	200	$.312 \times \frac{3}{8}$	.50	400	$.670 \times 1 \frac{1}{8}$
.15	200	$.312 \times 1 \frac{1}{8}$	.68	400	$.670 \times 1 \frac{1}{8}$
.2	200	$.312 \times 1 \frac{1}{8}$	1.0	400	$.470 \times 2 \frac{1}{8}$
.22	200	$.312 \times 1 \frac{1}{8}$	.01	600	$.312 \times \frac{3}{8}$
.25	200	$.312 \times 1 \frac{1}{8}$	.015	600	$.312 \times \frac{3}{8}$
.33	200	$.400 \times 1 \frac{1}{8}$	.02	600	$.312 \times \frac{3}{8}$
.47	200	$.400 \times 1 \frac{1}{8}$	.022	600	$.312 \times \frac{3}{8}$
.50	200	$.400 \times 1 \frac{1}{8}$	.033	600	$.400 \times \frac{3}{8}$
.68	200	$.562 \times 1 \frac{1}{8}$	.040	600	$.400 \times \frac{3}{8}$
1.0	200	$.562 \times 1 \frac{1}{8}$	.047	600	$.400 \times \frac{3}{8}$
1.5	200	$.562 \times 1 \frac{1}{8}$	.050	600	$.400 \times \frac{3}{8}$
2.0	200	$.562 \times 1 \frac{1}{8}$	.068	600	$.400 \times 1 \frac{1}{8}$
.0005	400	$.235 \times \frac{1}{8}$	.10	600	$.500 \times 1 \frac{1}{8}$
.001	400	$.235 \times \frac{1}{8}$	.15	600	$.500 \times 1 \frac{1}{8}$
.002	400	$.235 \times \frac{1}{8}$	.2	600	$.562 \times 1 \frac{1}{8}$
.003	400	$.235 \times \frac{1}{8}$	.22	600	$.562 \times 1 \frac{1}{8}$
.02	400	$.235 \times \frac{3}{8}$	.25	600	$.562 \times 1 \frac{1}{8}$
.022	400	$.312 \times \frac{3}{8}$	.47	600	$.670 \times 1 \frac{1}{8}$
.033	400	$.312 \times \frac{3}{8}$	.50	600	$.670 \times 1 \frac{1}{8}$
.040	400	$.312 \times \frac{3}{8}$	.68	600	$.670 \times 1 \frac{1}{8}$
.047	400	$.400 \times \frac{3}{8}$	1.0	600	$.750 \times 2 \frac{1}{8}$

## METALLIZED-PAPER CAPACITORS CHARACTERISTICS

Stable characteristics and high safety factor are designed into Aerolite capacitors.

Over voltage tests at 25°C, maximum time one minute.

Insulation resistance measured at or referred to 25°C, will equal or exceed values below, after applying rated voltage or 500 V.D.C. (whichever is lower) for two minutes.

Rated Voltage	Over Voltage Test	Voltage Rating V.D.C.	Capacitance	Insulation Resistance
150	225	200	2.5 mfd. or less	500 megohms x mfd. or 1500* megohms
200	300	150	3.0 mfd. or more	250 megohms x mfd.
400	600	400	all capacities	1000 megohms x mfd. or 3000* megohms
600	900	600	all capacities	1000 megohms x mfd. or 3000* megohms

\* Need not exceed values shown above.

# Ceramic Capacitors



## HI-Q DISK CAPACITORS



Hi-Q Disc Ceramic Capacitors are high dielectric by-pass, blocking or coupling capacitors. In many instances, their geometrical shape is more adaptable to space saving than are tubulars for comparable capacity. Multiple capacities can be fabricated on a single disc and serve to eliminate two or more conventional units.

Characteristics of the basic dielectric material are identical to those of Hi-Q BC Capacitors. The well-proven Durez and high temperature micro crystalline wax coating insures the utmost protection from moisture and high humidities. The high silver content electrodes, fired directly to the low loss dielectric, make noiseless performance a certainty.

Leads are pure dead soft copper, tin coated to provide good soldering connections and so placed that close connections are easily made, thus reducing inductance to a minimum, a highly desirable feature in high frequency design such as television and FM circuits.

Type	A Diameter Max.	B Lead Width
BPD .00047	5/16"	1/8" ± 1/32"
BPD .0008	5/16"	1/8" ± 1/32"
BPD .001	5/16"	1/8" ± 1/32"
BPD .0015	5/16"	1/8" ± 1/32"
BPD .002	5/16"	1/8" ± 1/32"
BPD .004	3/8"	1/4" ± 1/16"
BPD .005	3/8"	1/4" ± 1/16"
BPD .01	3/8"	1/4" ± 1/16"
BPD 2 x .001	3/8"	1/4" ± 1/16"
BPD 2 x .0015	3/8"	1/4" ± 1/16"
BPD 2 x .002	3/8"	1/4" ± 1/16"
BPD 2 x .003	3/8"	1/4" ± 1/16"
BPD 2 x .004	3/8"	1/4" ± 1/16"
BPD 2 x .0015	3/8"	1/4" ± 1/16"
BPD 2 x .002	3/8"	1/4" ± 1/16"

## HI-Q ZERO TEMPERATURE COEFFICIENT CAPACITORS

The temperature coefficient of ceramic capacitors is an inherent characteristic of the ceramic body. By controlling this coefficient, the use of ceramics has been extended to countless applications in the electronic and communications fields. Temperature coefficient is determined by the ceramic mix and therefore certain tolerances are standardized. Following is a list of standard recommended tolerances used in this listing:

Temp. Coef.	Tolerance—PPM
NPO	±30
NO80	±30
N750	±100

The tolerances shown are maximum deviation. The actual average temperature coefficient usually runs close to nominal.

### NPO TYPE SI

The zero temperature coefficient is the most stable ceramic commercial capacitor available. The type SI is a tubular ceramic insulated with a synthetic coating (Durez) and impregnated with a high-melting point, Low-loss, microcrystalline wax.

## HI-Q HIGH VOLTAGE CERAMIC CAPACITORS TYPE HV



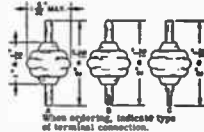
The new type HV ceramic is built to handle high voltages at high humidity and temperatures. It has a high potential electrode design and a newly developed plastic jacket which has exceptional arc resistant qualities. The silver electrodes are fired to the base and are integrally soldered to the silvered brass terminals for positive contact.

Type HV units provide an excellent working parameter when used with the new horizontal output transformer design. Combining high voltage, small size, and three types of terminal connections, HV units will fit virtually any high voltage or television application.

### LISTING

Cat. No.	Cap. Mmf.	VDC
HV10	500	10,000
HV20	500	20,000

Tolerance: ±20%  
Power Factor: 2% max.  
Insulation Resistance: 50,000 megohms  
Flash Tests: 27,000 VDC



### NOTES

Insulation: Durez and Wax impregnated.  
Leads: 22 gauge pure tinned dead soft copper 1 1/2" long except for the 1/8" dia. units which are 1 1/4" long.  
Capacity: Guaranteed minimum as stamped.  
All capacitance measurements made at 25°C at 1KC and at a test voltage not over 5 volts RMS.  
Insulation Resistance: 7500 megohms min.  
Power Factor: 2.5% at 1 KC at not over 5 volts RMS.  
Test Voltage: 1500 volts D.C.

### Zero Temperature Coefficient Capacitors

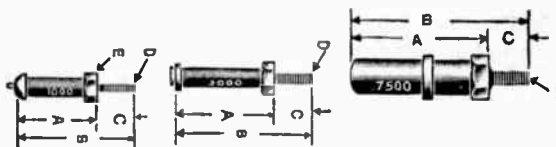
Type NPO		Mmf.	
SI-1	1.5	SI-1	20
SI-1	3.0	SI-13	25
SI-1	3.3	SI-2	33
SI-1	4.7	SI-27	50
SI-1	5.0	SI-7	75
SI-1	6.8	SI-7	100
SI-1	8.2	SI-3	150
SI-1	10	SI-4	175

### Negative Temperature Coefficient Capacitors

Type N750		Type NO80	
Mmf.		Mmf.	
SI-1	5	SI-1	10
SI-1	10	SI-1	22
SI-27	47	SI-2	33
SI-7	75	SI-27	47
SI-7	100	SI-7	62

When ordering the above units, designate type and MMFD fully. For example: NPOSI-1-1.5 MMFD.

## HI-Q STAND-OFF CAPACITORS



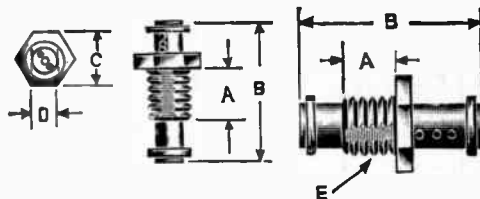
Hi-Q "stand-off" capacitors are tubular with a screw fixture for mounting to the chassis or common ground. Close coupling and their unique construction make them an excellent choice for bypassing R.F. in the high frequencies.

The multiple tapped model is a compact, bypassing unit when mounted next to tube sockets. Three capacities can be supplied as one unit, with capacity ranges available up to 2000 MMF per section. When fewer than three taps are required, it is possible to obtain higher capacities. Standard capacity tolerance is ±20% and GMV for "stand-off" capacitors and -20%, +30% and GMV for multiple tap units. Closer tolerances are available on the lower capacity units wherever economical manufacturing permits.

All units are flash tested for 1000 V.D.C., power factor is under 3% maximum and the insulation resistance is above 7500 megohms. All units are coated with a polymerized high temperature enamel, stamped for capacity and supplied with a nut, if desired. Leads are 20 gauge and a minimum of 1 1/2" long for CS units and 1 1/4" for CIS units.

Type	Cap. MMF.	Dimensions — inches			Thread D	Across Flats E in.
CI-1	50	1 1/2	1	1 1/2	# 4-40	3/4
	100					
	500					
	1000					
1500						
CS-2	8000	1 1/2	1 1/2	1 1/2	# 4-40	3/4
CS-3	4000	1 1/2	1 1/2	1 1/2	# 4-40	3/4
CS-4	7500	1 1/2	1 1/2	1 1/2	# 6-32	3/4
CIS-1	50	%	%	%	# 6-32	3/4
	100					
	500					
CIS-2	1000	%	1 1/2	%	# 6-32	3/4
	1500					

## HI-Q FEED-THRU CAPACITORS



Hi-Q Feed-Thru Capacitors provide means to transmit thru shields or ground potentials and simultaneously by-pass unwanted frequencies. A good mechanical connection is provided by the silver-plated bushing. These are excellent dependable units even under severe mechanical vibrations as in aircraft, missiles and automotive requirements.

The minimum standard tolerance for feed-thru capacitors is ±20%. All units are flash tested at 1000 volts D.C.

Type	Cap. MMF.	Dimensions — inches				Thread E
CF-1	1500	1 1/2	1 1/2	1 1/2	1 1/2	1/2-28
CF-2	3000	1 1/2	1 1/2	1 1/2	1 1/2	3/8-24
CF-3	4000	1 1/2	1 1/2	1 1/2	1 1/2	3/8-24
CF-4	7000	1 1/2	1 1/2	1 1/2	1 1/2	3/8-24
CFS-1	1500	1 1/2	1 1/2	1 1/2	1 1/2	1/2-28

CF-1 not illustrated  
Tolerance ±20%





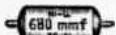
# Ceramic Capacitors

## HI-Q TUBULAR CERAMIC CAPACITORS

**STYLE SI:** Style SI provides a radial lead unit for applications requiring an insulated capacitor. Performance is comparable to that of insulated capacitors manufactured in accordance with JAN and REC specifications.

**STYLE CI:** Tubular ceramic capacitors, in three standard sizes, insulated with a ceramic (Steatite) cover-tube sealed with a special end seal which allows the wax, vacuum impregnant to enter and thoroughly fill all voids inside the cover tube. Axial leads in three sizes to meet all requirements of the JAN C20A specifications for insulated capacitors.

**STYLE CN:** Style CN is not listed but is available. It identifies the non-insulated tubular ceramic capacitors as established by the Armed Services Electronics Standards Agency (JAN C20A) and (RMA, REC107) specifications. This style capacitor has radial leads and is coated with a high moisture proof, low factor, non-hygroscopic styrene resin.



CI-1



CI-2



CI-3

Capacity in MMFD.	Type	Max. Dimensions	Type	Max. Dimensions	Capacity in MMFD.
5	SI-1	.234 x .437	CI-1	.250 x .562	5
10	↑	↑	↑	↑	10
12					12
15					15
18					18
20					20
22	↓	↓	↓	↓	22
24					24
25					25
27					27
30					30
33	↓	↓	↓	↓	33
39					39
47					47
50					50
51					51
56	↓	↓	↓	↓	56
68					68
75					75
82					82
100					100
110	↑	↑	↑	↑	110
120					120
150					150
180					180
200					200
220	↓	↓	↓	↓	220
240					240
250					250
270					270
300					300
330	↓	↓	↓	↓	330
360					360
390					390
470					470
500					500
510	↓	↓	↓	↓	510
560					560
680					680
750					750
1000					1000
1200	SI-2	.234 x .687	CI-2	.250 x .812	1200
1500	"	"	"	"	1500
1800	"	"	"	"	1800
2000	"	"	"	"	2000
2200	SI-7	.275 x .875	CI-3	.340 x 1.320	2200
2400	"	"	"	"	2400
2500	"	"	"	"	2500
2700	SI-2GMV	.234 x .687	"	"	2700
3000	SI-19	.312 x .937	"	"	3000
3300	"	"	"	"	3300
4000	"	"	"	"	4000
4700	SI-7GMV	.275 x .875	CI-3	.340 x 1.320	4700
5000	SI-3	.312 x 1.25	"	"	5000
5100	"	"	"	"	5100
6000	"	"	"	"	6000
6800	SI-4	.375 x 1.093	"	"	6800
7500	"	"	"	"	7500
10000	SI-5	.375 x 1.600	"	"	10000
15000	SI-6	.375 x 1.968	"	"	15000
17500	"	"	"	"	17500
20000	SI-5GMV	.375 x 1.600	"	"	20000
25000	SI-5GMV	"	"	"	25000
30000	SI-6GMV	.375 x 1.968	"	"	30000
33000	SI-6GMV	"	"	"	33000

CN types, non insulated are available in the same capacities as SI's.

Types SI and CI, std. tol. ± 20

Aerovox capacitors are available in JAN size and will meet all the requirements of the applicable JAN specs. Order by JAN type No.

CN-1	SI-1
CN-13	SI-13
CN-2	SI-2
CN-27	SI-27
CN-7	SI-7
CN-19	SI-19
CN-3	SI-3
CN-4	SI-4
CN-5	SI-5
CN-6	SI-6

# Interference Filters



## TYPE IN-23



Especially used for neon sign fixtures. Convenient mounting bracket. One filter for each fixture. Flexible leads. Also used on small motors. Size: 1 x 2 1/4 inches.

## TYPE IN-27



Simple, inexpensive, plug-in unit where interference is slight. Size: 1 1/2 x 1 1/2 inches.

## TYPE IN-28



For use where ground is at considerable distance. Most efficient when mounted on appliance. Bracket supplied. Size: 1 3/8 x 2 inches.

## TYPE IN-29

Efficient plug-in unit for local noise sources of variable character but strong intensity. Especially suited for shavers and other vibrating devices. Size: 1 1/2 x 8 inches.

## TYPE IN-30



Similar to IN-20 but with greater inductance to handle more severe noise interference. Size: 1 1/2 x 8 inches.

## TYPE IN-31



Bracket mounted unit with high inductance. Size: 1 1/2 x 8 inches.

## TYPE IN-42



Heavy duty unit for serious interference from power transmission lines, etc. Plugs into outlet. Appliance or radio plugs into receptacle in filter. Mounting ring provided. Rating: 110/220 v. A.C.; 6 amps. Size: 2 1/2" dia. x 8 3/4".

## TYPE IN-104



Small, inexpensive filter unit of low impedance, delta-connected capacitors. Connect one unit for each fluorescent light fixture or across line leads every eight feet in core lighting. Tubular with single hole mounting bracket. 6" stranded wire insulated leads. Can common for grounding. Rating: 125 v. AC or DC. Size: 1" dia. x 2 1/2".

## TYPE IN-105



Same as IN-104 except container is bathtub type metal can. Size: 1 1/2" x 1" x 3/4" high.

## TYPE IN-106

Best filter for fluorescents. Balanced network. Especially suited for radio and television salesrooms. One unit per fixture in series where power leads enter. Metal container with four stranded wire leads. Rating: 125 v. AC or DC; 2.6 amps. Size: 1 1/2" x 8" x 1 1/2" high.

## TYPE IN-133

Hermetically sealed, metal cased unit — bracket mounted. Delta-connected capacitor combination for connecting across line. Excellent for use in areas near radio stations. 6" insulated stranded wire leads. Can common for grounding. Rating: 125 v. AC or DC. Size: 1 1/2" x 1 1/2" x 1 1/2" high.

## TYPE IN-109

Balanced network filter for severe r-f noises from small appliances. Metal container and four insulated, stranded wire leads. Case common for grounding. Rating: 125 v. AC or DC; 2.5 amps. Size: 1 1/2" x 8" x 1 1/2" high.

## THE INTERFERENCE ANALYZER TYPE ANL-37



The Aerovox Filter Selector eliminates the guess work in determining the proper filter to use. Plugs between interfering device and outlet. Adjust selector switch until noise is eliminated or minimized. Dial then indicates type filter (IN27 thru IN42) to be used.

Unit in handsome, sturdy metal cabinet. Compartment contains necessary attachment plugs and clips. Size: 5 1/2 x 5 1/2 x 8 inches.

## BUILT-IN FILTERS

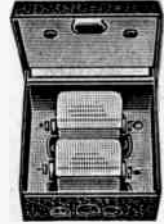
High attenuation type, hermetically sealed units for use where severe interference is encountered and dependability is required. For permanently mounted applications.

Aerovox special "Pi type" construction insures efficient radio noise reduction over low frequency broadcast, shortwave, and television bands. Suitable for Army-Navy or aircraft equipment where immersion and severe humidity tests must be met.

For single wire unbalanced applications. For two wire filtering use one filter in each line. Filter case must be securely bonded to the filter appliance and ground for maximum efficiency. These filters when used on high-voltage AC should be used only on permanently grounded equipment.

Aerovox Type	Max. Volt. VAC	Max. Amps.	Size L x W x H
IN-101	125	1.5	2 1/4 x 1 1/4 x 3/4
IN-103	50	50	8 1/2 x 2 1/2 x 2 1/2
IN-110	250	5	2 x 2 x 1
IN-111	250	10	2 x 2 x 1 1/4
IN-112	250	20	3 1/2 x 2 1/2 x 2 1/2

## HEAVY-DUTY INDUSTRIAL TYPE FILTERS TYPE INB

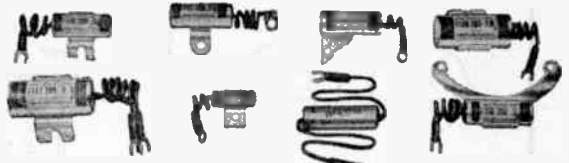


Heavy duty, industrial-type interference filters consisting of one or more highly efficient radio noise filter elements. Enclosed in black painted steel surface cabinet for permanent installations of power equipment. One element per line. Cabinets meet Underwriters' requirements, and have standard knockouts. Rating: 250 v. AC — 25 to 60 cps. or 600 v. DC.

Type	Max. Amps.	Elements
INB-104	5	1
INB-100	10	1
INB-101	80	1
Single-Phase Balanced Network		
INB-105	5	2
INB-102	10	2
INB-103	80	2
Three-Phase Network		
INB-106	5	3
INB-107	10	3
INB-108	80	3

Other INB filters available for up to 200 amperes. Write for information.

## AUTO-RADIO CONDENSERS



Car Generators	Cap. Mfd.
Type 1120	1.0
Type 1140	0.5
Dual Element	
Type 1141	0.5-0.5
Ford Auto Radios	
Type 1144	0.5
For 1036 Models	
Type 1150	0.5

Motorola Auto Radios	Cap. Mfd.
Type 1466	.0008
Ammeter Condenser	
Type 1160	.05
Gas Gage Filter Condenser	
Type 1148-G	0.05
Oil Gage Filter Condenser	
Type 1142-O	0.25

## Vibrator Buffer Capacitors

### Type VBC

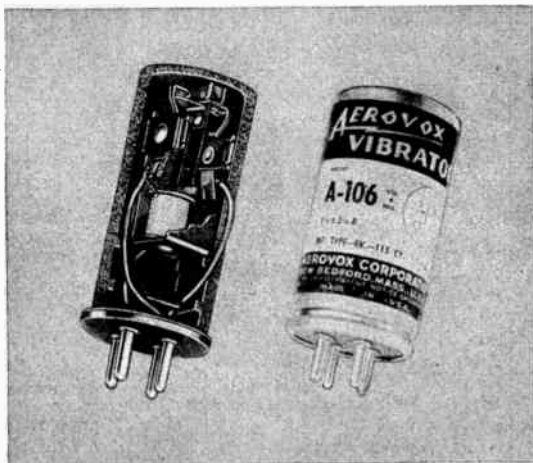
Type	Cap. Mfd.	Size
VBC-2	.001	1/4 x 1 1/2
VBC-3	.002	1/4 x 1 1/2
VBC-4	.0022	1/4 x 1 1/2
VBC-5	.003	1/4 x 1 1/2
VBC-6	.0038	1/4 x 1 1/2
VBC-7	.004	1/4 x 1 1/2
VBC-8	.0047	1/4 x 1 1/2
VBC-9	.005	1/4 x 1 1/2
VBC-22	.006	1/4 x 1 1/2
VBC-23	.0068	1/4 x 1 1/2
VBC-24	.007	1/4 x 1 1/2
VBC-25	.0075	1/4 x 1 1/2
VBC-26	.008	1/4 x 1 1/2
VBC-27	.01	1/4 x 1 1/2
VBC 28	.015	1/4 x 2
VBC-29	.02	1/4 x 2
VBC-32	.025	1/4 x 2
VBC-33	.03	1/4 x 2
VBC-34	.05	1/4 x 2
VBC-35	.05	1/4 x 2
VBC-36	.015-.015	1/4 x 2

VIBRATOR "HASH" CAPACITOR — VMC36  
.5 Mfd. 100 Volts WVDC



# Vibrators

## AEROVOX QUIET AS A MOUSE\* VIBRATORS

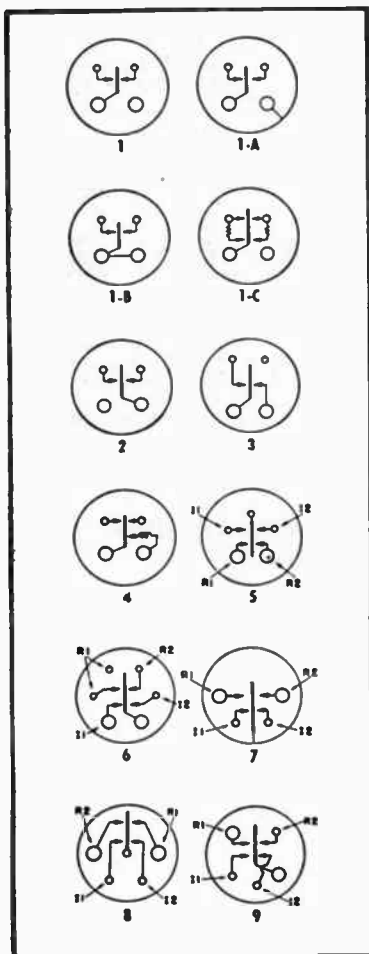


With this catalog, Aerovox introduces a complete line of VIBRATORS. A new design in vibrators, engineered for quiet operation and long life. Creates a minimum of shake in the set and will operate noiselessly in any position.

These precision-built units are sure-starting at low voltages and have higher efficiency to give higher output voltages. Heat generation is low. Overall construction is sturdy and lightweight.

You stock only a *minimum* of different types because Aerovox Vibrators are all standardized models to cover a big range of application.

### BASE CONNECTIONS



### EASY REFERENCE CHASSIS CODE

- A-100 Series-Standard 115 Cycle 4 Contact Interrupter Chassis
- A-200 Series-Standard 100 Cycle 4 Contact Interrupter Chassis
- A-300 Series-Standard 115 Cycle 8 Contact Heavy Duty Interrupter Chassis
- A-400 Series-Standard 115 Cycle 8 Contact Synchronous Chassis

The following listings represent standard items immediately available from your Aerovox distributor. Note the significant information for each number, including operating voltage, kind of vibrator, frequency, base (corresponding to base diagrams of right), can type and size, and the identifying characteristics.

Cat No	Volt	Type	Freq	Base	Can	Size	Identifying Characteristics
A-100	6	INT.	115	1	A	1½x2¾	Standard 4 Prong
A-101	6	INT.	115	2	A	1½x3¾	Standard 4 Prong (Not standard wiring)
A-102	6	INT.	115	3	B	1¾x3¾	GM 4 Prong Spread Base
A-103	6	INT.	115	3	A	1½x2¾	GM 4 Prong Spread Base
A-105	6	INT.	115	3	C	1½x3¾	GM 4 Prong Spread Base (With ring puller)
A-106	6	INT.	115	1-A	B	1¾x3¾	Standard 4 Prong with Ground Strap on #4 Pin
A-108	6	INT.	115	1	A	1¾x2¾	Standard 4 Prong
A-200	6	INT.	100	1	A	1½x2¾	Standard 4 Prong
A-201	6	INT.	100	1	A	1¾x3¾	Standard 4 Prong
A-300	6	INT.	115	1	A	1½x3¾	Standard 4 Prong
A-301	6	INT.	115	1-C	A	1½x3¾	Standard 4 Prong
A-400	6	SYN	115	5	A	1½x3¾	Standard 5 Prong
A-401	6	SYN	115	5	A	1¾x3¾	Standard 5 Prong
A-402	4	SYN	115	5	A	1¾x3¾	Standard 5 Prong
A-403	6	SYN	115	6	A	1½x3¾	Standard 6 Prong
A-404	6	SYN	115	6	A	1¾x3¾	Standard 6 Prong
A-405	6	SYN	115	7	A	1½x2¾	Standard Can Ground - Reversible Syn. Unit
A-406	6	SYN	115	7	A	1½x3¾	Standard Can Ground - Reversible Syn. Unit
A-407	6	SYN	115	8	A	1½x2¾	Standard Pin Ground - Reversible Syn. Unit
A-408	6	SYN	115	8	A	1½x3¾	Standard Pin Ground - Reversible Syn. Unit
A-409	6	SYN	115	9	C	1¾x3¾	Standard Syn. Buick (Delco) 5 Prong Base (With ring puller)





# Mica Capacitors

For most critical applications where precise capacity values must be attained and maintained, AEROVOX silvered mica units are generally available. Encased in red molded XM bakelite. Similar in external appearance to standard bakelite molded mica units.

Unique construction. Only plus .0022 per degree F.—a remarkably low temperature coefficient. Excellent retrace characteristics. Practically no capacity drift with time. Exceptionally high "Q". Mechanically protected against physical damage and changes in electrical characteristics due to varying at-

mospheric conditions. Wax impregnated externally. Ideal for use in circuits where inductance and capacity product must remain constant under all operating conditions. Specifically designed for use in push-button tuning, oscillator padding circuits, fixed tuned circuits, and as capacitance standards, etc., where accuracy and stability are of prime importance.

Standard tolerance  $\pm 5\%$ . For  $\pm 20\%$  deduct 10% from price. For  $\pm 10\%$  deduct 5%. For  $\pm 3\%$  add 10%. For  $\pm 2\%$  add 15%. For  $\pm 1\%$  add 25%.

### TYPE 1464



500 V.D.C.W.		1000 V.D.C.T.	
Cap. Mfd.	Cap. Mfd.	Cap. Mfd.	Cap. Mfd.
.00075	.0015	.004*	
.0008	.002	.005*	
.0009	.0025	.006*	
.001	.003		

### TYPE 1469



500 V.D.C.W.		1000 V.D.C.T.	
Cap. Mfd.	Max. Char.	Cap. Mfd.	Max. Char.
.000005	B	.00015	F
.00001	B	.0002	F
.000025	C	.00025	F
.00004	D	.0008	F
.00005	F	.00085	F
.00007	F	.0004	F
.000075	F	.0005	F
.0001	F		

Size:  $\frac{1}{8}$ " x  $\frac{1}{8}$ " x  $\frac{1}{8}$ " provided with wire leads.

### TYPE 1464X

300 V.D.C.W.      600 V.D.C.T.

Cap. Mfd.	Cap. Mfd.	Cap. Mfd.
.004	.006	.008*
.005	.007*	.01*

Size:  $\frac{1}{8}$ " x  $\frac{1}{8}$ " x  $\frac{1}{8}$ " or  $\frac{1}{4}$ " x  $\frac{1}{8}$ " x  $\frac{1}{8}$ " for units marked \*. Provided with wire leads. Standard Tolerance  $\pm 5\%$ .

### TYPE 1479



500 V.D.C.W.      1000 V.D.C.T.

Cap. Mfd.	Cap. Mfd.	Cap. Mfd.
.0001	.00035	.0008
.00015	.0004	.0009
.0002	.0005	.001
.00025	.0007	
.0003	.00075	

Size:  $1\frac{1}{8}$ " x  $\frac{7}{8}$ " x  $\frac{1}{8}$ " provided with wire leads. Maximum characteristic available F.

## PORCELAIN-CASED MICA CAPACITORS

### TYPES 1991-2-3-4-5-6

Ideal for high-frequency application. Glazed porcelain case, high temperature wax sealed. Heavy duty power terminals. Minimum power loss due to dielectric absorption. No heating at full load.

Size: 4" overall by 3" high; 8 1/2" between.

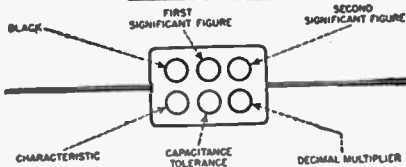


Cap.	DC Voltage Rating	Type	Max. Current Capacity — Amps			
			15 mc	7.5 mc	3750 kc	1875 kc
.00005	12,500	1996	3	2.5	1.5	1
.0001	12,500	1996	5	4	3	2
.00025	12,500	1996	7	8	6	4
.0005	12,500	1996	8	9	8	4
.001	7,000	1994	7	8	6	4
	12,500	1996	9	10	11	12
.0015	7,000	1994	8	9	8	5
	12,500	1996	9	10	11	12
.002	7,000	1994	8	9	8	7
	12,500	1996	9	10	11	10
.003	7,000	1994	8	9	8	6
	12,500	1996	9	10	11	10
.005	7,000	1994	8	9	8	7
	10,000	1995	10	13	14	15
.01	7,000	1994	9	11	12	11
	10,000	1995	10	13	14	15
.02	7,000	1994	9	11	12	10
	10,000	1995	10	13	14	15
.05	7,000	1994	10	13	14	17
	10,000	1995	10	14	16	17
.1	7,000	1994	10	13	15	18
	10,000	1995	10	14	16	18

SEE PAGE P-52  
FOR LISTING OF HIGH-VOLTAGE  
MICA CAPACITORS  
FOR TELEVISION APPLICATIONS

## MICA CAPACITOR COLOR CODES

### JAN-C-5 COLOR CODE

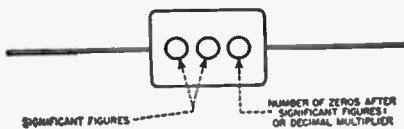


Color	Figure or Multiplier	Characteristic Letter	Tolerances	Color	Figure or Multiplier	Characteristic Letter	Tolerance
Black	0	A	20% (M)	Blue	6	G	...
Brown	1	B	...	Violet	7	...	...
Red	2	C	2% (G)	Gray	8	...	...
Orange	3	D	...	White	9	...	...
Yellow	4	E	...	Gold	.1	...	...
Green	5	F	...	Silver	.01	...	10% (K)

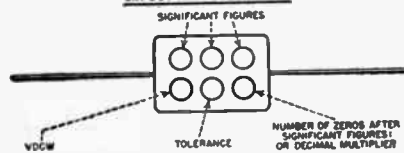
## RMA COLOR CODE

### THREE DOT RMA COLOR CODE

USED FOR 500 VDCW CAPACITORS WHOSE TOLERANCE IS GREATER THAN 10%.



### SIX DOT RMA COLOR CODE



Color	Significant Figure, or No. of Zeros, or Decimal Multiplier	VDCW	Tolerance	Color	Significant Figure, or No. of Zeros, or Decimal Multiplier	VDCW	Tolerance
Black	0	...	...	Violet	7	700	7%
Brown	1	100	1%	Gray	8	800	8%
Red	2	200	2%	White	9	900	9%
Orange	3	300	3%	Gold	.1	1000	5%
Yellow	4	400	4%	Silver	.01	2000	10%
Green	5	500	5%	None	...	500	20%
Blue	6	600	6%				



## Commercial Grade MICA TRANSMITTING CAPACITORS

- Extra-heavy-duty Capacitors for
- Commercial Communication Companies
  - Broadcasters
  - Builders of Quality Radio and Electronic Equipment
  - Amateurs, Experimenters

With these capacitors Aerovox is contributing its share towards narrowing still more the small remaining gap between professional and amateur radio practices.

Due to the normally limited demand for these extra-heavy-duty mica capacitors, as well as the considerable number of capacitance and voltage ratings in which they are made, this line is made to special order. However, your Authorized Aerovox Jobber is now able to order these commercial-grade capacitors for you.

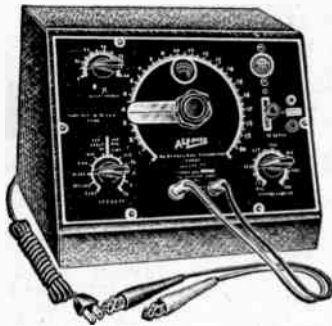
Consult your Aerovox Jobber for specifications and quotations.







# Test Instruments



## AEROVOX CAPACITANCE AND RESISTANCE BRIDGE

AEROVOX MODEL 76 Resistance Capacitance Bridge is the new postwar general-utility instrument combining simplicity of operation, remarkable degree of accuracy, and modest price.

Extreme ruggedness makes it equally suitable out on the job, in the shop, or in the laboratory.

Sloping panel 10" x 6". Aluminum, etched and anodized. Steel cabinet, black crackle finish. All readings taken from main 4" dial. Same calibrated scale eliminates trouble and chances for errors in reading. Linear scale, also an exclusive feature, means no crowding at high end to make readings difficult and inaccurate. Both the resistance and the capacitance readings are covered by six overlapping ranges, as against two or three in usual service instruments, for maximum sensitivity and accuracy. Positive "magic eye" indicator.

Here is what Model 76 bridge does: (1) Measures capacitance from 100 mmf. to 200 mfd. in six ranges. (2) Measures resistance from 10 ohms to 20 megohms in six ranges. (3) Measures power factor from 0 to 50%. (4) Provides D.C. polarizing potential for leakage measurements, from 0 to 600 V. D.C., continuously variable and calibrated in volts. (5) Checks leakage or insulation resistance.

Instrument is provided with shockproof, color-coded test leads fitted with banana plugs for panel jacks, and with clips. Instructions. Measures 10" x 7 3/4" x 8 3/4". Weight 8 lbs. 8 oz.

## AEROVOX L-C CHECKER

★ This exclusive Aerovox development has no counter-part, much less an equal. Basically, it determines the effectiveness of any capacitance or inductance while actually connected in its circuit. Testing efficiency is greatly increased. Components may be tested singly or in combinations whereby to determine resonant frequency and effectiveness of given circuits. Circuit or systems may be adjusted by this checking means for proper operating efficiency. Certainly a "must" instrument for the radio worker.



### HERE'S A PARTIAL LISTING OF WHAT THE AEROVOX L-C CHECKER DOES:

It checks capacitance of capacitors at radio frequencies without removing them from circuit. • It checks alignment of r.f. circuits; also tracking of super-het. oscillator. • It checks alignment or broad or narrow band i.f. amplifiers. • It checks the tuning of wave traps and of image-rejection circuits; frequency ranges of receivers; frequency ranges of signal generators; calibration of wave meters. • Identifies harmonics of frequency standard in precision frequency calibration of radio equipment. • It checks natural resonant points of r.f. chokes making sure they are beyond operating range. • It traces resonant absorption trouble in "all-wave" receiver circuits—locating dead spots, etc. • It locates resonant points in shorted windings (unused coils) in multi-range oscillators, etc. • Locates resonant frequency of r.f. coupling chokes, making certain of placement to secure enough gain balance over tuning range of r.f. stage. • It checks natural period of antennae and transmission lines in order to have resonant peaks at certain frequencies. • It checks quartz crystals for frequency, false frequency, operation at harmonics, and for activity. • Checks FM i.f. transformers. • Checks alignment of FM i.f. channels. • Checks leakage of paper capacitors. And it checks many other functions when used with auxiliary equipment. This checker operates from AC or from DC 120 volts source. It has a frequency range from 100 KC to 44MC as follows:

#### Range:

A —	75	—	225 KC
B —	200	—	600 KC
C —	550	—	1650 KC
D —	1.5	—	5 MC
E —	4.5	—	14.5 MC
F —	13	—	44 MC

Capacitance Range: .0002 mfd. — 2 mfd.

Inductance Range: 0 — 500 MH

Tube Complement: 6C4, 25Z6, 6E5, VR150

Accuracy: Capacitance and Inductance ± 10%

Frequency Ranges A, B, C: ± 2%

D, E, F: ± 5%

Dimensions: 10 1/2 x 7 1/2 x 5 1/2

Weight: (shipping) 6 lbs.

## A TYPE FOR EVERY APPLICATION

# AEROVOX Motor-Starting CAPACITORS

Aerovox motor capacitors are available in two general categories: (1) **Exact-Duplicate Replacements**, precisely matching the mechanical and electrical features of the original equipment; and (2) **Universal Replacements**, for a minimum stock of numbers taking care of the maximum range of motor applications. Exact-Duplicate Replacements do the "same-as-new" service job insisted upon by critical customers. Universal Replacements mean maximum convenience with minimum investment. And of course Aerovox also supplies the hardware — housings, caps, mountings.



\*Trade Mark.



A snappy, informative, practical engineering paper, issued monthly, the **AEROVOX RESEARCH WORKER** is free to so-called, engineers, hams, and other interested radio workers. Ask your AEROVOX jobber how you may subscribe, or write direct.

# SPRAGUE CAPACITORS



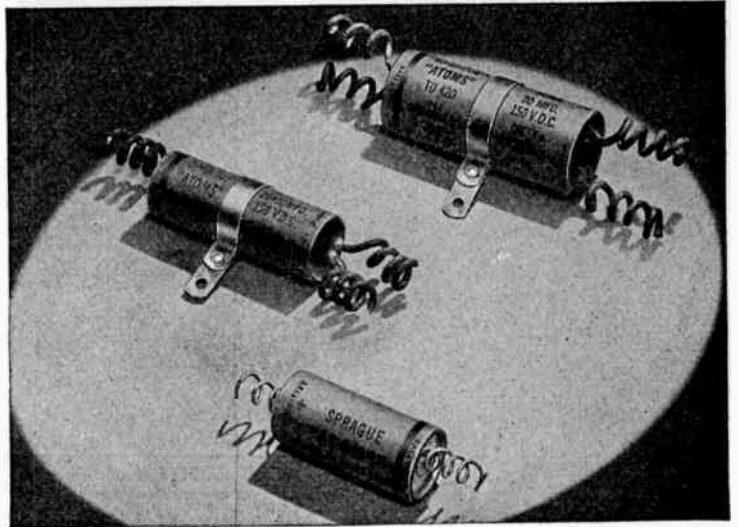
## SPRAGUE ATOMS®

### THE UNIVERSAL MIDGET DRY ELECTROLYTICS

Sprague Atom Capacitors—"Mightiest Midgets of All"—are the answer to 90% or more of all radio service requirements for replacement dry electrolytic units. A small stock of different capacities and voltages equips you for quick, dependable service on practically every job.

Sprague Atoms will fit anywhere. The smaller units can be mounted by means of their sturdy, tinned-copper leads. Metal mounting straps are provided with all multiple-section units and are available for the larger single units. (See Hardware page P-80.) Or if desired, you can mount them by any other suitable means. Despite their extremely small size, Atoms will last longer and stand far more punishment than much larger, old-style dry electrolytics.

Atoms are guaranteed to have low leakage, to withstand high surge voltages, and to have exceptionally long shelf life. Single-section capacitors are metal-encased with outer kraftboard insulating tube. Multiple-section capacitors have long-life inner plastic film wrap in heavy waxed kraftboard tube, high temperature end seals, and long flexible insulated leads.



SINGLE				
Cat. No.	V DC Mfd. working	Dimen. D	Dimen. L	List Price
UHC-106	100 6	1 1/8	1 1/8	\$1.40
UHC-206	250 6	1 1/8	1 1/8	1.55
UHC-506	500 6	2 1/8	2 1/8	1.70
UHC-1000	1000 6	2 1/8	2 1/8	2.25
UHC-1500	1500 6	2 1/8	2 1/8	3.00
UHC-112	100 12	1 1/8	1 1/8	1.55
UHC-212	250 12	1 1/8	1 1/8	1.75
UHC-512	500 12	2 1/8	2 1/8	1.90
UHC-1012	1000 12	2 1/8	2 1/8	2.75
UHC-115	100 15	1 1/8	1 1/8	1.70
UHC-215	250 15	1 1/8	1 1/8	1.90
UHC-515	500 15	2 1/8	2 1/8	2.10
UHC-1015	1000 15	2 1/8	2 1/8	3.00
TA-5	5 25	1 1/8	1 1/8	.70
TA-10	10 25	1 1/8	1 1/8	.75
TA-25	25 25	1 1/8	1 1/8	.85
TA-50	50 25	1 1/8	1 1/8	1.00
UHC-102	100 25	1 1/8	1 1/8	1.20
UHC-202	250 25	1 1/8	1 1/8	2.00
UHC-502	500 25	1 1/8	1 1/8	2.25
TA-55	5 50	1 1/8	1 1/8	.75
TA-510	10 50	1 1/8	1 1/8	.80
TA-525	25 50	1 1/8	1 1/8	.90
TA-550	50 50	1 1/8	1 1/8	1.05
UHC-105	100 50	1 1/8	1 1/8	1.50
UT-41	4 150	1 1/8	1 1/8	.75
UT-81	8 150	1 1/8	1 1/8	.80
UT-101	10 150	1 1/8	1 1/8	.85
UT-121	12 150	1 1/8	1 1/8	.85
UT-161	16 150	1 1/8	1 1/8	.90
UT-201	20 150	1 1/8	1 1/8	.95
UT-301	30 150	1 1/8	1 1/8	1.00
UT-401	40 150	1 1/8	1 1/8	1.10
UT-501	50 150	1 1/8	1 1/8	1.20
UT-42	4 250	1 1/8	1 1/8	.80
UT-82	8 250	1 1/8	1 1/8	.80
UT-122	12 250	1 1/8	1 1/8	1.00
UT-162	16 250	1 1/8	1 1/8	1.10
UT-202	20 250	1 1/8	1 1/8	1.20
UT-402	40 250	2 1/8	2 1/8	1.45
UT-43	4 350	1 1/8	1 1/8	.85
UT-83	8 350	1 1/8	1 1/8	.90
UT-123	12 350	1 1/8	1 1/8	1.10
UT-163	16 350	1 1/8	1 1/8	1.25
UT-203	20 350	1 1/8	1 1/8	1.30
UT-4	4 450	1 1/8	1 1/8	.90
UT-8	8 450	1 1/8	1 1/8	.95
UT-10	10 450	1 1/8	1 1/8	1.05

Cat. No.	Mfd.	V DC working	Dimen. D	Dimen. L	List Price
UT-12	12	450	1 1/8	1 1/8	\$1.15
UT-16	16	450	1 1/8	2 1/8	1.35
UT-20	20	450	1 1/8	2 1/8	1.50
UT-30	30	450	1 1/8	2 1/8	1.65
UT-40	40	450	1 1/8	2 1/8	2.00
UT-85	8	500	1 1/8	1 1/8	1.30
UT-165	16	500	1 1/8	2 1/8	2.00
UT-205	20	500	1 1/8	2 1/8	2.40

### DUAL

#### COMMON NEGATIVE—3 LEADS

TA-110	10-10	25	1 1/8	2 1/8	\$1.05
TA-100	10-10	50	1 1/8	2 1/8	1.15
TA-88	8-8	150	1 1/8	2 1/8	1.15
TA-122	12-20	150	1 1/8	2 1/8	1.25
TA-116	16-16	150	1 1/8	2 1/8	1.25
TA-220	20-20	150	1 1/8	2 1/8	1.30
TA-230	20-30	150	1 1/8	2 1/8	1.40
TA-240	20-40	150	1 1/8	2 1/8	1.50
TA-330	30-30	150	1 1/8	2 1/8	1.50
TA-430	40-30	150	1 1/8	2 1/8	1.60
TA-440	40-40	150	1 1/8	2 1/8	1.70
TA-530	50-30	150	1 1/8	2 1/8	1.70
TA-505	50-50	150	1 1/8	2 1/8	1.85
TA-830	80-30	150	1 1/8	2 1/8	1.95
TA-816	8-16	200	1 1/8	2 1/8	1.30
TA-212	12-12	200	1 1/8	2 1/8	1.30
TA-216	16-16	200	1 1/8	2 1/8	1.50
AT-816	8-16	250	1 1/8	2 1/8	1.60
AT-261	16-16	250	1 1/8	2 1/8	1.70
UT-88	8-8	450	1 1/8	2 1/8	1.70
UT-816	8-16	450	1 1/8	2 1/8	2.00
UT-220	20-20	450	1 1/8	3 1/8	2.40

#### SEPARATE SECTIONS—4 LEADS

TU-220	20-20	150	1 1/8	2 1/8	\$2.00
TU-420	40-20	150	1 1/8	2 1/8	2.35
TU-816	8-16	250	1 1/8	2 1/8	2.25
TU-216	16-16	250	1 1/8	2 1/8	2.55
TU-88	8-8	450	1 1/8	3 1/8	2.10
TU-1616	16-16	450	1 1/8	3 1/8	3.15

Cat. No.	Mfd.	V DC working	Dimen. D	Dimen. L	List Price
TA-311	80-80/100	150/12	7/8	2 1/8	\$2.50
TA-301	20-20/20	150/25	7/8	2 1/8	1.90
TA-305	40-30/20	150/25	7/8	2 1/8	2.05
TA-306	40-40/100	150/25	1 1/8	2 1/8	2.40
TA-307	50-30/20	150/25	1 1/8	2 1/8	2.10
TA-308	50-30/200	150/25	1 1/8	3 1/8	2.90
TA-309	50-50/20	150/25	1 1/8	2 1/8	2.25
TA-302	20-20-20	150	1 1/8	2 1/8	2.00
TA-303	30-30-80	150	1 1/8	2 1/8	2.20
TA-304	40-30-20	150	1 1/8	2 1/8	2.15
TA-314	40-40-40	150	1 1/8	3 1/8	2.35
TA-315	80-40-20	150	1 1/8	3 1/8	2.50
TA-313	12-12/20	450/25	1 1/8	2 1/8	2.20

### OTHER SPRAGUE TYPES

Sprague, largest supplier of capacitors to the television and electronic industry, manufactures many other designs of capacitors in addition to those shown in this catalog.

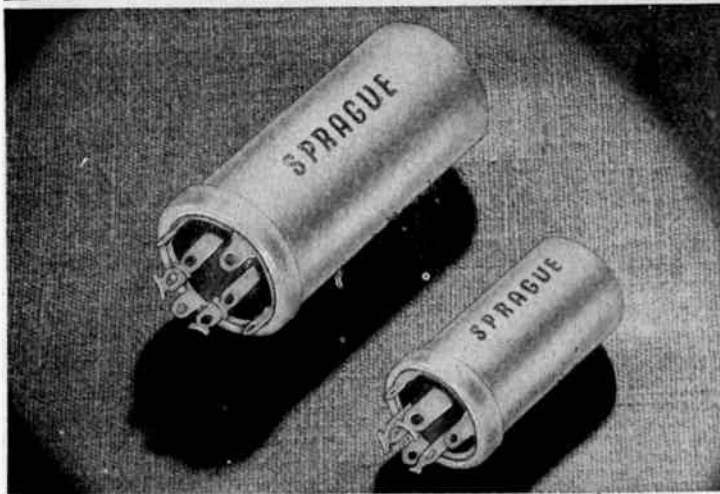
The most popular types for industrial and laboratory applications are shown in Sprague Products' 40-page Industrial Catalog, available through Sprague Distributors Everywhere, or directly from Sprague upon letterhead request. In this catalog are listed such Sprague developments as Prokar\* high-temperature capacitors, carrier-current coupling capacitors, Vitamin Q\* fluorescent lamp capacitors, high-voltage Vitamin Q\* capacitors, hermetically sealed subminiature paper capacitors, etc.

\*Trade Mark Reg. U. S. Patent Office

**SPRAGUE PRODUCTS CO.**  
North Adams, Mass.  
(Distributors, Division of the Sprague Electric Company)



# SPRAGUE CAPACITORS



The popularity of EL units is proved by their wide-spread use by leading manufacturers. They are easy to mount, and no other dry type gives so much dependability in such compact size. EL Capacitors are of highest quality etched-foil construction, hermetically sealed in aluminum cans and have twist-prong tabs for washer or direct to chassis mounting. Tabs have holes and are tinned for easy soldering. Each unit is supplied to you with Bakelite and metal washers, making them ideal for above-chassis mounting. The mounting tab ring, formed by the end of the metal container and serving as the negative terminal, is electrically welded to the capacitor cathode. Multi-Section EL Capacitors are concentrically wound and have common cathode construction.

**SPRAGUE EL**  
**"TWIST-LOK"**  
**SELF - MOUNTING**  
**MIDGET CAN TYPE**

## SINGLE SECTION

Catalog No.	Mfd.	Voltage DC working	Dimensions D L		List Price
EL-13	8000	10	1 3/8	8	\$4.50
EL-111	1000	15	1	8	3.25
EL-121	2000	15	1 3/8	8	4.70
EL-142	40	25	3/4	2	1.10
EL-112	100	25	3/4	2	1.45
EL-152	500	25	1	2	2.45
EL-122	1000	25	1 3/8	2	3.55
EL-50	150	50	3/4	2 1/2	2.45
EL-55	500	50	1 3/8	2 1/2	3.55
EL-31	30	150	3/4	2	1.25
EL-51	50	150	3/4	2 1/2	1.45
EL-14	40	200	1	2	1.50
EL-12	20	250	3/4	2	1.45
EL-30	30	250	3/4	2 1/2	1.55
EL-42	40	250	1	2	1.70
EL-6	60	250	1	2 1/2	2.05
EL-203	15	300	3/4	2	1.40
EL-33	30	300	1	2	1.65
EL-53	50	300	1	2 1/2	1.95
EL-123	125	300	1 3/8	3	3.20
EL-5	50	350	1	3	2.05
EL-125	125	350	1 3/8	3	3.55
EL-10	10	400	3/4	2	1.25
EL-20	20	400	1	2	1.65
EL-80	80	400	1 3/8	2 1/2	2.95
EL-1	10	450	3/4	2	1.30
EL-15	15	450	1	2	1.55
EL-2	20	450	1	2	1.75
EL-3	30	450	1	2 1/2	1.90
EL-4	40	450	1	3	2.25
EL-115	10	525	1	2	1.75

## DUAL SECTION

EL-242	40-40	25	1	2	1.50
EL-250	50-50	50	1	2	1.70
EL-221	20-20	150	1	2	1.55
EL-231	30-15	150	1	2	1.60
EL-230	30-80	150	1	2	1.75
EL-24	40-20	150	1	2	1.75
EL-35	50-30	150	1	2	1.95
EL-25	50-50	150	1	2	2.10
EL-26	60-60	150	1	3	2.25
EL-101	10-10	250	1	2	1.75
EL-120	20-20	250	1	2	2.05
EL-245	40-40	250	1	3	2.30
EL-21	10-10	300	1	2	1.80
EL-253	15-15	300	1	2	1.95
EL-22	20-20	300-25	1	2	1.85
EL-23	30-30	300-350	1	3	2.60
EL-32	30-20	350	1	3	2.50
EL-254	15-15	400	1	2 1/2	2.30
EL-214	30-10	400	1 3/8	3	4.00
EL-210	10-10	450	1	2	2.10
EL-151	15-10	450	1	3	2.35
EL-220	20-20	450	1	3	2.65
EL-240	40-40	450	1 3/8	3	4.00

## TRIPLE SECTION

Catalog No.	Mfd.	Voltage DC working	Dimensions D L		List Price
EL-325	20-20-20	25	1	2	\$2.00
EL-335	30-30-30	50	1	2	2.30
EL-313	10-30-30	150	1	2	2.30
EL-320	20-20-20	150	1	2	2.30
EL-224	40-20-20	150	1	2	2.40
EL-340	40-40-40	150	1	3	2.60
EL-321	30-20-100	150-150-6	1	2	2.65
EL-222	20-20-20	150-150-25	1	2	2.20
EL-324	30-20-20	150-150-25	1	2	2.20
EL-332	30-30-20	150-150-25	1	2	2.25
EL-43	30-40-25	150-150-25	1	2	2.35
EL-343	40-30-20	150-150-25	1	2	2.35
EL-351	50-30-100	150-150-25	1	2 1/2	3.10
EL-352	50-50-20	150-150-25	1	2 1/2	2.55
EL-355	10-15-15	250	1	2	2.50
EL-315	10-15-30	250	1	2	2.65
EL-354	40-20-20	250	1	3	3.00
EL-331	15-15-20	250-250-25	1	2	2.45
EL-334	30-30-20	250-250-25	1	2 1/2	2.70
EL-314	10-20-30	250-250-350	1	3	2.80
EL-316	10-10-10	300	1	2	2.40
EL-333	20-20-20	300-300-25	1	2	2.60
EL-341	40-15-20	300-300-25	1	2 1/2	2.80
EL-102	10-10-20	350-350-25	1	2	2.30
EL-153	15-10-20	350-350-25	1	2	2.40
EL-326	15-15-20	350-350-25	1	2 1/2	2.55
EL-212	20-10-20	350-350-25	1	2 1/2	2.45
EL-323	30-20-20	350-350-25	1	3	2.80
EL-311	10-10-10	400	1	2 1/2	2.50
EL-342	15-15-40	400-400-25	1	2 1/2	2.70
EL-322	20-20-20	400-400-25	1	3	2.80
EL-310	10-10-10	450	1	2 1/2	2.50
EL-344	15-15-10	450	1	3	2.85
EL-300	20-20-20	450	1 3/8	2 1/2	3.45
EL-362	20-15-10	450-300-300	1	3	2.85
EL-363	10-10-20	450-350-25	1	2	2.30
EL-364	15-20-20	450-350-250	1 3/8	2	2.95
EL-345	10-10-10	450-450-25	1	2 1/2	2.30
EL-202	10-10-20	450-450-25	1	2 1/2	2.35
EL-312	10-20-20	450-450-25	1	3	2.55
EL-353	15-15-20	450-450-25	1	3	2.70
EL-205	20-15-20	450-450-25	1	2 1/2	2.80
EL-350	20-20-20	450-450-25	1	3	2.95
EL-330	30-30-20	450-450-25	1 3/8	2 1/2	3.15
EL-360	15-15-10	450-450-300	1	3	2.80
EL-215	15- 5-15	450-450-350	1	3	2.50

## QUADRUPLE SECTION

EL-434	30-30-30-40	150-150-150-25	1 3/8	2	3.05
EL-443	40-40-30-20	150-150-150-25	1 3/8	2	3.10
EL-452	50-50-50-20	150-150-150-25	1 3/8	2	3.40
EL-422	40-20-10-20	200-200-200-25	1 3/8	2	3.15
EL-412	10-10-10-20	300-300-300-25	1 3/8	2	2.95
EL-432	40-40-20-20	350-300-300-25	1 3/8	3	3.95
EL-415	20-10- 5-10	350-350-350-25	1 3/8	2	3.05
EL-442	20-20-20-20	400-400-400-25	1 3/8	2 1/2	3.80
EL-410	10-10-10-10	450	1 3/8	2	3.25
EL-420	20-20-20-20	450	1 3/8	3	4.50
EL-421	20-15-15-20	450-350-350-25	1 3/8	2	3.60
EL-423	20-15-20-20	450-450- 25-25	1 3/8	2	3.40
EL-425	20-20-30-30	450-450-300-300	1 3/8	3	4.35
EL-431	10-10-10-20	450-450-450-25	1 3/8	3	3.05
EL-424	40-20-10-20	450-450-450-25	1 3/8	3	4.15

# SPRAGUE CAPACITORS



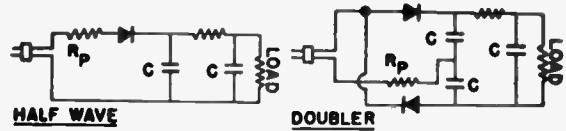
## SPRAGUE ELS SELENIUM RECTIFIER ELECTROLYTICS IN "TWIST-LOCK" CANS

Electrolytic Capacitors used in filter circuits for selenium rectifiers should be specifically designed for the job. As normally used in radio receivers, the use of selenium rectifiers results in the full 115 volts AC being applied to the filter for some 5 to 15 seconds each time the set is switched on. Even in normal operation, ripple currents as high as 400 milliamperes are not uncommon.

Conventional filter capacitors are not designed to handle these situations. High ripple current is detrimental to electrolytic capacitors because of heating due to power losses in the unit, and the tendency toward film formation on the cathode. Sprague Type ELS capacitors have been specifically designed to withstand the high ripple currents and reverse currents encountered in selenium rectifier circuits.

Catalog No.	Mfd.	DC Working Voltage	—Can Size—		List Price
			D	L	
ELS-1	40	150	1%	2	\$1.35
ELS-2	80	150	1	2	1.75
ELS-3	150	150	1%	2 1/2	2.75
ELS-4	60	300	1%	2	2.15
ELS-5	80	800	1%	2 1/2	2.50

## TWO TYPICAL SELENIUM RECTIFIER CIRCUITS



The two circuits shown above are typical of the type often used with selenium rectifiers. To protect both the filter capacitors as well as the rectifier, a protective resistor,  $R_p$ , should be used as shown in the diagram. This is particularly necessary in replacement work where the original circuit used a tube as a rectifier. A normal value of  $R_p$  is 50 ohms, and with normal ratings of selenium rectifiers available should not be less than 10 ohms.

Even though the protective resistor is used, the filter capacitors are subjected to severe ripple currents. For safe performance of the circuit, it is essential that these capacitors be specifically designed and produced to withstand these extreme conditions.

Catalog No.	Mfd.	DC Working Voltage	—Can Size—		List Price
			D	L	
ELS-6	20-20	150	1	2	\$1.55
ELS-7	40-40	150	1	2	1.95
ELS-8	80-40	150	1%	2	2.25
ELS-9	40-40	200	1	3	2.20
ELS-10	40-40	300	1%	2 1/2	3.00
ELS-11	60-60	300	1%	3	3.25
ELS-12	80-40	300	1%	3	3.65
ELS-13	20-20-20	150	1	2	2.30
ELS-14	20-20/20	150/25	1	2	2.20
ELS-15	40-20/20	150/25	1	2	2.30
ELS-16	40-20/20	300/25	1%	2	3.00

## SPRAGUE HLV HIGH-CAPACITY, LOW-VOLTAGE ALUMINUM CAN TYPES

These aluminum can high-capacity, low-voltage capacitors are specifically designed for tough filter applications, in "A" eliminators, talking movie equipment, plant telephone systems and similar low-voltage, high capacity filter circuits where it is essential to have absolute reliability, and to eliminate all hum. All units have outer insulating tube.

Catalog No.	Mfd.	—Voltage—		—Dimensions—		List Price
		DC working	Surge	D	L	
HLV-506	500	6	10	1	2 1/2	\$2.70
HLV-106	1000	6	10	1 1/2	2 1/2	3.25
HLV-156	1500	6	10	1 1/2	2 3/4	4.00
HLV-206	2000	6	10	1 1/2	3 1/4	4.80
HLV-5012	500	12	15	1 1/2	2 1/2	2.75
HLV-1012	1000	12	15	1 1/2	2 3/4	2.90
HLV-1512	1500	12	15	1 1/2	2 3/4	4.50
HLV-2012	2000	12	15	1 1/2	3 1/4	4.80
HLV-5015	500	15	20	1 1/2	2 1/2	3.10
HLV-1015	1000	15	20	1 1/2	2 3/4	3.70
HLV-1515	1500	15	20	1 1/2	3 1/4	4.75
HLV-2015	2000	15	20	1 1/2	3 3/4	5.80
HLV-525	500	25	40	1 1/2	2 1/2	4.00
HLV-1025	1000	25	40	1 1/2	3 1/4	4.75
HLV-2025	2000	25	40	1 1/2	4 1/4	7.20

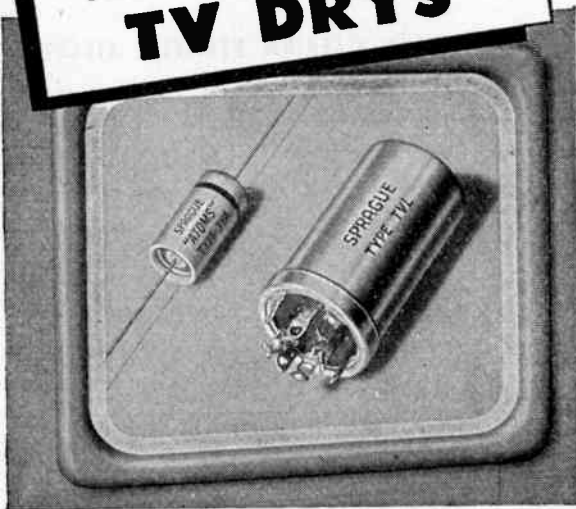


## SPRAGUE WR WET ELECTROLYTIC REPLACEMENTS

Sprague Type WR Capacitors are NOT SUBSTITUTES. They are dry electrolytics of very high voltage formation specifically designed for use wherever wet electrolytic capacitors may have been used. They will stand high peak voltages and they'll handle a-c ripples that might cause ordinary 450-volt dries to break down.

Cat. No.	Mfd.	Work. V	DC Surge	Diam.	Lgth.	List Price
WR-8	8	500	600	1 1/2	3 1/2	\$1.55
WR-16	16	500	600	1 1/2	4 1/2	2.35
WR-25	25	500	600	1 1/2	5 1/2	2.75

It's **SPRAGUE** for  
the full picture on  
**TV DRYS**



## TOPS FOR TELEVISION!

● Sprague serves the service industry first again with the most complete line of television electrolytics. Engineered especially for tough TV replacement applications, Sprague's new Type TVA Atom® and Type TVL Twist-Lok\* electrolytics stand up under the extremely high temperatures, high ripple currents and high surge voltages encountered in TV receivers.

● Like all Sprague Capacitors, Types TVA and TVL Television Electrolytics have the *extra* dependability that has helped make Sprague the largest capacitor supplier to the television and electronic industry.

● The most popular replacement units for RCA, Philco, Dumont, Admiral, General Electric, Motorola, Emerson, Zenith, Westinghouse and other leading set brands are in the comprehensive listings on this page.

### TYPE TVA ATOMS®

Small sized, metal-encased dry electrolytic tubulars. . . . All are suitable for 85°C operation. . . . TVA-11 through TVA-14 are specially designed miniatures for TV and FM detector circuits. . . .

Cat. No.	Mfd.	WVDC	Size*	List Price
<b>SINGLE UNITS</b>				
TVA-1	1000	6	1 1/2 x 2 3/8	\$2.25
TVA-2	2000	6	1 1/2 x 2 3/8	3.90
TVA-3	250	12	1 1/2 x 1 1/2	1.75
TVA-4	500	12	1 1/2 x 1 1/2	1.90
TVA-5	10	25	1 1/2 x 1 1/2	.75
TVA-6	25	25	1 1/2 x 1 1/2	.85
TVA-7	50	25	1 1/2 x 1 1/2	1.00
TVA-8	100	25	1 1/2 x 1 1/2	1.20
TVA-9	250	25	1 1/2 x 1 1/2	2.00
TVA-10	500	25	1 1/2 x 2 3/8	2.25
TVA-11	1	50	1 1/2 x 1 1/2	.75
TVA-12	2	50	1 1/2 x 1 1/2	.75
TVA-13	5	50	1 1/2 x 1 1/2	.75
TVA-14	10	50	1 1/2 x 1 1/2	.80
TVA-15	25	50	1 1/2 x 1 1/2	.90
TVA-16	50	50	1 1/2 x 1 1/2	1.05
TVA-17	100	50	1 1/2 x 1 1/2	1.50
TVA-18	30	150	1 1/2 x 1 1/2	1.00
TVA-19	80	150	1 1/2 x 2 3/8	1.50
TVA-21	10	450	1 1/2 x 2 3/8	1.05
TVA-22	20	450	1 1/2 x 2 3/8	1.50
TVA-23	30	450	1 1/2 x 2 3/8	1.65
TVA-24	40	450	1 1/2 x 3 3/8	2.00
<b>DUAL UNITS</b>				
TVA-20	20+20	150	1 1/2 x 1 1/2	1.30
TVA-25	10+10	450	1 1/2 x 2 3/8	1.85

## TYPE TVL TWIST-LOK\* DRY ELECTROLYTICS

A twist of the mounting tabs locks units in place. . . . Hermetically sealed for long life. . . . Designed for 85°C operation up to 450 WVDC.

Cat. No.	Mfd.	WVDC	Size*	List Price
<b>SINGLE UNITS</b>				
TVL-41	.5 ohm @ 15.75 kc	3, non-pol.	1 x 2	\$2.90
TVL-42	1 ohm @ 60 cps	3, non-pol.	1 1/2 x 2 1/2	4.50
TVL-43	2000	6	1 1/2 x 2	4.20
TVL-1	80	150	1 x 2 1/2	1.75
TVL-61	80	150	1 1/2 x 2	1.75
TVL-70	15	250	1 x 2	1.40
TVL-63	30	250	1 x 2 1/2	1.55
TVL-3	50	250	1 x 2	1.90
TVL-62	80	250	1 x 3 1/2	2.40
TVL-44	150	250	1 1/2 x 3	3.20
TVL-4	100	300	1 x 4	3.15
TVL-5	80	350	1 1/2 x 2 1/2	2.80
TVL-45	40	450	1 x 3	2.25
TVL-6	125	450	1 1/2 x 4	5.75
TVL-7	30	475	1 x 3	2.60
TVL-8	40	475	1 1/2 x 2	3.00
TVL-9	90	475	1 1/2 x 3 1/2	6.50

Cat. No.	Mfd.	WVDC	Size*	List Price
<b>DUAL UNITS</b>				
TVL-10	1000+500	6, non-pol.	1 1/2 x 2	2.95
TVL-66	250/1000	10/6	1 1/2 x 2	4.25
TVL-13	1000+1000	15	1 x 3 1/2	4.90
TVL-14	80+80	300	1 1/2 x 3 1/2	3.85
TVL-46	120+20	300	1 1/2 x 3 1/2	3.60
TVL-15	30+10	400	1 x 3	2.50
TVL-16	20/80	450/350	1 1/2 x 3 1/2	3.80
TVL-69	40/10	450/350	1 1/2 x 2	2.75
TVL-64	40+40	450	1 1/2 x 3	4.00
TVL-17	80/10	450/25	1 1/2 x 3	3.70
TVL-18	80/50	450/50	1 1/2 x 3	4.00
TVL-47	80+10	450	1 1/2 x 3	4.25
TVL-19	20/100	475/300	1 1/2 x 3 1/2	4.10
TVL-20	40+40	475	1 1/2 x 3	4.65

Cat. No.	Mfd.	WVDC	Size*	List Price
<b>TRIPLE UNITS</b>				
TVL-49	20/250+100	150/15	1 1/2 x 2 1/2	2.80
TVL-48	100/50/25	150/50/25	1 x 3	2.80
TVL-50	70+70/20	200/50	1 1/2 x 3	4.00
TVL-21	100+10/40	200/50	1 1/2 x 2	3.85
TVL-22	80+80/60	250/200	1 1/2 x 3 1/2	4.25
TVL-51	100/60/20	300/150/25	1 1/2 x 4	3.85
TVL-23	40/20/10	350/300/200	1 1/2 x 2	2.90
TVL-24	80+40/150	400/50	1 1/2 x 4	4.65
TVL-30	40+40+10	450	1 1/2 x 3 1/2	4.65
TVL-26	30/100+25	450/25	1 1/2 x 2	2.75
TVL-52	10+10/40	450/50	1 x 2 1/2	2.85
TVL-67	20+10/50	450/50	1 x 3	3.10
TVL-29	40+10/40	450/50	1 1/2 x 2 1/2	3.25
TVL-27	40/90+50	450/150	1 1/2 x 3	3.50
TVL-54	40+40/40	450/150	1 1/2 x 3 1/2	4.65
TVL-57	40/40/130	450/150/50	1 1/2 x 3	4.15
TVL-25	40+10/80	450/200	1 1/2 x 3	3.65
TVL-65	20+20/60	450/350	1 1/2 x 3 1/2	3.85
TVL-53	40+10/10	450/350	1 1/2 x 3	3.50
TVL-28	10/10/50	450/350/25	1 x 3	2.65
TVL-56	10/30/30	450/400/300	1 1/2 x 2 1/2	3.10
TVL-31	20/20/40	475/300/25	1 1/2 x 2	3.35
TVL-32	40/40/25	475/400/50	1 1/2 x 3	4.63
TVL-33	10+10+10	475	1 x 3	3.00
TVL-55	30+30+20	475	1 1/2 x 3	5.20

Cat. No.	Mfd.	WVDC	Size*	List Price
<b>QUADRUPLE UNITS</b>				
TVL-60	60+40+20/50	300/25	1 1/2 x 3 1/2	\$4.00
TVL-34	10+10/10+10	350/300	1 1/2 x 2	3.10
TVL-35	40/10/80+10	400/350/250	1 1/2 x 3 1/2	4.45
TVL-36	10+10+10/10	450/150	1 1/2 x 2	3.05
TVL-68	60+10+10/20	450/150	1 1/2 x 3 1/2	5.10
TVL-59	40+10/35+10	450/350	1 1/2 x 3 1/2	4.25
TVL-58	30+30+15+10	450	1 1/2 x 3 1/2	4.60
TVL-37	10/10/80/50	475/450/200/50	1 1/2 x 3	5.10
TVL-38	40+20+10/10	475/25	1 1/2 x 2	3.95
TVL-39	10+10+10+10	475	1 1/2 x 3	5.50
TVL-40	40+20+10+10	475	1 1/2 x 3	5.50

\*Diameter x Length in inches.

### INSULATING TUBES

These closed-top black insulating sleeves are made of tightly fitting Kraft-board. Order with capacitors as required.

Cat. No.	Description	Cat. No.	Description
HKT-1	For 1" x 2" can	HKT-5	For 1 1/2" x 2" can
HKT-2	For 1" x 2 1/2" can	HKT-6	For 1 1/2" x 2 1/2" can
HKT-3	For 1" x 3" can	HKT-7	For 1 1/2" x 3" can
HKT-4	For 1" x 4" can	HKT-8	For 1 1/2" x 3 1/2" can
		HKT-9	For 1 1/2" x 4" can

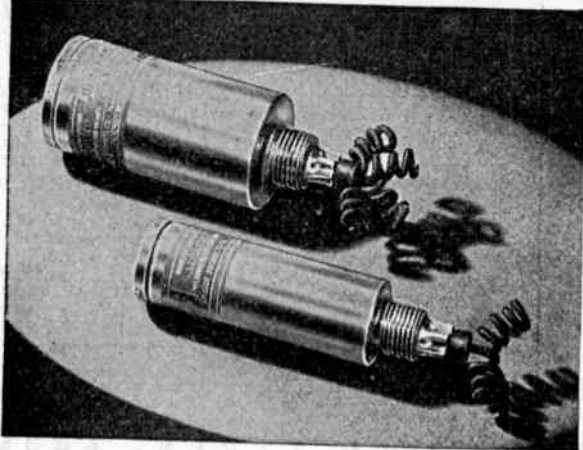
\*Overall Diameter x Length in inches.

★ Trademark © T. M. Reg. U.S. Pat. Off.

# SPRAGUE CAPACITORS



## SPRAGUE PLS "TINY MIKE" 450V



Type PLS Capacitors can be used with complete dependability on applications where much larger, old-style can-type dry electrolytics were previously necessary. Their exceptional quality and dependability in minimum size are made possible by the exclusive Sprague etched foil process which permits high capacity with very small leakage currents and low power factor. Aluminum cans have threaded bushing and locknut at one end for mounting. Separate positive leads and common negative leads are provided for capacitor sections. Special ring clamps are available for upright mounting. (See Hardware, page P-80.)

**CONTINUOUS WORKING VOLTAGE 450 VOLTS  
MAXIMUM SURGE VOLTAGE 525 VOLTS**

Catalog No.	Mfd.	Voltage		Dimensions		List Price
		DC working	Surge	D	L	
PLS-4	4	450	525	1%	2 1/8"	\$1.70
PLS-8	8	450	525	1%	2 1/8"	1.75
PLS-12	12	450	525	1%	2 1/8"	2.15
PLS-16	16	450	525	1%	2 1/8"	2.40
PLS-20	20	450	525	1%	2 1/8"	2.65
PLS-25	25	450	525	1%	3 1/8"	2.85
PLS-30	30	450	525	1%	3 1/8"	3.00
PLS-40	40	450	525	1%	3 1/8"	3.40
PLS-48	4-8	450	525	1%	2 1/8"	2.50
PLS-88	8-8	450	525	1 1/2%	2 1/8"	2.75
PLS-816	8-16	450	525	1 1/2%	2 1/8"	3.25
PLS-216	16-16	450	525	1 1/2%	8 1/8"	3.50
PLS-888	8-8-8	450	525	1 1/2%	2 1/8"	4.25

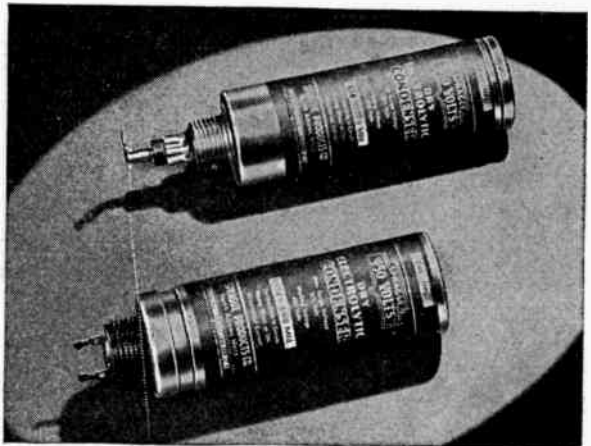
## SPRAGUE LS ALUMINUM CAN TYPES, 450V

Popular units for replacing older can type capacitors. May be mounted in any position. Standard mounting through chassis by threaded bushing on can. Packed with mounting hardware and insulating washers for use where can must be insulated from chassis. Special ring mounting clamps are available for upright mounting with can partly extending through panels or chassis. (See Hardware, page P-80.)

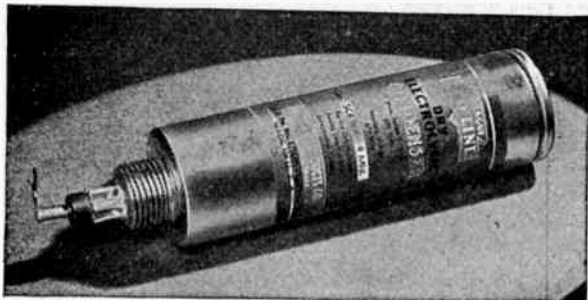
**TYPE LS UNITS** have the can as negative terminal, and lug terminals for anode connections.

**CONTINUOUS WORKING VOLTAGE 450 VOLTS  
MAXIMUM SURGE VOLTAGE 525 VOLTS**

Catalog No.	Mfd.	Voltage		Dimensions		List Price
		DC working	Surge	D	L	
LS-8	8	450	525	1%	2 1/8"	\$1.75
LS-12	12	450	525	1%	2 1/8"	2.15
LS-16	16	450	525	1%	2 1/8"	2.40
LS-20	20	450	525	1%	2 1/8"	2.65
LS-25	25	450	525	1%	3 1/8"	2.85
LS-30	30	450	525	1%	3 1/8"	3.00
LS-40	40	450	525	1%	3 1/8"	3.40
LS-88	8-8	450	525	1%	2 1/4"	2.75



## SPRAGUE SC INVERTED SCREW CAN MOUNTING TYPE, 475V (WITH CAN AS NEGATIVE TERMINAL)



Can type dry electrolytics especially designed for the exacting continuous duty requirements of public address and power amplifier work. High surge voltage rating provides extra safety in high-current power supplies where high peaks often occur. Unexcelled for "extra tough" service replacement uses. Provided with threaded bushing for standard mounting in any position. Can is the negative terminal in all units. Positive terminal is lug connection. Supplied with mounting nut, and insulating washer to insulate can from chassis. Special ring clamps are available for upright mounting. (See Hardware, page P-02.)

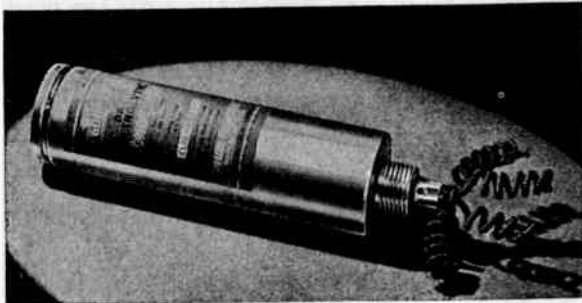
**CONTINUOUS WORKING VOLTAGE 475 VOLTS  
MAXIMUM SURGE VOLTAGE 600 VOLTS**

Catalog No.	Mfd.	Voltage		Dimensions		List Price
		DC working	Surge	D	L	
SC-4	4	475	600	1	3 7/8"	\$1.90
SC-8	8	475	600	1%	4 1/8"	2.25
SC-12	12	475	600	1%	4 1/8"	3.15
SC-16	16	475	600	1%	4 1/8"	3.50
SC-88	8-8	475	600	1%	4 1/4"	3.65

# SPRAGUE CAPACITORS



## SPRAGUE CL INVERTED SCREW CAN MOUNTING TYPE, 475V (WITH CAN INSULATED FROM SECTIONS)

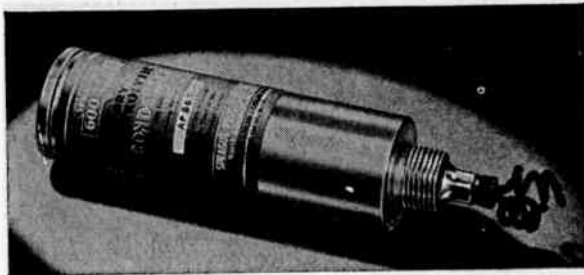


These can-type dry electrolytics are similar to Type SC Capacitors except that the can is insulated from the filter sections. Separate positive and negative terminal leads for each section. Especially recommended for high gain, high power amplifiers where minimum inter-stage coupling through power supply is desired. Special ring clamps are available for upright mounting. (See Hardware, p. P-62.)

CONTINUOUS WORKING VOLTAGE 475 VOLTS  
MAXIMUM SURGE VOLTAGE 600 VOLTS

Catalog No.	Mfd.	Voltage		Dimensions		List Price
		DC working	Surge	D	L	
CL-8	8	475	600	1 1/2"	4 1/8"	\$2.25
CL-16	16	475	600	1 1/2"	4 1/8"	3.50
CL-88	8.8	475	600	1 1/2"	4 1/8"	3.65

## SPRAGUE AP HIGH-VOLTAGE CAN TYPES, 600V



These sturdy can-type units are outstandingly popular for all public address and theater applications where the working voltage is high and surges run well over 600 volts. These high capacities and high voltage ratings are obtained by use of balanced dry electrolytic sections connected in series, assuring long, trouble-free performance. Full capacity, full working voltage and low power factor are GUARANTEED.

CONTINUOUS WORKING VOLTAGE 600 VOLTS  
MAXIMUM SURGE VOLTAGE 800 VOLTS

Catalog No.	Mfd.	Voltage		Dimensions		List Price
		DC working	Surge	D	L	
AP-46	4	600	800	1"	4 1/8"	\$3.00
AP-86	8	600	800	1 1/2"	4 1/8"	4.00
AP-16	16	600	800	1 1/2"	4 1/8"	5.00

## NEW! SPRAGUE TO-3 DELUXE TEL-OHMIKE

Universal Capacitance and Resistor  
Analyzer with Built-in DC  
Volt-milliammeter



\$59.70 net

This fast, simplified operation is the keynote of the new TO-3 De Luxe Tel-ohmike. "Speedy check" locates open, intermittent, or shorted condensers WITHOUT REMOVING THEM FROM THE CIRCUIT. One pair of plainly marked binding posts and a total of only five controls assure quick, effective operation on all tests. Dial is of direct-reading, calibrated type, color coded to correspond to selector switch. It is easy to see, easy to read. In addition to all of its uses in radio work, Tel-ohmike checks motor-starting condensers, and measures insulation resistance of motors, transformers, etc.

### SPECIFICATIONS

Capacity: .00001-2,000 MFD.  
in 4 ranges.

Power Factor: 0-50% at 60 cycles.

Insulation Resistance: 0-2500 Megohms (Direct reading on the meter).

Electrolytic Leakage: Measured in MA. at rated D.C. voltage.  
Capacity and power factor of electrolytic condensers

measured with rated polarizing voltage applied.

Resistance: 2.5 Ohms-25 Mega. in 3 ranges.

D.C. Meter Range: 0-15, 150, 750 volts — 0-1.5, 15, 75 MA.

Size: 13 1/4" wide, 10 1/2" high, — 5" deep.

Power: 35 watts at 115 volts — 60 cycle.

Shipping Weight: 15 lbs.

SPRAGUE PRODUCTS COMPANY, NORTH ADAMS, MASS.

# SPRAGUE CAPACITORS



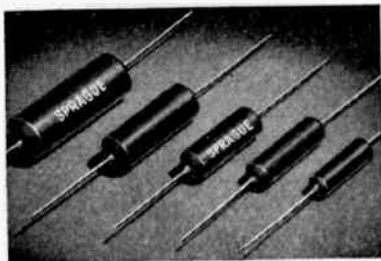
## SPRAGUE MOLDED TELECAPS Greatest Paper Tubular Advance in 20 Years!

Highly Heat Resistant  
Moisture Resistant  
Non-Inflammable

Conservatively Rated  
Small in Size  
Mechanically Rugged

### Completely Insulated

The new Sprague Molded Tubulars listed here are the result of more than four years' intensive research — and one of the largest retooling programs in Sprague history!



The unique high-temperature molded construction of these units assures maximum dependability, even under extremes of heat, humidity, and physical stress. They're especially recommended for use in auto radios, in small ac-dc sets that get hot, or for any application which is "tough" on normal, waxed paper units.

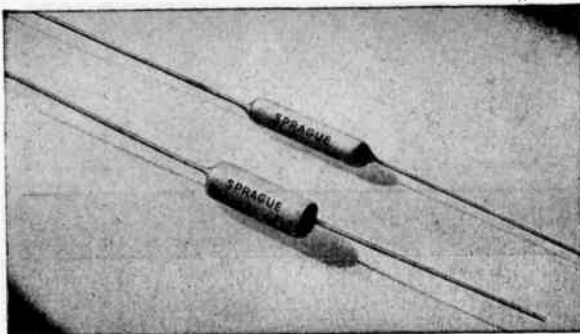
### TYPE TM — 200, 400 AND 600 VOLTS

Catalog No.	Mfd.	Voltage DC Working	Dimensions D	L	List Price
TM-12-2	.02	200	1/8	1	\$0.25
TM-15-2	.05	200	3/8	1 1/4	.30
TM-1-2	.1	200	1/8	1 1/4	.35
TM-2-2	.25	200	3/8	1 1/4	.40
TM-5-2	.5	200	3/8	1 1/4	.60
TM-10-2	1.0	200	3/8	2 1/4	.90
TM-11-4	.01	400	1/8	1	.25
TM-12-4	.02	400	3/8	1 1/4	.25
TM-15-4	.05	400	3/8	1 1/4	.30
TM-1-4	.1	400	3/8	1 1/4	.35
TM-2-4	.25	400	3/8	1 1/4	.40
TM-5-4	.5	400	3/8	2 1/4	.60
*TC-31	.0001	600	3/8	1 1/4	.25
*TC-325	.00025	600	3/8	1 1/4	.25
*TC-34	.0004	600	3/8	1 1/4	.25
*TC-35	.0005	600	3/8	1 1/4	.25

## SPRAGUE 68P MIDGET\* TUBULARS WHERE SPACE IS AT A PREMIUM

Sprague 68P type capacitors are the ultimate in extra small paper tubular capacitors. These midget capacitors are especially designed for miniature radio applications where space saving is a prime factor. These units are of fundamentally new engineering design and construction. The outstanding humidity performance which these capacitors exhibit is a result of this new construction.

\* Trade Mark



### TYPE TM — (Continued)

Catalog No.	Mfd.	Voltage DC working	Dimensions D	L	List Price
TM-21	.001	600	3/8	1	\$0.25
TM-22	.002	600	3/8	1	.25
TM-23	.003	600	3/8	1	.25
TM-24	.004	600	3/8	1	.25
TM-25	.005	600	3/8	1 1/4	.25
TM-26	.006	600	3/8	1 1/4	.25
TM-11	.01	600	3/8	1 1/4	.30
TM-12	.02	600	3/8	1 1/4	.30
TM-13	.03	600	3/8	1 1/4	.35
TM-14	.04	600	3/8	1 1/4	.35
TM-15	.05	600	3/8	1 1/4	.40
TM-16	.06	600	3/8	1 1/4	.45
TM-1	.1	600	3/8	1 1/4	.40
TM-2	.25	600	3/8	2 1/4	.55
*TC-5	.5	600	3/8	2 1/4	.80
*TC-10	1.0	600	3/8	2 1/4	1.25

\* Supplied in waxed cardboard units pending completion of molds.

### TYPE MB — 1600 VOLTS

Catalog No.	Mfd.	Voltage DC working	Dimensions D	L	List Price
*TR-35	.0005	1600	3/8	1 1/4	\$0.55
*TR-21	.001	1600	3/8	1 1/4	.55
MB-22	.002	1600	3/8	1 1/4	.55
MB-23	.003	1600	3/8	1 1/4	.55
MB-24	.004	1600	3/8	1 1/4	.55
MB-25	.005	1600	3/8	1 1/4	.55
MB-26	.006	1600	3/8	1 1/4	.55
MB-27	.007	1600	3/8	1 1/4	.55
MB-275	.0075	1600	3/8	1 1/4	.55
MB-28	.008	1600	3/8	1 1/4	.60
MB-11	.01	1600	3/8	1 1/4	.60
MB-115	.015	1600	3/8	1 1/4	.60
MB-12	.02	1600	3/8	1 1/4	.60
MB-13	.03	1600	3/8	1 1/4	.60
*TR-14	.04	1600	3/8	2 1/4	.70
*TR-15	.05	1600	3/8	2 1/4	.70
*TR-215	2 x .015	1600	3/8	2	.80

\* Supplied in waxed cardboard units pending completion of molds.

### TYPE TVM — 6 AND 10 KV

Catalog No.	Mfd.	Voltage DC working	Dimensions D	L	List Price
TVM-356	.0005	6000	1/2	1 1/2	\$1.35
TVM-216	.001	6000	1/2	1 1/2	1.35
TVM-256	.005	6000	3/8	1 1/4	1.35
TVM-351	.0005	10000	3/8	1 1/4	1.50

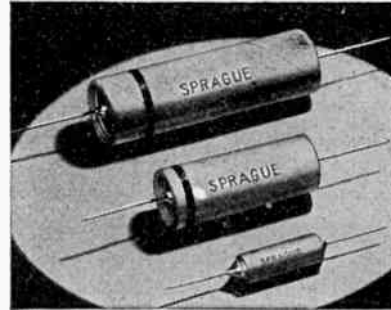
Catalog No.	Mfd.	Voltage DC working	Dimensions D	L	List Price
68P26	.001	600	1/4	1	\$0.35
68P27	.002	600	1/4	1	.35
68P28	.003	600	1/4	1	.35
68P29	.004	600	1/4	1	.35
68P30	.005	600	1/4	1	.40
68P31	.006	600	1/4	1	.40
68P32	.008	600	1/4	1	.40
68P33	.01	600	1/4	1	.45
68P34	.02	600	1/4	1	.50
68P35	.05	600	1/4	1 1/4	.55
68P36	.1	600	1/4	1 1/4	.70
68P40	.2	600	1/4	1 1/4	.80
68P40	.2	600	1/4	1 1/4	.80
68P37	.25	600	1/4	2	.80
68P1	.001	400	1/4	1 1/4	.35
68P3	.003	400	1/4	1 1/4	.35
68P4	.004	400	1/4	1 1/4	.35
68P5	.005	400	1/4	1 1/4	.35
68P6	.005	400	1/4	1 1/4	.35
68P8	.01	400	1/4	1 1/4	.40
68P9	.02	400	1/4	1	.45
68P10	.05	400	1/4	1	.50
68P21	.1	400	1/4	1 1/4	.65
68P38	.2	400	1/4	1 1/4	.70
68P22	.35	400	1/4	1 1/4	.75
68P23	.5	400	1/4	2 1/4	.85
68P11	.005	200	1/4	1 1/4	.35
68P12	.006	200	1/4	1 1/4	.35
68P14	.01	200	1/4	1 1/4	.40
68P15	.02	200	1/4	1 1/4	.45
68P16	.05	200	1/4	1	.50
68P17	.1	200	1/4	1	.60
68P18	.2	200	1/4	1 1/4	.65
68P24	.25	200	1/4	1 1/4	.70
68P25	.5	200	1/4	1 1/4	.80
68P19	.25	100	1/4	1 1/4	.70
68P20	.5	100	1/4	1 1/4	.80

# SPRAGUE CAPACITORS



## SPRAGUE PX HERMETICALLY-SEALED OIL-IMPREGNATED METAL TUBULARS, 600V AND 1000V DC

Here is your answer to every need calling for higher-voltage tubular capacitors in the smallest possible size for real dependability under difficult operating conditions. Sprague Type PX Capacitors consist of specially wound sections, impregnated with an exclusive Sprague oil and hermetically sealed in metal containers for long trouble-free service. Each unit is supplied with an external sleeve to insulate it from the chassis and other metal parts. Mounting may be made by means of the tinned copper leads  $2\frac{1}{2}$ " long, or by standard Sprague Mounting straps (see Hardware page P-R0.)



Catalog No.	Mfd.	Voltage DC working	Dimensions		List Price
			D	L	
PX-316	.0001	600	$\frac{1}{2}$	$1\frac{1}{4}$	\$0.95
PX-3256	.00025	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-356	.0005	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-216	.001	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-226	.002	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-236	.003	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-246	.004	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-256	.005	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-266	.006	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-276	.007	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-286	.008	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-296	.009	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-116	.01	600	$\frac{1}{2}$	$1\frac{1}{4}$	.95
PX-126	.02	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.05
PX-136	.03	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-146	.04	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-156	.05	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-166	.06	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-186	.08	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-16	.1	600	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-26	.25	600	$\frac{1}{2}$	2	1.70
PX-56	.5	600	$1\frac{1}{2}$	2	2.20
PX-106	1.0	600	$1\frac{1}{2}$	3	3.00
PX-311	.0001	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-3251	.00025	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-351	.0005	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-211	.001	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-221	.002	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-231	.003	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10

Catalog No.	Mfd.	Voltage DC working	Dimensions		List Price
			D	L	
PX-241	.004	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-251	.005	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-261	.006	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-271	.007	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-281	.008	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-291	.009	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-111	.01	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.10
PX-121	.02	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-131	.03	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-141	.04	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-151	.05	1000	$\frac{1}{2}$	$1\frac{1}{4}$	1.30
PX-161	.06	1000	$1\frac{1}{2}$	2	1.35
PX-181	.08	1000	$1\frac{1}{2}$	2	1.40
PX-11	.1	1000	$1\frac{1}{2}$	2	1.50
PX-21	.25	1000	$1\frac{1}{2}$	2	2.00
PX-51	.5	1000	$1\frac{1}{2}$	3	2.85
PX-2215	.002	1500	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-2515	.005	1500	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-1115	.01	1500	$\frac{1}{2}$	$1\frac{1}{4}$	1.20
PX-1215	.02	1500	$\frac{1}{2}$	$1\frac{1}{4}$	1.30
PX-352	.0005	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-212	.001	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-252	.005	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-262	.006	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-2752	.0075	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-112	.01	2000	$\frac{1}{2}$	$1\frac{1}{4}$	1.25
PX-122	.02	2000	$\frac{1}{2}$	$2\frac{1}{4}$	1.35
PX-132	.03	2000	$\frac{1}{2}$	$2\frac{1}{4}$	1.40
PX-142	.04	2000	$\frac{1}{2}$	$2\frac{1}{4}$	1.40
PX-152	.05	2000	$\frac{1}{2}$	$2\frac{1}{4}$	1.45

## SPRAGUE AR & LR AUTO GENERATOR AND VIBRATOR TYPES

Exceptionally sturdy design to withstand the bouncing and vibration of automobile use is a feature of these Automobile Generator and Vibrator types. They are oil-impregnated and metal-encased for long service under difficult conditions of heat and humidity.

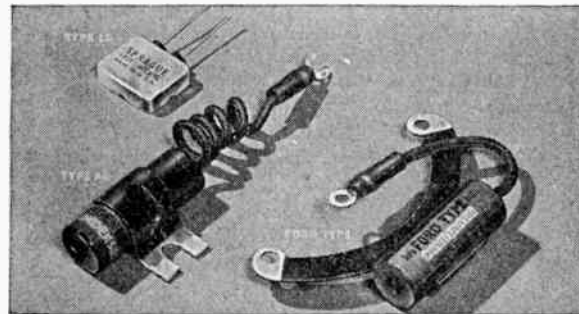
The Ford Type has a special mounting bracket to accommodate cars of this make. All units are conservatively rated, and designed to withstand high surge voltages. Full capacity-true voltage ratings.

### AR (GENERATOR TYPES)

Catalog No.	Mfd.	Voltage DC working	Dimensions		List Price
			D	L	
AR-1	1.0	400	1	$2\frac{1}{2}$	\$0.90
AR-2	.5	400	$1\frac{1}{2}$	$1\frac{1}{2}$	.65
AR-25	.5-.5	400	1	$2\frac{1}{2}$	1.00
AR-Ford	.5	400	$1\frac{1}{2}$	$1\frac{1}{2}$	.85

### LR (VIBRATOR TYPES)

Catalog No.	Mfd.	Voltage DC working	Dimensions			List Price
			D	L	R	
LR-11	.01	1600	$\frac{1}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	\$0.80
LR-12	.02	1600	$\frac{1}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	.80
LR-27	.007	1600	$\frac{1}{4}$	$\frac{7}{8}$	$1\frac{1}{2}$	.80



## SPRAGUE SPECIAL AUTOMOBILE TYPES

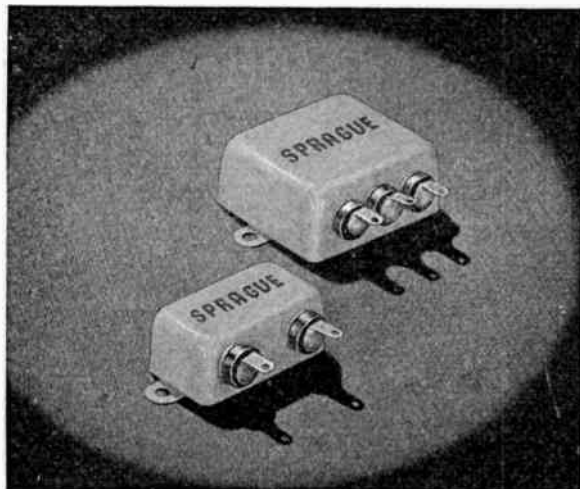
Designed for special automobile services as indicated in the table, the Sprague capacitors listed at the right are equipped with suitable mounting features.

Catalog No.	Mfd.	Voltage DC working	Dimensions		List Price
			D	L	
DL-1—Dome Light Filter	.2	200	1	$2\frac{1}{2}$	\$1.10
GG-5—Gas Gauge Filter	.05	200	$1\frac{1}{2}$	$1\frac{1}{2}$	.50
OG-50—Oil Gauge Filter	.25	200	$1\frac{1}{2}$	$1\frac{1}{2}$	.60
P-2077—Ford Replacement	.5	200	$1\frac{1}{2}$	$1\frac{1}{2}$	.65
P-3402—Ammeter Capacitor	.5	200	$1\frac{1}{2}$	2	.65
P-2153—Motorola Replacement	.0008-.0008	1000	$\frac{1}{4}$	$1\frac{1}{2}$	.65

# SPRAGUE CAPACITORS



## SPRAGUE BP METAL-ENCASED BATHTUB UNITS (WITH SIDE TERMINALS)



These popular units are styled for use where the most severe conditions of heat and moisture must be met. They are oil impregnated and filled with KVO\*. Mounting flanges or ears are integral parts of the containers.

\* Trademark applied for.

Catalog No.	Mfd.	Voltage DC working	Dimensions			List Price
			L	W	H	
BP-1	.1	400	1 1/4	1	3/8	\$1.75
BP-25	.25	400	1 1/4	1	3/8	2.00
BP-50	.5	400	1 1/4	1	3/8	2.15
BP-10	1.0	400	2	1 1/4	3/8	2.60
BP-21	.1-.1	400	1 1/4	1	3/8	2.75
BP-225	.25-.25	400	1 1/4	1	3/8	3.00
BP-250	.5-.5	400	2	1 1/4	3/8	3.50
BP-31	.1-.1-.1	400	1 1/4	1	3/8	3.40
BP-56	.05	600	1 1/4	1	3/8	2.60
BP-16	.1	600	1 1/4	1	3/8	2.65
BP-256	.25	600	1 1/4	1	3/8	2.80
BP-506	.5	600	1 1/4	1	3/8	3.00
BP-106	1.0	600	2	1 1/4	3/8	3.40
BP-206	2.0	600	2	2	1 1/8	4.55
BP-2056	.05-.05	600	1 1/4	1	3/8	3.30
BP-216	.1-.1	600	1 1/4	1	3/8	3.35
BP-2256	.25-.25	600	1 1/4	1	3/8	3.40
BP-2506	.5-.5	600	2	1 1/4	3/8	3.90
BP-116	1.0-1.0	600	2	2	1 1/8	4.80
BP-316	.1-.1-.1	600	1 1/4	1	3/8	3.80
BP-3256	.25-.25-.25	600	2	2	1 1/8	4.30
BP-356	.5-.5-.5	600	2	2	1 1/8	5.20
BP-51	.05	1000	1 1/4	1	3/8	2.75
BP-11	.1	1000	1 1/4	1	3/8	2.85
BP-251	.25	1000	1 1/4	1	3/8	2.95
BP-501	.5	1000	2	1 1/4	3/8	3.20
BP-101	1.0	1000	2	2	1 1/8	4.00
BP-2051	.05-.05	1000	1 1/4	1	3/8	3.50
BP-211	.1-.1	1000	1 1/4	1	3/8	3.60
BP-2251	.25-.25	1000	2	2	1 1/8	3.80
BP-2501	.5-.5	1000	2	2	1 1/8	4.95
BP-311	.1-.1-.1	1000	1 1/4	1	3/8	4.15
BP-3251	.25-.25-.25	1000	2	2	1 1/8	5.00

## SPRAGUE OT POPULAR, INEXPENSIVE ROUND CAN TRANSMITTING TYPES, 600V TO 3000V

Catalog No.	Mfd.	Voltage DC working	D	Dimensions		List Price
				L	R	
OT-26	2	600	2	2 1/4	1 1/4	\$4.95
OT-11	1	1000	2	2 1/4	1 1/4	4.20
OT-21	2	1000	2	3 1/4	1 1/4	5.70
OT-41	4	1000	2	5 1/4	1 1/4	7.25
OT-515	0.5	1500	2	2 1/4	1 1/4	4.55
OT-115	1	1500	2	2 1/4	1 1/4	5.30
OT-215	2	1500	2	4 1/4	1 1/4	7.25
OT-12	1	2000	2	4 1/4	1 1/4	6.85
OT-22	2	2000	2 1/2	4 1/4	1 1/4	7.60
OT-13	1	3000	2 1/2	4 1/4	1 1/4	13.75

Long a favorite with amateurs, broadcasters, etc., throughout the world. Impregnated and filled with KVO\*. Rated to conform with tube and circuit design requirements. As with other Sprague high-voltage transmitting types, each unit is equipped with ceramic terminals and LIFE-GUARD Safety Caps. Mounting clamp is provided. Unconditionally guaranteed when used as specified.

\* Trademark applied for.



## SPRAGUE HIGH-K Disc Ceramics

Tiny, tough and dependable for bypass and coupling uses in television and f-m sets as well as standard a-m receivers are Sprague's Type 29C and 86C Disc Ceramic Capacitors. Millions of these new Sprague units have been used by leading set makers.

Disc Ceramic Capacitors consist of a thin, round wafer of a very high dielectric constant ceramic with silvered electrodes fired on both faces of the disc. Unidirectional leads are soldered to the silvering, and a coating of moisture-resistant, insulating resin is applied to the capacitor. Each capacitor is then clearly stamped in large figures with its capacity value.

Because of the construction of these space-saving capacitors, they have a very low inherent inductance, and are extremely efficient as high frequency bypass capacitors—For this reason, you will find them literally scattered across the sockets of the miniature tubes used in television and f-m receiver. Disc Ceramic Capacitors are also used effectively as coupling capacitors in audio circuits. They are not recommended for use in resonant or frequency determining applications.

Catalog No.	Mfd.	WVDC	List Price	
			Each	Env. of 5
29C4	.001	500	\$.25	\$1.25
29C3	.0015	500	.25	1.25
29C2	.002	500	.25	1.25
29C1	.005	500	.25	1.25
36C1	.01	500	.30	1.50
29C7	2x.001	500	.40	2.00
29C6	2x.0015	500	.40	2.00
29C5	2x.002	500	.40	2.00
36C2	2x.004	500	.45	2.25



# SPRAGUE CAPACITORS



## OIL-FILLED TRANSMITTING CAPACITORS

Filled with

### KVO

(KILO-VOLT-OIL — The Sprague wartime research oil development)

### SPRAGUE CR

(With Universal Mounting Feature)

An oil-filled transmitting capacitor is no better than the oil with which it is filled—and Sprague brings you the best! KVO\*—Kilo Volt Oil—is the result of extensive laboratory research and engineering tests and has proved its excellence throughout the world during the war in capacitors used on practically every type of equipment. KVO retains its dielectric efficiency at low temperatures to a greater extent than any other type of oil in common use. High insulation resistance and low power factor are maintained over a very broad range of operating temperatures. Oil-filled capacitors are essential for high-voltage use, and you can rely upon Sprague KVO units under all conditions. Terminals are insulated from the cans for AT LEAST TWICE the working voltage. Capacitor sections are hermetically sealed in sturdy rectangular metal cans which can be automatically grounded through the mounting clamps.

For special industrial applications, where extremely high insulation resistance requirements must be met, Sprague can supply special dielectric materials.



CR Capacitors are of convenient rectangular shape and have handy adjustable universal flanges for mounting in any position. Each unit is labelled with operating information based on industry standards and, in accordance with Sprague custom, ALL RATINGS ARE CONSERVATIVE. No need to "play safe" by buying most costly, higher-voltage transmitting capacitors than you actually need.

Unconditionally guaranteed against breakdown when used as specified.

\*Trademark applied for.

## FREE! LIFEGUARD PROTECTIVE CAPS

Don't run any chance of getting hold of a "hot one!" Each Sprague Type KVO Capacitor comes to you equipped with the famous Sprague 'Lifeguard' Protective Insulating Caps at no extra charge. They afford maximum protection at all times.

BUY LIFEGUARDS FOR YOUR OLD CAPACITORS  
LG-1—1.1st price per pair, 30¢



## SPRAGUE PC INVERTED ROUND SCREW CAN TRANSMITTING TYPES, 600V TO 1500V

These popular Sprague TYPE PC inverted round screw can capacitors are filled (NOT just impregnated) with KVO\*, the famous Sprague 500°F. flash protection oil that has the added advantage of retaining its dielectric efficiency at low temperatures. The PC Capacitors find a wide field of usefulness in such applications as public address systems, medium-voltage transmitters, television and high-gain amplifiers. THEY ARE RATED CONSERVATIVELY and labelled according to industry standards. Ample safety factor is assured. Units include spade washer and insulating lug to insulate the round metal can containers from the chassis. Ring clamp is available for upright mounting. (See page P-80.)

\*Trademark applied for.

Catalog No.	Mfd.	Voltage DC working	—Dimensions—			List Price
			T	W	L	
CR-056	.5	600	1 1/4	1 1/4	2 1/4	\$4.15
CR-16	1.0	600	1 1/4	1 1/4	2 1/4	5.30
CR-26	2.0	600	1 1/4	1 1/4	2 1/4	6.45
CR-36	3.0	600	1 1/4	1 1/4	3 1/4	7.60
CR-46	4.0	600	1 1/4	1 1/4	3 1/4	8.35
CR-66	6.0	600	1 1/4	2 1/4	4 1/4	10.25
CR-86	8.0	600	1 1/4	3 1/4	3 1/4	12.15
CR-106	10.0	600	1 1/4	3 1/4	4 1/4	13.65
CR-011	.1	1000	1 1/4	1 1/4	1 1/4	3.80
CR-0251	.25	1000	1 1/4	1 1/4	2 1/4	4.15
CR-051	.5	1000	1 1/4	1 1/4	2 1/4	4.55
CR-11	1.0	1000	1 1/4	1 1/4	2 1/4	5.70
CR-21	2.0	1000	1 1/4	1 1/4	3 1/4	7.60
CR-41	4.0	1000	1 1/4	2 1/4	4 1/4	9.50
CR-81	8.0	1000	1 1/4	3 1/4	4 1/4	13.65
CR-101	10.0	1000	1 1/4	3 1/4	4 1/4	15.20
CR-121	12.0	1000	2 1/4	3 1/4	4 1/4	16.45
CR-151	15.0	1000	2 1/4	3 1/4	4 1/4	18.25
CR-0515	.5	1500	1 1/4	1 1/4	2 1/4	5.70
CR-115	1.0	1500	1 1/4	1 1/4	3 1/4	6.85
CR-215	2.0	1500	1 1/4	2 1/4	4 1/4	9.50
CR-415	4.0	1500	1 1/4	3 1/4	4 1/4	12.65
CR-515	5.0	1500	1 1/4	3 1/4	4 1/4	13.65
CR-815	8.0	1500	2 1/4	3 1/4	4 1/4	19.00
CR-1015	10.0	1500	3 1/4	3 1/4	4 1/4	22.80
CR-012	.1	2000	1 1/4	2 1/4	2 1/4	6.05
CR-0252	.25	2000	1 1/4	2 1/4	2 1/4	6.45
CR-052	.5	2000	1 1/4	2 1/4	2 1/4	6.85
CR-12	1.0	2000	1 1/4	2 1/4	3 1/4	8.35
CR-22	2.0	2000	1 1/4	3 1/4	4 1/4	9.85
CR-32	3.0	2000	1 1/4	3 1/4	4 1/4	12.15
CR-42	4.0	2000	2 1/4	3 1/4	3 1/4	13.65
CR-62	6.0	2000	3 1/4	3 1/4	4 1/4	17.85
CR-102	10.0	2000	4 1/4	3 1/4	4 1/4	27.85
CR-0125	.1	2500	1 1/4	2 1/4	2 1/4	9.35
CR-0525	.5	2500	1 1/4	3 1/4	3 1/4	10.65
CR-125	1.0	2500	1 1/4	3 1/4	3 1/4	12.15
CR-225	2.0	2500	1 1/4	3 1/4	4 1/4	19.60
CR-425	4.0	2500	4 1/4	3 1/4	4 1/4	27.20
CR-013	.1	3000	1 1/4	2 1/4	2 1/4	12.65
CR-0253	.25	3000	1 1/4	2 1/4	2 1/4	13.65
CR-053	.5	3000	1 1/4	2 1/4	4 1/4	15.20
CR-13	1.0	3000	2 1/4	3 1/4	3 1/4	18.25
CR-23	2.0	3000	3 1/4	3 1/4	4 1/4	22.80
CR-43	4.0	3000	4 1/4	3 1/4	4 1/4	33.40
CR-014	.1	4000	2 1/4	3 1/4	2 1/4	22.80
CR-0254	.25	4000	2 1/4	3 1/4	2 1/4	24.05
CR-054	.5	4000	2 1/4	3 1/4	3 1/4	27.20
CR-14	1.0	4000	2 1/4	3 1/4	5 1/4	33.40
CR-24	2.0	4000	4 1/4	3 1/4	5 1/4	42.40
CR-025	.2	5000	1 1/4	3 1/4	3 1/4	27.20
CR-055	.5	5000	2 1/4	3 1/4	4 1/4	30.40
CR-15	1.0	5000	4 1/4	3 1/4	4 1/4	38.00
CR-25	2.0	5000	4 1/4	3 1/4	6	48.60
CR-0160	.1	6000	2 1/4	3 1/4	3 1/4	30.40
CR-0260	.2	6000	1 1/4	3 1/4	4 1/4	38.00
CR-160	1.0	6000	4 1/4	3 1/4	7 1/4	75.95
CR-0175	.1	7500	2 1/4	3 1/4	3 1/4	43.05
CR-0275	.2	7500	1 1/4	3 1/4	4 1/4	45.60

Catalog No.	Mfd.	Voltage DC working	Dimensions		List Price
			D	L	
PC-26	2.0	600	1 1/4	2 1/4	\$4.15
PC-36	3.0	600	1 1/4	3 1/4	4.95
PC-46	4.0	600	1 1/4	4 1/4	5.70
PC-11	1.0	1000	1 1/4	2 1/4	3.80
PC-21	2.0	1000	1 1/4	4 1/4	4.95
PC-515	0.5	1500	1 1/4	2 1/4	4.55
PC-115	1.0	1500	1 1/4	3 1/4	4.95

# SPRAGUE CAPACITORS



## INTERFERENCE FILTERS

Sprague FILTEROL Radio Interference Filters are a direct outgrowth of highly successful Sprague wartime engineering research, and offer for civilian use a war-tested, practical filter that suppresses man-made radio noises and television "scrambles" on practically any application. They are small, completely self-contained, and easily installed. Applicable to any electrical device within their current and voltage ratings, they provide maximum noise suppression on radio broadcast bands. A study of the Attenuation Curve (available on request) illustrating typical FILTEROL noise suppression performance will show that this surpasses anything normally available in the past.

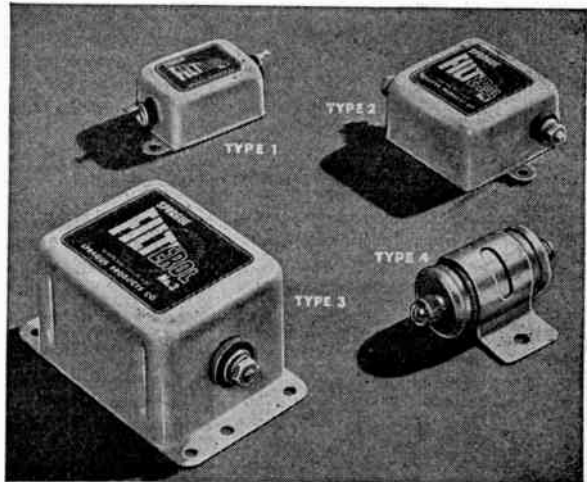
SPRAGUE FILTEROL TYPES 1, 2 and 3 are designed for connection in series with power supply lines to interference-producing devices. Their basic circuit is a special three-terminal network of which the can is one terminal. The filter selected should have a rating higher than the continuous running current of the device. A single FILTEROL connected in one side of the line is usually sufficient. However, in severe interference cases a FILTEROL in each power line may be necessary. For three-or-four wire systems, a FILTEROL in each wire is necessary.

FILTEROL TYPE 4 is a new, exclusive Sprague invention incorporating a Sprague \*HYPASS capacitor and provides exceptionally high attenuation at frequencies above 5MC. It is effective up to 150 MC or more. Intended for all small devices with continuous current ratings up to 20 amperes. Applied by mounting directly on the frame of the device to be filtered, and connecting the power supply line in series through the filter. In severe cases, a FILTEROL may be necessary in each line wire.

### SPRAGUE IF TYPES

IF-15—A TRIPLE-SECTION FILTER for all small motor-operated devices. Especially designed to prevent accidental shocks from discharge of filter capacitors.

IF-21—COMPACT DUAL METAL-ENCASED TUBULAR FILTER for use across brushes of fractional horsepower motors with can grounded to motor frame. Also across line terminals of motors.



IF-11—A DUAL HIGH-CAPACITY FILTER with completely enclosed safety construction. Designed for motors over 1 horsepower and up to 220 volts AC or DC. Also used on high-current arcing or sparking devices.

IF-S1—SINGLE 2-LEAD FILTER SECTION with can completely insulated. For use across make-and-break contacts.

IF-37—3-SECTION DELTA-CONNECTED FILTER. Only one IF-37 required for each fluorescent lamp fixture. Also effective on make-and-break governor-type motors.

\*Trademark Reg. U.S. Pat. Off.

†Trademark applied for.

### RATINGS

#### SPRAGUE FILTEROL TYPES

FILTEROL TYPE	Rating	Voltage	List Price
FILTEROL 1	1 AMP.	115V AC or DC	\$ 9.50
FILTEROL 2	10 AMP.	115V AC or DC	10.75
FILTEROL 3	35 AMP.	115V AC or DC	12.50
FILTEROL 4	20 AMP.	220V AC or DC	2.75

#### SPRAGUE IF TYPES

IF TYPE	Voltage	List Price
IF-15	220V AC or DC	\$1.90
IF-11	220V AC or DC	4.40
IF-21	220V AC or DC	1.55
IF-S1	220V AC or DC	1.15
IF-37	220V AC or DC	1.50

## SPRAGUE MICA CAPACITORS

### Twice Tested for R-F Characteristics

Sprague Mica Capacitors provide maximum quality for R-F applications where exacting requirements involving low-power factor and high-insulation resistance at high frequencies must be met. The line includes types for every requirement ranging from the tiny "tooth-pick" 1FM types to the giant ceramic-jacketed types 4CC. Each type incorporates outstanding developments based on far-reaching Sprague wartime engineering.

Mica units are perhaps the most critical of all capacitor types to produce properly—and it is in the handling of these essential details that Sprague engineering and production excels. Beginning with selection and handling of the mica itself, extreme care is taken in every operation to assure completed units which, although they look like conventional units on the surface, will far surpass ordinary mica capacitors in actual service.

Stocks of raw mica are carefully selected. So critical are Sprague requirements that far more mica is rejected than is actually selected for use. The selected mica is then hand split and each piece electrically graded by exclusive Sprague methods.

Particular care is exercised in the interleaving of section foils and in connecting them to terminals through specially designed low-resistance R-F bonds. Perhaps most important of all is the fact that each and every Sprague Mica Capacitor section receives a painstaking radio frequency test before being encased in its mold. After this test, each section is carefully impregnated and moisture-proofed prior to the molding operation.

Upon completion, all Sprague Mica Capacitors required to carry large R-F currents are actually R-F current tested for their peak ratings. This test combined with thorough testing before molding assures the serviceman, amateur, experimenter or industrial user of units of utmost dependability for any application or any condition of use.

## SPRAGUE MS SILVER MICA CAPACITORS

Catalog Nos.	Dimensions		
	L	W	T
MS-55 through MS-35	1.00	0.50	0.10
MS-36 through MS-23	0.75	0.37	0.08
MS-24 through MS-28	0.50	0.25	0.06
MS-29 through MS-11	0.25	0.12	0.04

Standard Capacity Tolerance ±5%

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
MS-55	.000005	500	1000	\$0.45
MS-41	.00001	500	1000	.40
MS-415	.000015	500	1000	.40
MS-42	.00002	500	1000	.40
MS-425	.000025	500	1000	.40
MS-43	.00003	500	1000	.40
MS-44	.00004	500	1000	.40
MS-45	.00005	500	1000	.40
MS-46	.00006	500	1000	.40
MS-47	.00007	500	1000	.40
MS-31	.0001	500	1000	.40
MS-32	.0002	500	1000	.45
MS-33	.0003	500	1000	.55
MS-34	.0004	500	1000	.65
MS-35	.0005	500	1000	.70
MS-36	.0006	500	1000	.80
MS-37	.0007	500	1000	.85
MS-38	.0008	500	1000	.95
MS-39	.0009	500	1000	1.00
MS-21	.001	500	1000	1.10
MS-22	.002	500	1000	1.35
MS-23	.003	500	1000	2.05
MS-24	.004	500	1000	2.15
MS-25	.005	500	1000	2.25
MS-26	.006	500	1000	2.40
MS-27	.007	300	600	2.60
MS-28	.008	300	600	2.80
MS-29	.009	300	600	3.10
MS-11	.01	300	600	3.40

# SPRAGUE CAPACITORS



## MICA TYPES (continued)



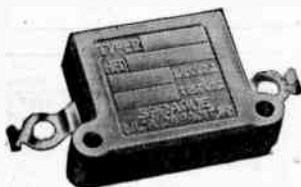
TYPES MS  
and 1FM



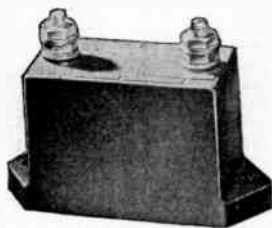
TYPES 3AFM  
3BFM and 3CFM



TYPES 7FM  
8FM and 9FM



TYPES XFM  
YFM and ZFM



TYPES 1MC  
and 2MC

## SPRAGUE 1FM STANDARD CAPACITY TOLERANCE ±20%

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
1FM-41	.00001	500	1000	\$0.25
1FM-42	.00002	500	1000	.25
1FM-44	.00004	500	1000	.20
1FM-45	.00005	500	1000	.20
1FM-475	.000075	500	1000	.20
1FM-31	.0001	500	1000	.20
1FM-315	.00015	500	1000	.20
1FM-32	.0002	500	1000	.20
1FM-325	.00025	500	1000	.25
1FM-335	.00035	500	1000	.25
1FM-34	.0004	500	1000	.25
1FM-35	.0005	500	1000	.25
1FM-37	.0007	500	1000	.25
1FM-21	.001	500	1000	.30
1FM-215	.0015	500	1000	.30
1FM-22	.002	500	1000	.40
1FM-23	.003	500	1000	.50
1FM-24	.004	500	1000	.55
1FM-25	.005	500	1000	.60
1FM-26	.006	500	1000	.75
1FM-27	.007	300	600	.90
1FM-28	.008	300	600	1.00
1FM-29	.009	300	600	1.00
1FM-11	.01	300	600	1.20

Catalog Nos.	Dimensions: L	W	T
1FM-44 through 1FM-35	1 1/8"	1/2"	1/16"
1FM-37 through 1FM-23	1 1/8"	1/2"	1/16"
1FM-24 through 1FM-28	1 1/8"	1/2"	1/16"
1FM-29 through 1FM-11	1"	5/8"	1/16"

## SPRAGUE 3AFM 3BFM & 3CFM STANDARD CAPACITY TOLERANCE ±10%

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
3AFM-25	.005	300	600	\$0.60
3AFM-26	.006	300	600	.75
3AFM-27	.007	300	600	.90
3AFM-28	.008	300	600	1.00
3AFM-11	.01	300	600	1.20
3AFM-115	.015	300	600	1.00

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
3BFM-31	.0001	500	1000	.20
3BFM-32	.0002	500	1000	.20
3BFM-325	.00025	500	1000	.25
3BFM-33	.0003	500	1000	.25
3BFM-34	.0004	500	1000	.25
3BFM-35	.0005	500	1000	.25
3BFM-21	.001	500	1000	.30
3BFM-215	.0015	500	1000	.30
3BFM-22	.002	500	1000	.40
3BFM-225	.0025	500	1000	.45
3BFM-23	.003	500	1000	.50
3BFM-24	.004	500	1000	.55
3BFM-25	.005	500	1000	.60
3BFM-26	.006	500	1000	.75
3BFM-27	.007	500	1000	.90
3BFM-28	.008	500	1000	1.00

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
3CFM-45	.00005	1000	2000	.60
3CFM-31	.0001	1000	2000	.60
3CFM-32	.0002	1000	2000	.60
3CFM-325	.00025	1000	2000	.60
3CFM-33	.0003	1000	2000	.70
3CFM-34	.0004	1000	2000	.70
3CFM-35	.0005	1000	2000	.70
3CFM-21	.001	1000	2000	.75
3CFM-215	.0015	1000	2000	.80
3CFM-22	.002	1000	2000	.80
3CFM-225	.0025	1000	2000	.80

Catalog Nos.	Dimensions: L	W	T
3AFM Types	1"	3/8"	1/16"
3BFM Types	1"	3/8"	1/16"
3CFM Types	1"	3/8"	1/16"

## SPRAGUE 7FM 8FM & 9FM STANDARD CAPACITY TOLERANCE ±10%

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
7FM-45	.00005	600	1200	\$0.85
7FM-31	.0001	600	1200	.85
7FM-315	.00015	600	1200	.85
7FM-32	.0002	600	1200	.85
7FM-325	.00025	600	1200	.85
7FM-35	.0005	600	1200	.85
7FM-21	.001	600	1200	.90
7FM-22	.002	600	1200	.90
7FM-225	.0025	600	1200	1.00
7FM-23	.003	600	1200	1.20
7FM-24	.004	600	1200	1.20
7FM-25	.005	600	1200	1.20
7FM-26	.006	600	1200	1.40
7FM-28	.008	600	1200	1.65
7FM-11	.01	600	1200	1.95
7FM-115	.015	600	1200	2.25
7FM-12	.02	600	1200	2.60
7FM-13	.03	600	1200	3.45
7FM-14	.04	600	1200	4.50
7FM-15	.05	600	1200	5.35
7FM-16	.06	600	1200	6.20

Catalog Nos.	Dimensions: L	W	T
7FM-45 through 7FM-13	1 3/8"	1 1/8"	1/16"
7FM-14 through 7FM-16	1 3/8"	1 1/8"	1/16"

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
8FM-45	.00005	1200	2500	\$1.00
8FM-31	.0001	1200	2500	1.00
8FM-315	.00015	1200	2500	1.00
8FM-32	.0002	1200	2500	1.00
8FM-325	.00025	1200	2500	1.00
8FM-35	.0005	1200	2500	1.00
8FM-21	.001	1200	2500	1.25
8FM-22	.002	1200	2500	1.90
8FM-225	.0025	1200	2500	2.00
8FM-23	.003	1200	2500	2.20
8FM-24	.004	1200	2500	2.20
8FM-25	.005	1200	2500	2.40
8FM-26	.006	1200	2500	2.40
8FM-28	.008	1200	2500	3.10
8FM-11	.01	1200	2500	3.90
8FM-115	.015	1200	2500	4.65
8FM-12	.02	1200	2500	5.45
8FM-125	.025	1200	2500	6.10
8FM-13	.03	1200	2500	6.40

Catalog Nos.	Dimensions: L	W	T
8FM-45 through 8FM-115	1 3/8"	1 1/8"	1/16"
8FM-12 through 8FM-13	1 3/8"	1 1/8"	1/16"

Catalog No.	Mfd.	—DC Voltage—		List Price
		Working	Test	
9FM-45	.00005	2500	5000	\$1.25
9FM-31	.0001	2500	5000	1.25
9FM-325	.00025	2500	5000	1.50
9FM-35	.0005	2500	5000	1.70
9FM-21	.001	2500	5000	2.05
9FM-22	.002	2500	5000	3.10
9FM-225	.0025	2500	5000	3.45
9FM-23	.003	2500	5000	3.80
9FM-24	.004	2500	5000	4.35
9FM-25	.005	2500	5000	4.70
9FM-26	.006	2500	5000	4.85
9FM-28	.008	2500	5000	5.30
9FM-11	.01	2500	5000	5.70
9FM-115	.015	2500	5000	6.20

Catalog Nos.	Dimensions: L	W	T
9FM-45 through 9FM-26	1 3/8"	1 1/8"	1/16"
9FM-28 through 9FM-115	1 3/8"	1 1/8"	1/16"



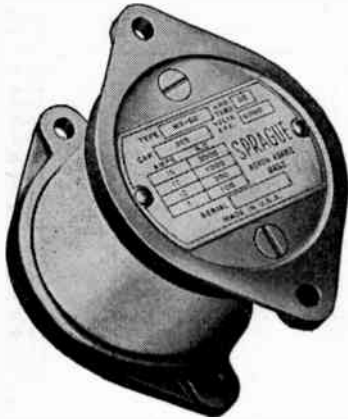
# SPRAGUE CAPACITORS



## MICA TYPES

(continued)

## SPRAGUE 3CC-4CC



TYPES 1CC, 2CC,  
3CC and 4CC

STANDARD CAPACITY TOLERANCE OF  
TYPES 3CC AND 4CC IS  $\pm 5\%$ .

3CC					4CC				
Catalog No.	Mfd.	Voltage AC Peak	List Price		Catalog No.	Mfd.	Voltage AC Peak	List Price	
3CC-45	.00005	20000	\$72.00		4CC-31	.0001	80000	\$114.00	
3CC-475	.000075	20000	78.00		4CC-315	.00015	80000	123.00	
3CC-31	.0001	20000	80.40		4CC-32	.0002	80000	132.00	
3CC-315	.00015	20000	80.40		4CC-33	.0003	80000	132.00	
3CC-32	.0002	20000	80.40		4CC-34	.0004	80000	132.00	
3CC-33	.0003	20000	80.40		4CC-35	.0005	80000	132.00	
3CC-34	.0004	20000	80.40		4CC-36	.0006	80000	132.00	
3CC-35	.0005	20000	80.40		4CC-37	.0007	80000	126.00	
3CC-36	.0006	20000	80.40		4CC-38	.0008	80000	126.00	
3CC-37	.0007	20000	80.40		4CC-21	.001	30000	126.00	
3CC-38	.0008	20000	78.00		4CC-215	.0015	25000	114.00	
3CC-21	.001	20000	78.00		4CC-22	.002	20000	114.00	
3CC-215	.0015	15000	78.00		4CC-23	.003	20000	120.00	
3CC-22	.002	15000	78.00		4CC-24	.004	15000	120.00	
3CC-23	.003	12000	78.00		4CC-25	.005	15000	138.00	
3CC-24	.004	12000	78.00		4CC-26	.006	15000	138.00	
3CC-25	.005	10000	79.20		4CC-27	.007	15000	144.00	
3CC-26	.006	10000	82.00		4CC-28	.008	12000	144.00	
3CC-27	.007	10000	84.00		4CC-29	.009	12000	144.00	
3CC-28	.008	10000	86.00		4CC-11	.01	10000	150.00	
3CC-11	.01	8000	90.00		4CC-115	.015	8000	144.00	
3CC-115	.015	5000	86.00		4CC-12	.02	6000	138.00	
3CC-12	.02	5000	86.00		4CC-13	.03	6000	138.00	
3CC-125	.025	3000	79.20		4CC-14	.04	5000	144.00	
3CC-13	.03	3000	79.20		4CC-15	.05	5000	150.00	
3CC-14	.04	3000	79.20		4CC-16	.06	5000	160.00	
3CC-15	.05	3000	79.20		4CC-17	.07	4000	165.00	
3CC-16	.06	3000	83.00		4CC-18	.08	3000	170.00	
3CC-17	.07	2000	86.00		4CC-1	.1	3000	180.00	
3CC-18	.08	2000	90.00						
3CC-1	.1	2000	95.00						

Catalog No.	Dimensions		Catalog No.	Dimensions	
	D	H		D	H
3CC	5	4	4CC	5	5%

## SPRAGUE HARDWARE

Sprague Mounting Clamps and Straps provide quick, dependable means for securing a wide variety of capacitors and resistors to a mounting surface. All clamps and straps are made from plated steel.

CMC Vertical Mounting Clamps for Cylindrical Capacitors (Figs. 1 and 2) are ideally suited for vertical or "above chassis" mounting of Sprague Capacitor Types AP, CL, DR, EL, HLV, LM, LS, OT, PC, PLS, RW, SC or other round can units.

The RMC Wrap Around Clamps for Rectangular Capacitors (Fig. 3) are designed for mounting Type CR Capacitors or other rectangular units.

Type TMS Mounting Straps for Tubular Capacitors (Fig. 4) fit any tubular capacitor or resistor having a diameter of between  $\frac{1}{4}$ " and  $1\frac{1}{2}$ ", inclusive. They may be used with Sprague Types AT, PX, SW, TA, TC, TR, TU, UHC, UT or other tubular units and with Sprague Koolohm Resistor Types 5KT/5NIT, 10KT/10NIT, 25KT/25NIT, 50KT/50NIT and 120KT/120NIT.

### VERTICAL MOUNTING CLAMPS FOR CYLINDRICAL CAPACITORS

Catalog No.	A Diameter	B Mounting Radius	Figure No.	List Price
CMC-12	$\frac{3}{8}$ "	$\frac{1}{2}$ "	1	\$0.08
CMC-16	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1	.08
CMC-20	$\frac{1}{4}$ "	$\frac{1}{2}$ "	1	.08
CMC-22	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1	.08
CMC-24	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1	.12
CMC-28	$\frac{1}{2}$ "	$1\frac{1}{4}$ "	1	.14
CMC-32	2	$1\frac{1}{4}$ "	2	.18
CMC-40	$2\frac{1}{2}$ "	$1\frac{1}{2}$ "	2	.18

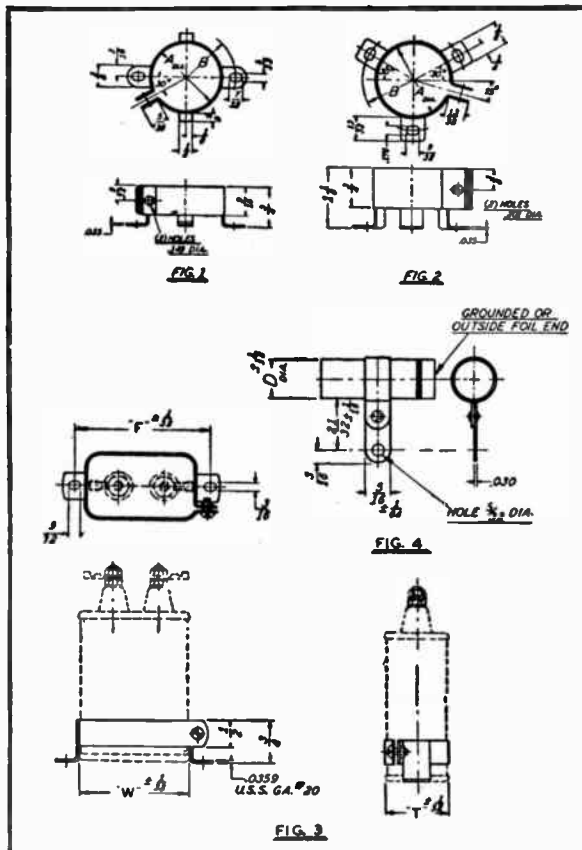
### WRAP AROUND CLAMPS FOR RECTANGULAR CAPACITORS

Catalog No.	Dimensions			Figure No.	List Price
	T	W	F		
RMC-17	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	$2\frac{1}{4}$ "	3	\$0.20
RMC-19	$1\frac{1}{2}$ "	$2\frac{1}{2}$ "	3	3	.20
RMC-20	$1\frac{1}{4}$ "	3%	$4\frac{1}{2}$ "	3	.20
RMC-28	1%	3%	$4\frac{1}{2}$ "	3	.20
RMC-36	$2\frac{1}{4}$ "	8%	$4\frac{1}{2}$ "	3	.25
RMC-40	$2\frac{1}{2}$ "	3%	$4\frac{1}{2}$ "	3	.25
RMC-51	3%	8%	$4\frac{1}{2}$ "	3	.30
RMC-73	$4\frac{1}{2}$ "	3%	$4\frac{1}{2}$ "	8	.40
RMC-128	8	4	$4\frac{1}{2}$ "	3	.50

### MOUNTING STRAPS FOR TUBULAR CAPACITORS

Catalog No.	Tube Diameter	Figure No.	List Price	Catalog No.	Tube Diameter	Figure No.	List Price
TMS-4	$\frac{1}{4}$ "	4	\$0.06	TMS-14	$\frac{3}{8}$ "	4	\$0.06
TMS-5	$\frac{1}{2}$ "	4	.06	TMS-15	$\frac{1}{2}$ "	4	.06
TMS-6	$\frac{3}{4}$ "	4	.06	TMS-16	1"	4	.10
TMS-7	$\frac{1}{2}$ "	4	.06	TMS-17	$1\frac{1}{8}$ "	4	.10
TMS-8	$\frac{3}{4}$ "	4	.06	TMS-18	$1\frac{1}{2}$ "	4	.10
TMS-9	$\frac{1}{2}$ "	4	.06	TMS-19	$1\frac{3}{8}$ "	4	.10
TMS-10	$\frac{3}{4}$ "	4	.06	TMS-20	$1\frac{1}{2}$ "	4	.15
TMS-11	$\frac{1}{2}$ "	4	.06	TMS-21	$1\frac{3}{8}$ "	4	.15
TMS-12	$\frac{3}{4}$ "	4	.06	TMS-22	$1\frac{1}{2}$ "	4	.15
TMS-13	$\frac{1}{2}$ "	4	.06				

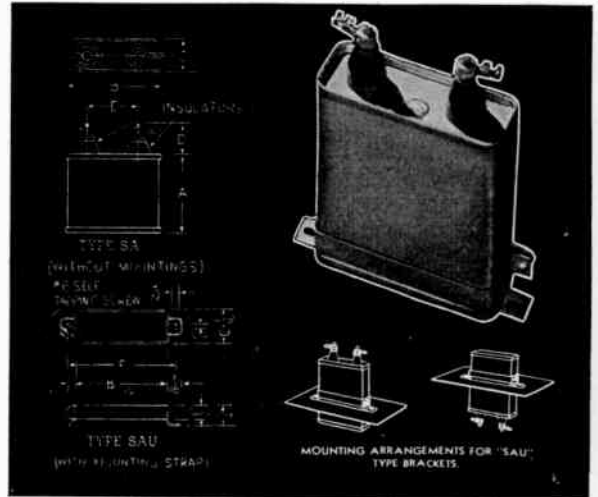
\*Trademark Reg. U. S. Pat. Off.



## TYPE "SA" OIL FILLED

1. INCCO OIL "A" IMPREGNATED AND FILLED—permitting efficient operation over widest range of temperatures.
2. HERMETICALLY SEALED CASE—is unaffected by time, humidity, or operating temperatures.
3. Use of HIGHEST GRADE CONDENSER TISSUES insures a long uninterrupted life.
4. HIGH-GLAZE PORCELAIN INSULATORS—insure low moisture absorption and high terminal to case flash over.
5. CONSERVATIVELY RATED—SAFE FOR CONTINUOUS OPERATION AT 10 PER CENT OVER-LOAD.
6. Use of "SPACE SAVER" UNIVERSAL MOUNTING BRACKET provides adjustable capacitor heights.
7. LEAD COATED STEEL CASE—IS NON-CORROSIVE and lacquer finished.
8. TESTED FOUR TIMES BEFORE SHIPMENT—guarantees a 100 per cent perfect product electrically and mechanically.

If riveted terminal construction is wanted in place of porcelain stand-off insulators add "R" to catalog number. For example, 6SA50 changes to 6SAR50. Submersion proof terminal construction to meet Army and Navy Specifications is optional; specify on order. Standard capacity tolerance plus or minus 10 per cent. Mounting brackets supplied in accordance with following catalog designations: TYPE SA—No mounting brackets. TYPE SAU—"Space Saver" universal bracket. TYPE SAJ—Soldered vertical mounting bracket. Type SAL—Reversible mounting foot bracket. TYPE SAH—Re-



versible spade bolt bracket. For example: The 8mfd. 600V. type with "Space Saver" bracket has catalog number 6SAU800. NOTE: To facilitate delivery we have standardized on container heights. In many cases units can be supplied in shorter containers if required.

600 V.D.C. WORKING										
Cat. No.	Cap. Mfd.	Dimensions in Inches								List Price
		A	B	C	D	E	F	H		
6SA50	.5	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	\$3.61	
6SA100	1.0	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	4.46	
6SA200	2.0	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	5.53	
6SA400	4.0	4 1/8	2 1/8	1 1/8	7/8	1 1/8	3	3	7.01	
6SA600	6.0	4 1/8	2 1/8	1 1/8	7/8	1 1/8	3	3	8.71	
6SA800	8.0	4	3 3/8	1 1/8	7/8	2	4	4 1/8	10.41	
6SA1000	10.0	4	3 3/8	1 1/8	7/8	2	4	4 1/8	11.69	
1000 V.D.C. WORKING										
10SA10	.1	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	3.19	
10SA25	.25	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	3.61	
10SA50	.5	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	3.83	
10SA100	1.0	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	4.89	
10SA200	2.0	4	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	6.38	
10SA400	4.0	4 1/8	2 1/8	1 1/8	7/8	1 1/8	3	3	8.08	
10SA600	6.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	10.84	
10SA800	8.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	11.69	
10SA1000	10.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	12.96	
1500 V.D.C. WORKING										
15SA50	.5	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	4.89	
15SA100	1.0	4	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	5.74	
15SA200	2.0	4 1/8	2 1/8	1 1/8	7/8	1 1/8	3	3	8.08	
15SA400	4.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	10.84	
15SA600	6.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	13.18	
2000 V.D.C. WORKING										
20SA10	.1	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	5.10	
20SA25	.25	2 2/8	1 1/8	1 1/8	7/8	3/4	2 1/4	2 1/4	5.53	

\* Where G dimension is given, two spade lugs or mounting holes

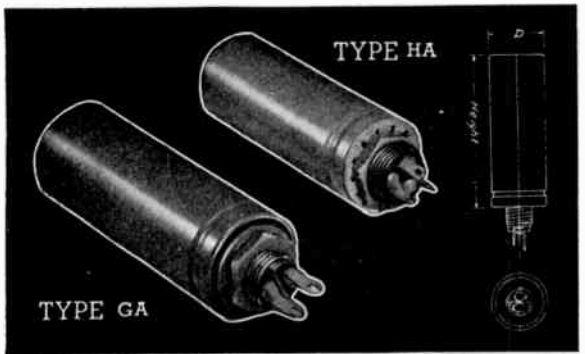
2000 V.D.C. WORKING										
Cat. No.	Cap. Mfd.	Dimensions in Inches								List Price
		A	B	C	D	E	F	*G	H	
20SA50	.5	2 2/8	1 1/8	1 1/8	7/8	1 1/8	3	3	\$5.74	
20SA100	1.0	4 1/8	2 1/8	1 1/8	7/8	2	4 1/8	4 1/8	7.01	
20SA200	2.0	4 1/8	3 3/8	1 1/8	7/8	2	4 1/8	4 1/8	8.29	
20SA400	4.0	4 1/8	3 3/8	2 1/8	7/8	2	4 1/8	4 1/8	11.69	
20SA600	6.0	4 1/8	3 3/8	3 3/8	7/8	2 1/8	2 1/8	2 1/8	15.51	
2500 V.D.C. WORKING										
25SA50	.5	4	3 3/8	1 1/8	1 1/8	2	4 1/8	4 1/8	8.93	
25SA100	1.0	3 3/8	3 3/8	1 1/8	1 1/8	2	4 1/8	4 1/8	10.20	
25SA200	2.0	4 1/8	3 3/8	1 1/8	1 1/8	2	4 1/8	4 1/8	16.58	
25SA400	4.0	4 1/8	3 3/8	4 1/8	1 1/8	2	4 1/8	3 3/8	23.16	
3000 V.D.C. WORKING										
30SA10	.1	2 2/8	2 1/8	1 1/8	1 1/8	1 1/8	3	3	10.84	
30SA25	.25	8 3/8	2 1/8	1 1/8	1 1/8	1 1/8	3	3	11.48	
30SA50	.5	4 1/8	2 1/8	1 1/8	1 1/8	1 1/8	3	3	12.96	
30SA100	1.0	4 1/8	3 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	15.51	
30SA200	2.0	4 1/8	3 3/8	3 3/8	1 1/8	2	4 1/8	2	19.34	
4000 V.D.C. WORKING										
40SA10	.1	2 2/8	3 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	19.34	
40SA25	.25	2 2/8	3 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	20.40	
40SA50	.5	4 1/8	3 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	23.16	
40SA100	1.0	5	8 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	28.48	
5000 V.D.C. WORKING										
50SA50	.5	4 1/8	8 3/8	2 1/8	1 1/8	2	4 1/8	4 1/8	25.71	
50SA100	1.0	4 1/8	8 3/8	4 1/8	1 1/8	2	4 1/8	3 3/8	32.30	
6000 V.D.C. WORKING										
60SA50	.5	7	8 3/8	3 3/8	2 1/8	1 1/8	4 1/8	2	4 1/8	51.64
60SA100	1.0	6 1/8	8 3/8	4 1/8	2 1/8	2	4 1/8	3 3/8	4 1/8	64.60

are supplied on each bracket.

## TYPES "GA" and "HA" OIL FILLED

These inverted mounting capacitors fill a definite need where chassis space is the prime factor.

Types "GA" and "HA" are INCCO Oil "A" impregnated and filled.



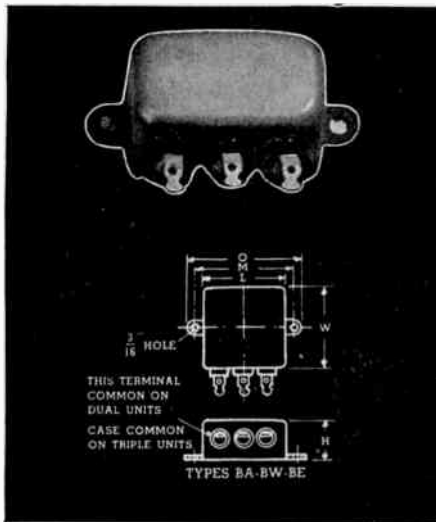
The case is a one-piece metal extrusion with a "locked-in" molded neck. This construction meets and surpasses the Army and Navy requirements for a submersion-proof capacitor.

Type "GA" is available in the seven standard rating listed below, but can also be supplied in other capacities and/or voltages to manufacturers' specifications.

In the standard "GA" and "HA" types the container is insulated. A grounding lug can be supplied for connecting one terminal to the case. Fiber washer for insulating container from chassis, when case is grounded, and insulating cover for insulating the container from adjacent equipment, can also be supplied on special order.

Type "HA" differs from "GA" in container and mounting neck size, and also in the fact that it has three insulated terminals. Primarily, type "HA" is supplied to manufacturers' specifications, to meet special requirements of multiple-section and multiple-terminal capacitors, with either insulated or grounded container.

Cat. No.	Cap. Mfds.	Voltage D.C.	Height	Case		List Price
				Diameter	Neck	
GA	GE	GW	1 1/8"	1 1/8"	3/8" x 16 thread	
HA	HE	HW	1 1/8"	1 1/8"	3/8" x 16 thread	
		Working				
6GA200	2	600	3"			\$4.15
6GA300	3	600	4 1/8"			4.95
6GA400	4	600	4 1/8"			5.70
10GA100	1	1000	3"			3.80
10GA200	2	1000	4 1/8"			4.95
15GA50	.5	1500	3"			4.55
15GA100	1	1500	4 1/8"			4.95



## DRY ELECTROLYTICS

Type "B" electrolytic capacitor is the first commercially available unit of this type with the reliability of the total submersion type, oil filled capacitors.

Wound with the highest purity aluminum foil and cellulose separators available; impregnated in electrolyte having excellent temperature characteristics, these units will outlive their associated equipment.

Cat. No.	Cap. in Mfds.	Volts	Dimen. in Inches				List Price
			L	W	H	M	
52BE10	10	25	1 1/8	1	2 1/8	\$2.70	
52BE25	25	25	1 1/8	1	2 1/8	2.70	
52BE50	50	25	1 1/8	1	2 1/8	2.80	
05BE10	10	50	1 1/8	1	2 1/8	2.75	
05BE25	25	50	1 1/8	1	2 1/8	2.75	
05BE50	50	50	1 1/8	1	2 1/8	3.00	

## Built to U. S. Signal Corps and Navy Specifications TYPE "BA" OIL FILLED

1. INCCO OIL "A" permits efficient operation of these compact units over the widest range of temperature.
2. The use of the HIGHEST GRADE CONDENSER TISSUE insures greater safety factor and longer life.
3. Specially PROCESSED RIVETED TERMINALS are designed to withstand total submersion in salt water and changes in temperature from 50° below zero Centigrade to 90° above zero Centigrade without loosening or losing their integrity.
4. CONDENSER MOUNTINGS form an integral part of these drawn shell containers insuring permanent and rigid fastenings.
5. All units are NON-INDUCTIVELY WOUND providing efficient operation over the widest range of frequencies.
6. HERMETICALLY SEALED, they are unaffected by time, temperature or humidity.
7. CONSERVATIVELY RATED for safe and continuous uninterrupted operation at 10% above rated voltage for the lifetime of associated equipment.
8. Tested at twice the rated voltage between terminals and twice the rated voltage plus 1000 from each terminal to case.

Cat. No.	Cap. in MFDS.	Dimensions in Inches				List Price
		L	W	H	O	
<b>600 V. D. C. WORKING</b>						
6BA05	.05	1 1/8	1	1 1/8	2 1/8	\$2.20
6BA10	.1	1 1/8	1	1 1/8	2 1/8	2.25
6BA25	.25	1 1/8	1	1 1/8	2 1/8	2.40
6BA50	.5	1 1/8	1	1 1/8	2 1/8	2.55
6BA100	1.0	2	1 3/8	1 1/8	2 3/8	2.90
6BA0505	.05-.05	1 1/8	1	1 1/8	2 1/8	2.80
6BA11	1-1	1 1/8	1	1 1/8	2 1/8	2.85
6BA22	.25-.25	2	1 3/8	1 1/8	2 3/8	2.90
6BA55	.5-.5	2	1 3/8	1 1/8	2 3/8	3.30
6BA111	1-1-1	1 1/8	1	1 1/8	2 1/8	3.25
6BA200	2	2	2	1 1/8	2 1/8	3.90
<b>1000 V. D. C. WORKING</b>						
10BA05	.05	1 1/8	1	1 1/8	2 1/8	2.35
10BA10	.1	1 1/8	1	1 1/8	2 1/8	2.40
10BA25	.25	1 1/8	1	1 1/8	2 1/8	2.50
10BA50	.5	2	1 3/8	1 1/8	2 3/8	2.70
10BA100	1.0	2	2	1 1/8	2 1/8	3.40
10BA0505	.05-.05	1 1/8	1	1 1/8	2 1/8	3.00
10BA11	1-1	1 1/8	1	1 1/8	2 1/8	3.10
10BA22	.25-.25	2	1 3/8	1 1/8	2 3/8	3.25

Above units also available in 200 V. D. C., 400 V. D. C. and 1500 V. D. C. on request.

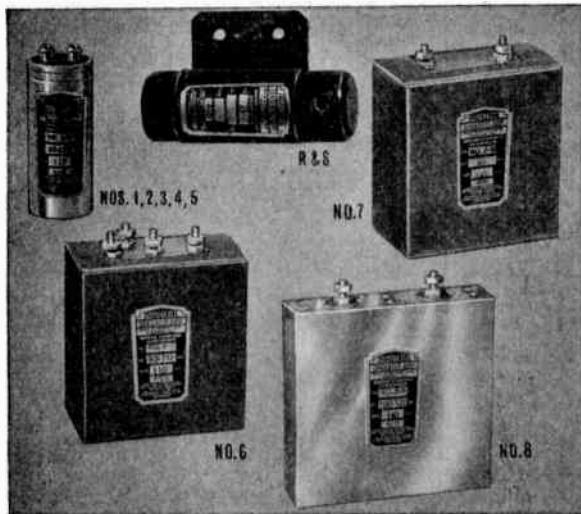
**NOTICE**—Most units are available with TERMINALS ON TOP, BOTTOM, OR ENDS. When ordering, add "T" for top terminals, "B" for terminals on bottom, or "E" for end terminals, i.e., 6BAT100 for terminals on top. Type "B" also available in WAX FILLED. When ordering, change catalog number A to W, i.e., 6BW100. If terminal position is not designated, side terminals are furnished. STANDARD CAPACITY tolerance of plus 20 per cent minus 10 per cent furnished on oil filled and wax filled units unless otherwise specified when ordering. Can be furnished in plus or minus 1 per cent capacity tolerance on special request.

## MOTOR STARTING CONDENSERS

These motor starting condensers are all heavy duty three second start. Built of the finest materials obtainable, these capacitors are engineered to the Nth degree of perfection. They are used by all the leading manufacturers of high quality motors.

The listings shown will take care of 90% of all your replacement requirements.

Number	Size, Inches	Capacity	List Price
MS145	1 3/8 Dia. x 3 1/4	45 - 70	\$1.90
MS170	1 3/8 Dia. x 3 1/4	70 - 85	2.00
MS185	1 3/8 Dia. x 3 1/4	85 - 115	2.05
MS1108	1 3/8 Dia. x 3 1/4	108 - 120	2.15
MS1120	1 3/8 Dia. x 3 1/4	120 - 150	2.25
MS1145	1 3/8 Dia. x 3 1/4	145 - 162	2.80
MS1161	1 3/8 Dia. x 3 1/4	161 - 190	2.90
MS1191	1 3/8 Dia. x 3 1/4	191 - 240	4.10
MS285	1 1/2 Dia. x 3 3/8	85 - 115	2.20
MS2120	1 1/2 Dia. x 3 3/8	120 - 150	2.30
MS390	2 Dia. x 4 1/2	90 - 115	3.05
MS3120	2 Dia. x 4 1/2	120 - 150	3.20
MS3245	2 Dia. x 4 1/2	245 - 300	4.20
MS3161	2 Dia. x 4 1/2	161 - 190	3.50
MS3191	2 Dia. x 4 1/2	191 - 240	3.85
MS3218	2 Dia. x 4 1/2	218 - 262	4.00
MS3234	2 Dia. x 4 1/2	234 - 286	4.20
MS3324	2 Dia. x 4 1/2	324 - 389	6.00
MS5100	3 Dia. x 4 1/2	100 - 115	3.10
MS690	3 1/2 x 4 x 2	90 - 115	3.30
MS6124	3 1/2 x 4 x 2	124 - 138	3.70
MS6145	3 1/2 x 4 x 2	145 - 162	4.30
MS780	3 1/2 x 4 x 2	80	3.20
MS750	3 1/2 x 4 x 2	50 - 65	3.05
R	Mounting Bracket for 1 3/8 x 3 1/4		.75
S	Mounting Bracket for 2 x 4 1/2		.95



SEND FOR BULLETIN No. 1075 WHICH LISTS OUR OIL FILLED MOTOR RUNNING CAPACITORS

## CAPACITORS TO 250,000 V.D.C.W.

INCCO OIL "A" IMPREGNATED AND FILLED assures smaller size, low power factor, and widest range of operating temperatures.

ELECTRIC ARC WELDED HEAVY GAUGE HOT TINNED STEEL CASES are non-corrosive—finished in durable lacquer.

GLAZED WET-PROCESS PORCELAIN INSULATORS—low moisture absorption and high terminal to case flash over.

WOUND WITH HIGHEST GRADE CONDENSER TISSUES—insures a long, uninterrupted life.

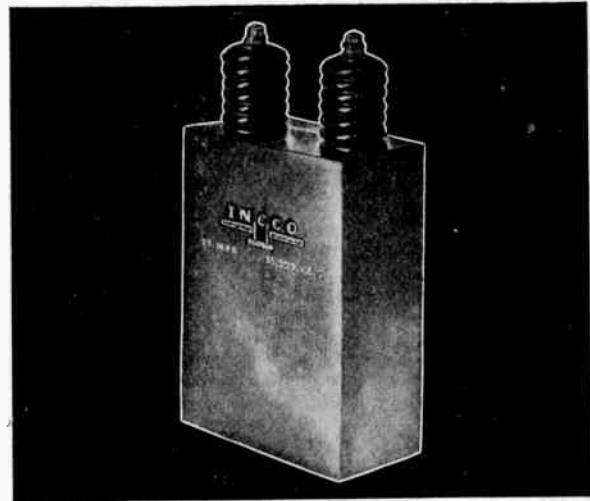
CONSERVATIVELY RATED—Safe for continuous operation at 10 per cent overload.

HERMETICALLY SEALED STEEL CASE — unaffected by time, humidity or operating temperatures.

AVAILABLE TO MEET U. S. SIGNAL CORPS AND NAVY SALT WATER SUBMERSION REQUIREMENTS.

### TYPE "WA" — HIGH VOLTAGE OIL FILLED CAPACITORS

Cat. No.	Cap. Mfd.	Case Dimensions in Inches			List Price
		Width	Length	Height	
<b>6,000 V. D. C. WORKING</b>					
60WA200	2.	4	8	11	\$108.00
60WA400	4.	4	12	11	
60WA500	5.	4	12	11	
60WA600	6.	4	12	13	
60WA1000	10.	6	12	13	
<b>7,500 V. D. C. WORKING</b>					
75WA50	.5	4	8	11	60.00
75WA100	1.	4	8	11	78.00
75WA200	2.	4	8	11	120.00
75WA400	4.	4	12	13	180.00
75WA600	6.	6	12	13	216.00
<b>10,000 V. D. C. WORKING</b>					
100WA100	1.	4	8	11	156.00
100WA200	2.	4	8	13	198.00
100WA400	4.	6	12	13	240.00
100WA500	5.	6	12	13	264.00
<b>12,500 W. D. C. WORKING</b>					
125WA50	.5	4	8	11	132.00
125WA100	1.	4	12	11	168.00
125WA200	2.	6	12	13	210.00
125WA500	5.	9½	12	15	396.00

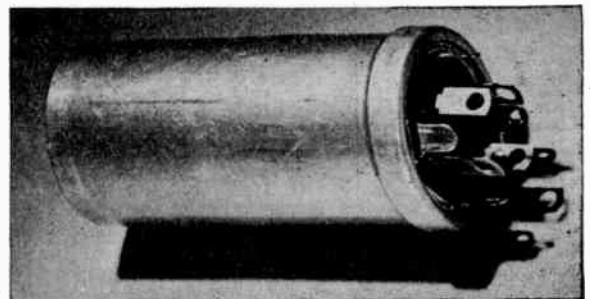


Cat. No.	Cap. Mfd.	Case Dimensions in Inches			List Price
		Width	Length	Height	
<b>15,000 V. D. C. WORKING</b>					
150WA25	.25	4	8	11	\$126.00
150WA50	.5	4	12	11	150.00
150WA100	1.	4	12	13	210.00
150WA200	2.	9½	12	15	276.00
150WA300	8.	9½	12	15	378.00
<b>20,000 V. D. C. WORKING</b>					
200WA25	.25	4	8	11	150.00
200WA50	.5	4	12	11	192.00
200WA100	1.	6	12	13	258.00
200WA150	1.5	9½	12	15	348.00
200WA200	2.0	9½	12	15	414.00
<b>25,000 V. D. C. WORKING</b>					
250WA20	.2	4	12	11	156.00
250WA25	.25	4	12	11	210.00
250WA50	.5	6	12	13	228.00
250WA100	1.	9½	12	15	342.00
<b>50,000 V. D. C. WORKING</b>					
500WA25	.25	6	13½	16%	*
500WA50	.5	7½	18	20	*
<b>80,000 V. D. C. WORKING</b>					
800WA25	.25	7½	18	20	*
<b>100,000 V. D. C. WORKING</b>					
1000WA20	.2	7½	18	20	*

\* Prices on application.

Catalog Number	Cap. Mfd.	D.C. Voltage Working	D.C. Voltage Surge	Dim. in Ins. Diam.	Dim. in Ins. Lg.	List Price
52ET100	100	25	35	1	2	\$1.25
15ET30	30	150	225	1	2	1.10
15ET50	50	150	225	1	2	1.25
45ET10	10	450	550	1	2	1.15
45ET15	15	450	550	1	2	1.35
45ET20	20	450	550	1	2½	1.50
45ET30	30	450	550	1	3	1.75
15ET2x20	20-20	150	225	1	2	1.35
15ET2x30	30-30	150	225	1	2	1.50
15ET2x50	50-50	150	225	1	3	1.80
30ET2x15	15-15	300	400	1	2	1.70
35ET3020	30-20	350	450	1	3	2.25
45ET2x10	10-10	450	550	1	2½	1.80
ET100	30-20/20	150/25	225/35	1	2	1.90
ET101	40-30/20	150/25	225/35	1	2½	2.05
15ET3x20	20-20-20	150	225	1	2	2.00
ET102	40-20-20	150	225	1	2½	2.10
15ET3x40	40-40-40	150	225	1	3	2.20
ET103	10-10/25	450/25	550/35	1	3	2.00
45ET3x10	10-10-10	450	550	1	3	2.15

### ET SERIES ELECTROLYTIC CAPACITORS



"ET" series capacitors have been designed for ease in installation and reliability. They are constructed to withstand the most severe operating conditions encountered in industrial and electronic equipment. Especially controlled manufacturing processes insure that the equipment in which these capacitors are used will function without interruption. Capacitors can be supplied for operation at temperatures ranging from minus 40 to plus 85 degrees Centigrade. Mounting is effected by inserting the capacitor through the slots in either the chassis or mounting plate, and twisting the mounting prongs 90 degrees.



# INDUSTRIAL



# CONDENSER

## TELEVISION AND TUBULAR PAPER CONDENSERS



### TYPE PT

INDUSTRIAL By-Pass Capacitors are non-inductively wound and designed for maximum efficiency up to the highest frequencies. The units themselves are completely impregnated and sealed with a special non-hygroscopic sealing compound, thus preventing moisture penetration under the most humid conditions.

Catalog Number	Capacity Mfd.	Working Volts D.O.	List Price
PT100	.0001	1000	\$0.20
PT101	.00025	1000	.20
PT102	.0005	1000	.20
PT103	.001	1000	.20
PT104	.002	1000	.20
PT105	.005	1000	.20
PT106	.006	1000	.20
PT107	.01	1000	.25
PT131	.001	600	.20
PT132	.002	600	.20
PT133	.005	600	.20
PT134	.006	600	.20
PT135	.01	600	.25
PT136	.02	600	.25
PT137	.03	600	.30
PT130	.04	600	.30
PT138	.05	600	.30
PT139	.1	600	.35
PT140	.25	600	.45
PT141	.5	600	.65
PT142	1.0	600	1.00
PT170	.01	400	.20
PT171	.02	400	.20
PT172	.05	400	.25
PT173	.1	400	.30
PT174	.25	400	.35
PT175	.5	400	.50
PT176	1.0	400	.75
PT200	.02	200	.20
PT201	.05	200	.20
PT202	.1	200	.25
PT203	.25	200	.35
PT204	.5	200	.45
PT205	1.0	200	.70
PT260*	.005	2000	.45
PT261*	.0075	2000	.45
PT262*	.01	2000	.45
PT263*	.02	2000	.50
PT264	.015-.015	1600	.80
PT268	.0005	6000	.75
PT265	.001	6000	.75
PT266	.005	6000	.75
PT269	.08	6000	1.10
PT267	.05	6000	1.15

\* Vibrator capacitor.

## RADIO INTERFERENCE ELIMINATORS

INDUSTRIAL CONDENSER CORP. has made a special study of the suppression of noises caused by fluorescent lighting. No. 7249 capacitor is designed with three leads, two leads to be connected across the 110 volt line and the single lead to be grounded. No. 4219 is housed in a metal container and is self grounding. It is supplied with strap mounting for easy installation. No. 4252 and No. 4253 are flat type units designed to mount on the ballast support of circline ballasts. The convenient mounting flap grounds the unit when the stem of the lamp is placed through the mounting hole.

Catalog Number	Dimensions in Inches	List Price
7249	1 1/4 x 1 3/4	\$1.00
4219	3/4 x 2	1.35
4252	2 1/2 x 5/8 x 1 1/2	1.50

## DIRECT REPLACEMENT

For Either Dry or Wet Types

No Drilling — No Changes

The "IL" type capacitor is a dry electrolytic assembled in an aluminum container having a threaded mounting neck which is an integral part of the container.

Our "IL" type capacitors may be used as replacements for the old type wet or dry electrolytic capacitors and will mount in the same mounting hole as the part replaced, eliminating the use of adaptors or auxiliary workmanship.

Electrically and mechanically this condenser is designed for heavy duty service. It incorporates the exclusive INDUSTRIAL etched foil process of construction.

Although these capacitors are not hermetically sealed, they are highly superior to the paper type units generally used for this kind of replacement.

These units are supplied with Underwriters Approved 75° C rubber covered leads.

Individually boxed in attractive carton with instructions.



### To replace 1 3/8" diameter screw neck type

Cat. No.	Cap. Mfd.	Work Volt	Peak Volt	Dimensions	Mtg. Neck	List Price	
IL649	8	600	725	1 3/8" x 4"	3/4"	\$3.40	
IL650	8	475	600	1 3/8" x 4"	3/4"	1.55	
IL651	12	475	600	1 3/8" x 4"	3/4"	1.83	
IL652	16	475	600	1 3/8" x 4"	3/4"	2.04	
IL653	4 leads	8-8	475	600	1 3/8" x 4"	3/4"	2.50
IL646	20	475	600	1 3/8" x 4"	3/4"	2.25	
IL647	30	475	600	1 3/8" x 4"	3/4"	2.55	
IL648	40	475	600	1 3/8" x 4"	3/4"	2.89	

## AUTO GENERATOR CONDENSER

ALSO AVAILABLE IN HERMETICALLY SEALED SUBMERSION-PROOF CONSTRUCTION



TYPE F



TYPE G

Completely enclosed in a metal container to overcome severe operating conditions of temperature and humidity. Sturdily built to withstand constant vibration.

Cat. No.	Cap. Mfd.	List Price	Cat. No.	Cap. Mfd.	List Price
G325	.25	\$0.77	G328	1.0	\$1.15
G326	.5	.85	F330	.5	1.06

## DRY ELECTROLYTIC CONDENSERS

### MIGHTY MIDGET METAL TUBULAR TYPE "MM"

Cat. No	Cap. Mfd.	Peak W.V.	Peak Volts	Dimen. Dia. L.	List Price
MM406	100	10	15	1 1/8 x 1 1/8	\$1.15
MM407	250	10	15	1 1/8 x 2 1/8	1.25
MM408	500	10	15	1 1/8 x 2 1/8	2.30
MM409	750	10	15	1 1/8 x 2 1/8	3.00
MM400	5	25	35	1 1/8 x 1 1/8	.70
MM401	10	25	35	1 1/8 x 1 1/8	.70
MM402	25	25	35	1 1/8 x 1 1/8	.75
MT403*†	10-10	25	35	1 1/8 x 2 3/8	.95
MM410	250	25	35	1 1/8 x 2 1/8	1.70
MM411	500	25	35	1 1/8 x 2 1/8	2.00
MM404	10	50	75	1 1/8 x 1 1/8	.70
MM405	25	50	75	1 1/8 x 1 1/8	.80
MM412	100	50	75	1 1/8 x 2 1/8	1.30
MM413	200	50	75	1 1/8 x 2 1/8	2.00
MM414	300	50	75	1 1/8 x 2 1/8	2.75
MM360	8	150	225	1 1/8 x 1 1/8	.70
MM368	12	150	225	1 1/8 x 1 1/8	.75
MM361	16	150	225	1 1/8 x 1 1/8	.80
MM362	20	150	225	1 1/8 x 2 1/8	.85
MM369	30	150	225	1 1/8 x 2 1/8	.90
MM363	40	150	225	1 1/8 x 2 1/8	1.00
MM373	60	150	225	1 1/8 x 2 1/8	1.20
MM374	80	150	225	1 1/8 x 2 1/8	1.30
MM370†	20-20	150	225	1 1/8 x 2 1/8	1.20
MM375†	30-30	150	225	1 1/8 x 2 1/8	1.35
MM376†	40-40	150	225	1 1/8 x 2 1/8	1.55
MM364	4	475	600	1 1/8 x 1 1/8	.80
MM365	8	475	600	1 1/8 x 2 1/8	.85
MM371	12	475	600	1 1/8 x 2 1/8	1.05
MM366	16	475	600	1 1/8 x 2 1/8	1.20
MM372	20	475	600	1 1/8 x 2 1/8	1.35
MM367†	8-8	475	600	1 1/8 x 2 1/8	1.50

\* In cardboard tube with wax filled ends. † 3 leads.

### MIGHTY MIDGET CARTON TYPE "MC"

Cat. No.	Cap. Mfd.	Peak W.V.	Peak Volts	Dimensions W. T. L.	List Price
MC451†	20-20	150	225	2 1/2 x 1 1/8 x 1 1/4	\$2.10
MC452	8	475	600	2 1/2 x 3/4 x 1 1/8	1.45
MC453†	4-4	475	600	2 1/2 x 1 1/8 x 1 1/4	1.90
MC454†	8-8	475	600	3 x 1 x 1 1/4	2.30

† 4 leads.

### "SB" AND "SM" TYPE

Cat. No	Cap. Mfd.	Peak W.V.	Peak Volts	Dimen. Dia. L.	List Price
SB550†	16-12	150	225	1 3/8 x 3 3/4	\$1.90
SB552†	8-8	475	600	1 3/8 x 3 3/4	1.90
SM600*	30-10	150	225	1 1/8 x 3	1.15
SM605*	20-20	150	225	1 1/8 x 2 1/2	1.15
SM606†	20-20	150	225	1 x 2 1/2	1.80
SM601*	30-30	150	225	1 1/8 x 3	1.30
SM608*	40-40	150	225	1 x 3	1.45
SM607*	50-30	150	225	1 x 3	1.45
SM610*	40-20	150	225	1 1/8 x 3	1.30
SM609†	30-20-20	150	225	1 x 3	1.70
SM603	8	475	600	1 1/8 x 3	1.05
SM604*	8-8	475	600	1 x 3	1.65

\* SM600, SM605, SM601, SM608, SM607, SM610: 3 leads.

† SM606, SM609, SB550, SB552: 4 leads.

An extremely popular type of condenser due to its exceptional high quality and midget size. Hermetically sealed in a small metal case and scientifically vented, to protect against adverse operating conditions of voltage, temperature and humidity. Container is insulated by a high grade tube which is spun over the ends of the can to eliminate shorts when wires are bent close to container. Easily mounted by their rigid wire leads.



Type MM

All Type "MM" units are available with mounting strap. Recommended in cases of extreme vibration or when advisable to have unit solidly anchored. When ordering add the letter S before the catalog number.



Type MMS

Each unit is completely embedded in a high grade wax and then sealed in an impregnated carton to insure efficient operation under the most adverse conditions. New, high voltage formation, gives complete protection against surges and high peak voltages. Supplied with color coded, Underwriters' Approved, rubber covered leads. Universal lugs permit easy mounting in any position.



Type MC

Spade bolt type "SB" of mounting has been very popular due to its wide use in many radio sets. Each unit is embedded in a high temperature wax and then sealed in a thoroughly impregnated cardboard tube, affording complete immunity to moisture penetration. New high voltage formation gives complete protection against surges and high peak voltages.



Type SB

Type "SM" has identical characteristics as "SB". The addition of the strap mounting bracket has proved favorable in its use due to its wide application in AC-DC and portable sets in the replacement field. The strap can be moved to the best mounting position and then bolted or soldered.



Type SM

Supplied with color-coded, Underwriters' Approved, rubber covered leads.



# FIXED and VARIABLE HIGH VOLTAGE VACUUM CAPACITORS

## SPECIFICATIONS

FIGURES	NICKEL TYPES	COPPER TYPES	CAPACITY M.M.F.O.	PEAK VOLTAGE KILOVOLTS	RMS AMPERES		OVERALL LENGTH	MAXIMUM O. D.	CONTACT DIAMETER	MOUNTING CENTERS
					NICKEL	COPPER				
18,12	VC	VCC	6, 12, 25, 50, 75, 100, 150	20, 25, 30	14	42	6 1/2	2 1/4	13/16	5 7/8
18,12	VC	VCC	200, 250	20, 25, 30	14	42	6 1/2	2 11/16	13/16	5 7/8
13	W		6, 12, 25, 50, 100	20	10.5		4 5/16	2 1/4	3/8	3 7/8
14	X		5, 10, 15, 20, 25	17	7		3 1/4	1 1/4	11/32	2 7/8
15	Y		1, 2, 3, 4, 5	17	7		3 1/4	7/8	11/32	2 7/8
6		JCS-1	25, 50, 75, 100, 150	7.5, 10, 15		28	3 5/8	2 1/2	55/64	3
5		JCS	250	7.5, 10, 15		42	3 5/8	2 5/8	55/64	3 1/8
4		JCS	500	7.5, 10		42	3 5/8	3 1/8	55/64	3 1/8
		JCS	1000	7.5, 10		42				
		JC-1	25	10, 15		21	4	1 1/2	9/16	3 5/16
7		JC-2	25, 50, 100	15, 20, 25		42	3 3/4	3 1/4	51/64	3 1/8
3		JC-3	20, 40, 50, 60	35, 40, 50, 60		140	8 1/4	4	2	6 5/8
2		JC-4	100, 125	35, 40, 50, 60		140	9 1/4	5	3 1/8	7
1		JC-5	200	35, 40, 50, 60		140	11 1/4	7	4 1/8	8 3/4
9	M	MC	500, 750, 1000	10, 15, 20	21	60	8 3/8	5	2	6 1/4
10	ML	MLC	500, 750, 1000	25, 30	21	60	9 1/4	5	2	7 1/4
9	MH	MHC	200 or less	35, 40, 50	21	60	8 1/2	5	2	6 3/8
8	MM	MMC	1500, 2000	10, 15	21	60	9 1/4	6 1/8	4 1/8	6 3/4
8	MMH	MMHC	450	35, 40, 45	21	60	9 3/8	6 1/8	4 1/8	6 13/16
11	K		50	35, 40, 50	14		8 1/2	3	13/16	7 3/4
21	T		5-25	20	10.5		6 1/4	2 1/4	1/2 x 5/8	4
22		TC	5-25	20		21	6 1/4	2 1/4	5/8	4
21	TR		2-8	17	10.5		6 1/2	2 1/4	11/32 x 5/8	4
22		TRCS	2-8	7.5, 10, 15		21	6 1/16	2 1/4	5/8	4
19	SS		10-30 per section	25, 30, 35	7		6 1/8	3	11/32 x 5/8	3 7/8 x 2 3/4
20		SSC-1	2-10 per section	10		15	6 1/16	2 5/8	9/16 x 5/8	1 1/2 x 3 7/8
21	AT		10-50	20, 25, 30	10.5		6 1/2	3	1/2 x 5/8	4 5/8
28		UCS	5-200	7.5, 10, 15		42	8 9/16	2 5/8	55/64 x 2	4 5/8
28		UCS	10-300	7.5, 10, 15		42	8 3/4	2 5/8	55/64 x 2	4 5/8
28		UCS	25-500	7.5, 10, 15		42	8 3/4	3	55/64 x 2	4 5/8
27		UCSX	10-500	7.5, 10		42	6 3/4	3 3/8	55/64 x 3 1/8	5 3/4
		UCSX	25-700	7.5, 10		42	6 5/8	3 3/4	2 x 3 1/8	4 7/16
		UCSX	100-1000	7.5, 10		42	6 7/8	3 3/4	2 x 3 1/8	4 11/16
26	U	UC	50-250	10, 15, 20	21	60	11 7/16	5	2	6 1/2
26	UH	UHC	10-75	35, 40, 50	21	60	11 7/16	5	2	6 1/2
26	UH	UHC	75-150	35, 40, 50	21	60	12	5	2	7 1/16
25	UX	UXC	40-560	10, 15	21	56	14	5	3 1/8	7 7/8
25	UXH	UXHC	25-150	35, 40, 50	21	60	14 5/8	5	3 1/8	8 1/4
24	VM	VMC	50-1000	10, 15	21	60	14	7	3 1/8	7 7/8
23	VMM	VMMC	100-2000	10, 15	21	85	15 1/4	6 1/8	4 1/8	8 3/8
23	VMMH	VMMHC	25-450	35, 40, 45	21	85	15 3/8	6 1/8	4 1/8	8 1/2
16		TAS-1 50-JR	2-10 per section Air-Cooled Tubes	10		21	7 3/4	2 7/8	9/16 x 5/8	1 1/2 x 3 7/8
17		TW-1 889-A	UXC 40-560 Water-Cooled Tube	5 KW			21	5	3 1/8	7 7/8
Also available in both air- and water-cooled units from 50 watts to 25 kilowatts. Write for details.										
30		R-1	Vacuum Relay	10		30	7	3	5/8	5 1/8
30		R-2	Vacuum Relay	15		7.5	9	3	5/8	7 1/4
29			Vacuum Transformer 2:1 step-up to 40 kv.				5 3/4	2 1/4	11/32	

CURRENT RATINGS MAY BE INCREASED BY FORCED COOLING WITH ADEQUATE MOUNTINGS  
CORRESPONDENCE INVITED FOR OTHER CAPACITIES AND VOLTAGES

JENNINGS RADIO MANUFACTURING COMPANY • 1098 E. WILLIAM STREET • SAN JOSE 12, CALIFORNIA

Originators, Exclusive Designers and Producers of JENNINGS

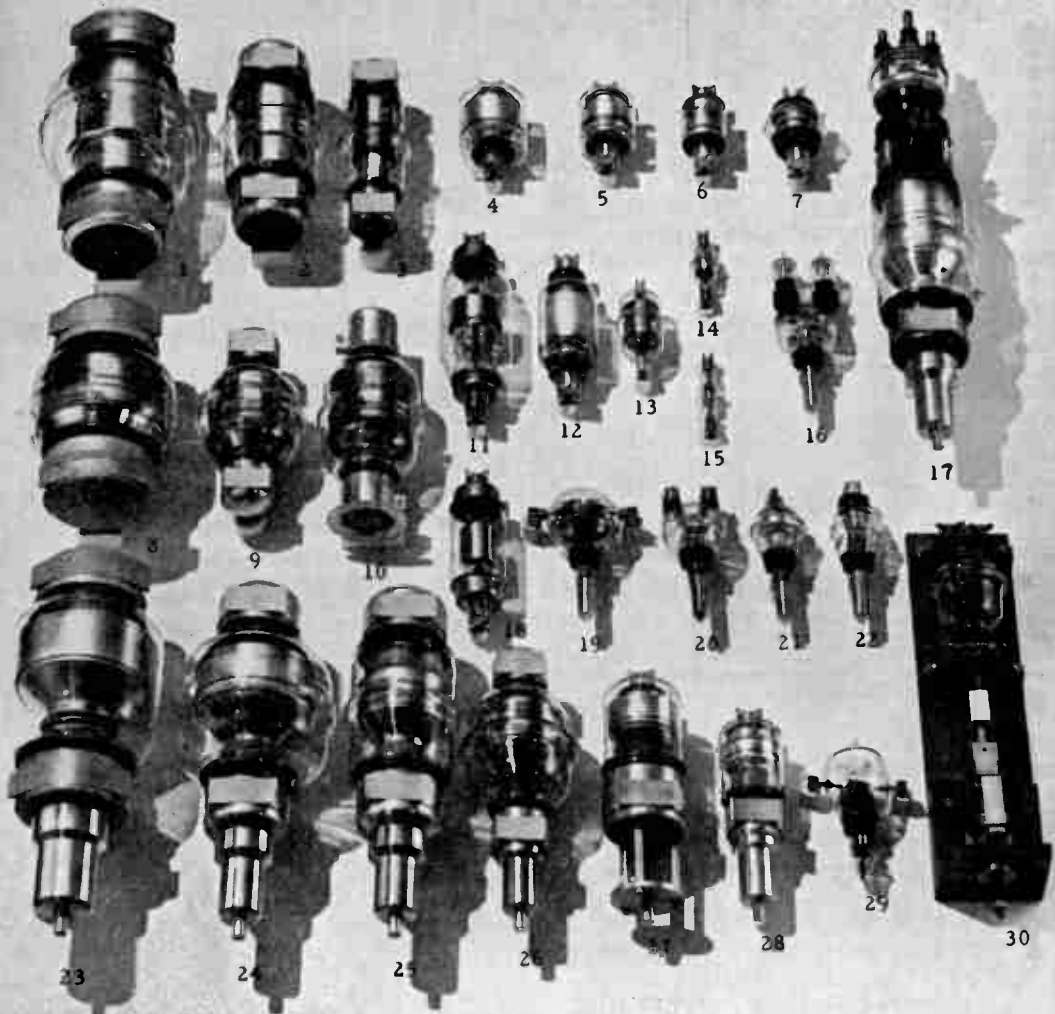
**Jennings**  
**RADIO**  
VACUUM ELECTRONIC COMPONENTS

**FIXED AND VARIABLE  
HIGH VOLTAGE VACUUM  
CAPACITORS**

Also **TRONADS** in both air- and water-cooled units from 50 watts to 25 kilowatts

Vacuum relay and transformer units

See opposite page for Specifications of the Jennings Fixed and Variable High Voltage Vacuum Capacitors and other items shown below. Watch Jennings for new developments in the field of Specialized Vacuum Electronic Components. Special Characteristics on a to-order basis. We welcome your inquiry and the opportunity to serve you.



JENNINGS RADIO MANUFACTURING COMPANY • 1098 E. WILLIAM STREET • SAN JOSE 12, CALIFORNIA



# CHICAGO CONDENSER CORPORATION

CHICAGO 47, ILLINOIS



TYPE NO.	CAP. MFD.	LENGTH	DIAMETER
<b>200 VOLTS D.C. OPERATING</b>			
25x2	1.0	2 1/2"	1"
2500	.5	2"	3/4"
2250	.25	1 3/4"	5/8"
2100	.1	1 5/8"	1/2"
2050	.05	1 1/4"	7/16"
2040	.04	1 1/4"	7/16"
2030	.03	1 1/4"	3/8"
2020	.02	1 1/4"	3/8"
2010	.01	1 1/4"	3/8"
<b>400 VOLTS D.C. OPERATING</b>			
45x2	1.0	2 1/2"	1"
4500	.5	2"	7/8"
4250	.25	2"	11/16"
4100	.1	1 5/8"	9/16"
4050	.05	1 5/8"	7/16"
4040	.04	1 5/8"	7/16"
4030	.03	1 5/8"	7/16"
4020	.02	1 1/4"	7/16"
4010	.01	1 1/4"	3/8"
<b>600 VOLTS D.C. OPERATING</b>			
6500	.5	2 1/2"	1 1/8"
6250	.25	2"	3/4"
6100	.1	1 7/8"	5/8"
6050	.05	1 5/8"	9/16"
6040	.04	1 5/8"	9/16"
6030	.03	1 5/8"	1/2"
6020	.02	1 5/8"	7/16"
6010	.01	1 1/4"	3/8"
6006	.006	1 1/4"	3/8"
6005	.005	1 1/4"	3/8"
6004	.004	1 1/4"	3/8"
6003	.003	1 1/4"	3/8"
6002	.002	1 1/4"	3/8"
6001	.001	1 1/4"	3/8"

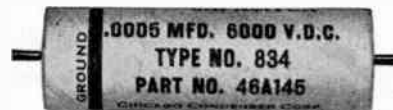
## CHICAGO WAX TUBULAR CAPACITORS



- NON-INDUCTIVELY WOUND
- HIGH VACUUM IMPREGNATION
- PAPER TUBES VACUUM WAXED
- TINNED COPPER WIRE
- END FILLED WITH HI-WAX
- FLASH TESTED 3 TIMES

### APPROVED TELEVISION CAPACITORS USED BY LEADING MANUFACTURERS

TYPE NO.	CAPACITY	LENGTH	DIAMETER
<b>6000 VOLTS D.C.</b>			
834	.0005	2"	5/8"
833	.001	2"	5/8"
850	.005	2 5/8"	1"
854	.03	3 1/2"	1 1/8"
832	.05	3 1/2"	1 1/2"



### CHICAGO OIL IMPREGNATED VACUUM FILLED CAPACITORS

BATH TUB TYPE CONDENSER  
BATH TUB TYPE RADIO & MOTORS  
INTERFERENCE • ELECTRONIC  
SPECIAL TIMING • HERMETICALLY SEALED  
TESTED AT THREE-TIME VOLTAGE



ALL SINGLE UNITS HAVE 2 TERMINALS—ALL DUAL UNITS HAVE 3 TERMINALS—ALL TRIPLE UNITS HAVE 3 TERMINALS—ONE GROUNDED TO CASE. OTHER UNITS HIGHER OR LOWER VOLTAGES CAN BE SUPPLIED UPON REQUEST.

# ARCO ELECTRONICS, INC.

## EL-MENCO CAPACITORS

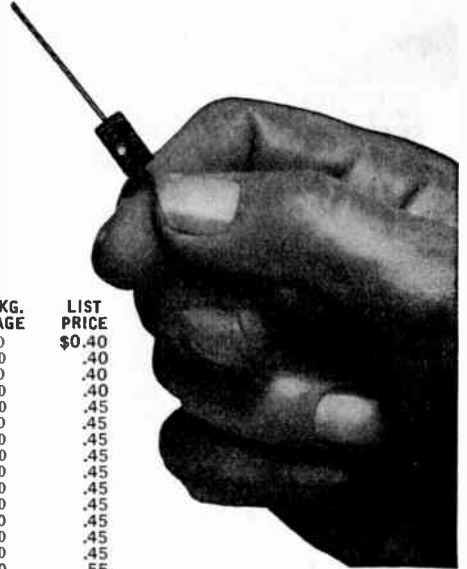
### MINIATURE MICA CAPACITORS

Known the world over for their reliability under all operating conditions, EL-MENCO CAPACITORS are chosen by manufacturers who want successful performance and long life from their products.

**SMALLER THAN YOUR FINGERNAIL  
BUT SKY HIGH IN PERFORMANCE**

EL-MENCO fixed mica dielectric capacitors are compact, precision made Manufactured in accordance with American military standards to meet Army and Navy JAN-C-5 Specifications. All impregnated and JAN, RMA and RCM color coded. Standard specification limits are shown below.

Moulded in low loss bakelite, tested at double the working voltage. Tests for dielectric strength, insulation resistance, temperature co-efficient and capacitance drift, humidity and life tests according to JAN and RCM STANDARDS. All units are wax dipped for salt water immersion seal.



#### TYPE CM-15

TYPE DESIGNATION	CAP. MMF.	DC WKG. VOLTAGE	LIST PRICE	TYPE DESIGNATION	CAP. MMF.	DC WKG. VOLTAGE	LIST PRICE
CM-15-E-010-M	1	500	\$0.50	CM-15-E-750-J	75	500	\$0.40
CM-15-E-020-M	2	500	.50	CM-15-E-820-J	82	500	.40
CM-15-E-030-M	3	500	.50	CM-15-E-910-J	91	500	.40
CM-15-E-050-K	5	500	.40	CM-15-E-101-J	100	500	.40
CM-15-E-100-J	10	500	.40	CM-15-E-111-J	110	500	.45
CM-15-E-120-J	12	500	.40	CM-15-E-121-J	120	500	.45
CM-15-E-150-J	15	500	.40	CM-15-E-131-J	130	500	.45
CM-15-E-180-J	18	500	.40	CM-15-E-151-J	150	500	.45
CM-15-E-200-J	20	500	.40	CM-15-E-161-J	160	500	.45
CM-15-E-220-J	22	500	.40	CM-15-E-181-J	180	500	.45
CM-15-E-240-J	24	500	.40	CM-15-E-201-J	200	500	.45
CM-15-E-270-J	27	500	.40	CM-15-E-221-J	220	500	.45
CM-15-E-300-J	30	500	.40	CM-15-E-241-J	240	500	.45
CM-15-E-330-J	33	500	.40	CM-15-E-251-J	250	500	.45
CM-15-E-360-J	36	500	.40	CM-15-E-271-J	270	500	.55
CM-15-E-390-J	39	500	.40	CM-15-E-301-J	300	500	.55
CM-15-E-430-J	43	500	.40	CM-15-E-331-J	330	500	.55
CM-15-E-470-J	47	500	.40	CM-15-E-361-J	360	500	.55
CM-15-E-500-J	50	500	.40	CM-15-E-391-J	390	500	.65
CM-15-E-510-J	51	500	.40	CM-15-E-431-J	430	500	.65
CM-15-E-560-J	56	500	.40	CM-15-E-471-J	470	500	.70
CM-15-E-620-J	62	500	.40	CM-15-E-501-J	500	500	.70
CM-15-E-680-J	68	500	.40	CM-15-E-511-J	510	500	.70

All the above are silver mica only. Temperature Co-efficient: 50 Parts per Million per degree C. (Characteristic "E"). Standard Tolerance:  $\pm 5\%$ . Closest Tolerance:  $\pm 5$  mmfd.

Actual Size  
9/32" x 1/2" x 3/16".  
For Television, Radio and other  
Electronic Applications.  
2 - 420 mmf. cap. at 500v DCA.  
2 - 535 mmf. cap. at 300v DCA.  
Temperature Co-efficient  $\pm 50$   
parts per million per degree  
C for most capacity values.  
6-dot color coded.

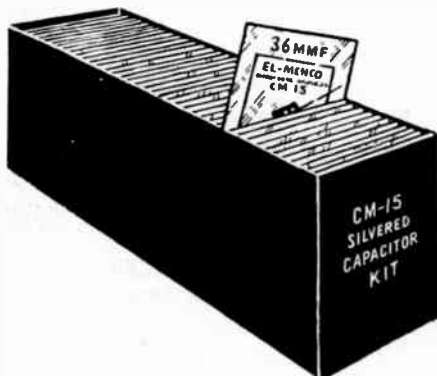
**Special! — HANDY KIT**

**FOR EXPERIMENTAL WORK**

*Don't Get Caught Short...*

**ALWAYS HAVE THE CORRECT**

**CAPACITY ON HAND**



This Handy Kit consists of 46 most commonly used Capacitors . . . five of each capacity packed in moisture-proof transparent cellophane envelope, properly identified for permanent use.

**YOUR PRICE ONLY \$50<sup>00</sup>**

The complete set of capacitors amounts to \$106.00 at list prices. You get the entire set during this introductory offer, for only \$50.00 net. On orders of 5 or 10 sets you get corresponding discounts on this reduced cost!

5 sets (15% discount) Only \$47.50 each!

10 sets (10% discount) Only \$45.00 each!

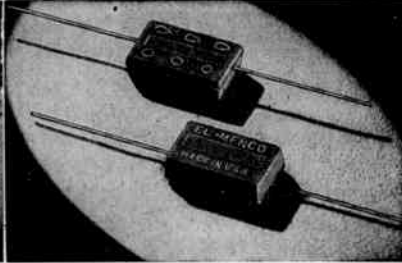
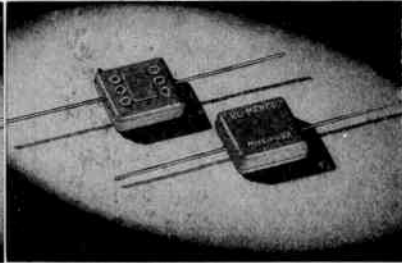
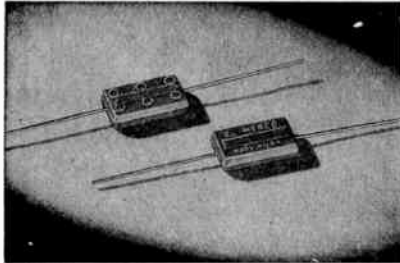
**COMPARE COST!**

THESE MINIATURES FIT INTO THE SMALLEST AREA CAPACITOR SIZE (9/32" x 1/2" x 3/16")

# ARCO ELECTRONICS, INC.

## E L - M E N C O C A P A C I T O R S

### MICA CAPACITORS



CM-19—11/16" x 7/16" x 7/32"  
 CM-20—25/32" x 7/16" x 7/32"  
 CM-25—7/16" x 1-7/64" x 7/32"

CM-30—13/16" x 13/16" x 9/32"  
 CM-35—13/16" x 13/16" x 11/32"

CM-40—1" x 5/8" x 11/32"

#### CM-19 & CM-20

TYPE DESIGNATION	CAP. MMF.	DC WKG. VOLTAGE	LIST PRICE	
			REGULAR MICA	SILVERED MICA
CM-20-050	5	500	\$0.25	\$0.40
CM-20-100	10	500	.25	.40
CM-20-120	12	500	.25	.40
CM-20-150	15	500	.25	.40
CM-20-180	18	500	.25	.40
CM-20-200	20	500	.25	.40
CM-20-220	22	500	.25	.40
CM-20-240	24	500	.25	.40
CM-20-270	27	500	.25	.40
CM-20-300	30	500	.20	.40
CM-20-330	33	500	.20	.40
CM-20-360	36	500	.20	.40
CM-20-390	39	500	.20	.40
CM-20-430	43	500	.20	.40
CM-20-470	47	500	.20	.40
CM-20-500	50	500	.20	.40
CM-20-510	51	500	.20	.40
CM-20-560	56	500	.20	.40
CM-20-620	62	500	.20	.40
CM-20-680	68	500	.20	.40
CM-20-750	75	500	.20	.40
CM-20-820	82	500	.20	.40
CM-20-910	91	500	.20	.40
CM-20-101	100	500	.20	.40
CM-20-111	110	500	.20	.45
CM-20-121	120	500	.20	.45
CM-20-131	130	500	.20	.45
CM-20-151	150	500	.20	.45
CM-20-161	160	500	.20	.45
CM-20-181	180	500	.20	.45
CM-20-201	200	500	.20	.45
CM-20-221	220	500	.20	.45
CM-20-241	240	500	.25	.55
CM-20-251	250	500	.25	.55
CM-20-271	270	500	.25	.55
CM-20-301	300	500	.25	.55
CM-20-331	330	500	.25	.55
CM-20-361	360	500	.25	.55
CM-20-391	390	500	.25	.65
CM-20-431	430	500	.25	.65
CM-20-471	470	500	.25	.70
CM-20-501	500	500	.25	.70
CM-20-511	510	500	.25	.70
CM-20-561	560	500	.25	.75
CM-20-621	620	500	.30	.80
CM-20-681	680	500	.30	.85
CM-20-751	750	500	.30	.90
CM-20-821	820	500	.30	.95
CM-20-911	910	500	.35	1.00
CM-20-102	1000	500	.35	1.10
CM-20-112†	1100	500	.45	1.20
CM-20-122†	1200	500	.45	1.30
CM-20-132†	1300	500	.45	1.40
CM-20-152†	1500	500	.50	1.50
CM-20-162†	1600	500	.50	1.60
CM-20-182†	1800	500	.60	1.70

#### CM-25, CM-30, CM-35 & CM-40

TYPE DESIGNATION	CAP. MMF.	DC WKG. VOLTAGE	LIST PRICE	
			REGULAR MICA	SILVERED MICA
CM-25-471	470	500	\$0.25	\$0.70
CM-25-511	510	500	.25	.70
CM-25-561	560	500	.25	.75
CM-25-621	620	500	.30	.80
CM-25-681	680	500	.30	.85
CM-25-751	750	500	.30	.90
CM-25-821	820	500	.30	.95
CM-25-911	910	500	.35	1.00
CM-25-102	1000	500	.35	1.10
CM-25-112	1100	500	.45	1.20
CM-25-122	1200	500	.45	1.30
CM-25-132	1300	500	.45	1.40
CM-25-152	1500	500	.50	1.50
CM-25-162	1600	500	.50	1.60
CM-25-182	1800	500	.60	1.70
CM-25-202	2000	500	.65	1.80
CM-30-621	620	500	.25	.80
CM-30-681	680	500	.25	.85
CM-30-751	750	500	.25	.90
CM-30-821	820	500	.25	.95
CM-30-911	910	500	.25	1.00
CM-30-102	1000	500	.30	1.10
CM-30-112	1100	500	.30	1.10
CM-30-122	1200	500	.30	1.25
CM-30-132	1300	500	.30	1.25
CM-30-152	1500	500	.30	1.35
CM-30-162	1600	500	.40	1.35
CM-30-182	1800	500	.40	1.35
CM-30-202	2000	500	.40	1.50
CM-30-222	2200	500	.40	1.50
CM-30-242	2400	500	.45	1.80
CM-30-252	2500	500	.45	1.80
CM-30-272	2700	500	.45	1.90
CM-30-302	3000	500	.50	2.05
CM-30-332	3300	500	.50	2.05
CM-30-362	3600	500	.50	2.10
CM-30-392	3900	500	.55	2.15
CM-30-432	4300	500	.55	2.15
CM-30-472	4700	500	.55	2.15
CM-30-502	5000	500	.60	2.25
CM-30-512	5100	500	.60	2.25
CM-30-562	5600	500	.60	2.50
CM-35-622*	6200	300	.75	2.75
CM-35-682*	6800	300	.80	3.00
CM-35-752*	7500	300	.90	3.25
CM-35-822*	8200	300	1.00	3.50
CM-35-912*	9100	300	1.00	4.00
CM-35-103*	10000	300	1.20	4.00
CM-40-822*	8200	300	1.00	3.50
CM-40-912*	9100	300	1.00	4.00
CM-40-103*	10000	300	1.20	4.00
CM-40-123	12000	300	1.40	4.50
CM-40-153	15000	300	1.70	5.25

All capacitors above with exception of those indicated by † can be ordered in CM-19 or CM-20 Cases.

ON ALL UNITS LISTED ABOVE: Regular Mica supplied in "A" and "B" Characteristic at List Price. Silvered Mica in CM-19 and CM-20 Cases supplied in "C" and "D" Characteristic at List Price. Silvered Mica in CM-25, CM-30, CM-35 and CM-40 supplied in "C", "D", and "E" Characteristic at List Prices.

#### STANDARD TOLERANCE

Regular MICA.....	20%
Silvered MICA.....	5%
(closest tolerance .5 mmfd.)	

#### PRICES OF OTHER AVAILABLE TOLERANCES

REGULAR MICA CAPACITORS		SILVER MICA CAPACITORS	
For 20%.....	(Standard) Use List Price	For 5%.....	(Standard) Use List Price
For 10%.....	add 10% to List Price	For 3%.....	add 10% to List Price
For 5%.....	add 20% to List Price	For 2%.....	add 15% to List Price
		For 1%.....	add 25% to List Price

NOTE: For any RMA size not shown in above listings, figure price to the nearest capacity.

# ARCO ELECTRONICS, INC.

## EL-MENCO CAPACITORS

### TELEVISION • TRANSMITTING • INDUSTRIAL HIGH VOLTAGE MICA CAPACITORS

DC WORKING VOLTAGES: FROM 1000 TO 3000 VOLTS

Molded in CM-20, CM-35, and CM-40 Cases

Demand for smaller units in higher voltages designed to meet the requirements for TELEVISION, POWER AMPLIFIERS, LOW POWER TRANSMITTERS, and various INDUSTRIAL Uses has increased. EL-MENCO designed and produced units listed below are especially adaptable to compact circuits where space is an important factor. Their acceptance has been overwhelming by the various manufacturers of TELEVISION RECEIVERS.

In many cases, these units will do the work of capacitors molded in CM-45, CM-50, and CM-55 cases without breaking down. NO SPECIAL MOUNTINGS ARE NECESSARY; just wire right into the circuit.

The capacitors are molded in low-loss bakelite and tested at double the branded voltage. They are tested for dielectric strength, insulation resistance, temperature coefficient, capacitance drift, susceptibility to humidity, and length of life, according to RCM Standards. All units are wax-dipped for protection against salt water immersion.

VCM-20							VCM-35 & VCM-40						
TYPE DESIGNATION	CAP. MMF.	6000 VDC	5000 VDC	4000 VDC	3000 VDC	2000 VDC	TYPE DESIGNATION	CAP. MMF.	6000 VDC	5000 VDC	4000 VDC	3000 VDC	2000 VDC
		TEST	TEST	TEST	TEST	TEST			TEST	TEST	TEST	TEST	TEST
		3000 VDC	2500 VDC	2000 VDC	1500 VDC	1000 VDC			3000 VDC	2500 VDC	2000 VDC	1500 VDC	1000 VDC
		WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE			WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE	WKG. LIST PRICE
VCM-20-B-050	5	\$0.30					VCM-40-B-121	120	\$0.50				
VCM-20-B-100	10	.30					VCM-40-B-151	150	.55				
VCM-20-B-120	12	.30					VCM-40-B-161	160	.60				
VCM-20-B-150	15	.35	\$0.30				VCM-40-B-181	180	.60				
VCM-20-B-180	18	.35	.30				VCM-40-B-221	200	.65				
VCM-20-B-200	20	.35	.30				VCM-40-B-241	240	.70				
VCM-20-B-220	22	.35	.30				VCM-40-B-251	250	.70	\$0.55			
VCM-20-B-240	24	.35	.30				VCM-40-B-271	270	.70	.55			
VCM-20-B-270	27	.35	.30				VCM-40-B-301	300	.75	.60			
VCM-20-B-300	30	.40	.35				VCM-40-B-331	330	.80	.60			
VCM-20-B-330	33	.40	.35				VCM-40-B-361	360	.85	.65			
VCM-20-B-360	36	.45	.35				VCM-40-B-391	390	.90	.70			
VCM-20-B-390	39	.45	.35				VCM-40-B-431	480	1.00	.70	\$0.60		
VCM-20-B-430	43	.45	.35				VCM-40-B-471	470	1.05	.70	.65		
VCM-20-B-470	47	.45	.35	\$0.30			VCM-40-B-501	500	1.10	.75	.65		
VCM-20-B-500	50	.50	.35	.35			VCM-40-B-511	510	1.10	.75	.65		
VCM-20-B-510	51	.50	.35	.35			VCM-40-B-561	560	1.20	.80	.65		
VCM-20-B-560	56	.50	.35	.35			VCM-40-B-621	620	1.25	.85	.70		
VCM-20-B-620	62	.50	.35	.35			VCM-40-B-681	680	1.35	.90	.70	\$0.65	
VCM-20-B-680	68	.55	.40	.35			VCM-40-B-821	820	1.55	1.00	.80	.75	
VCM-20-B-750	75	.60	.45	.35	\$0.30		VCM-40-B-911	910		1.10	.85	.80	
VCM-20-B-820	82	.60	.45	.35	.30		VCM-40-B-102	1000		1.20	.95	.80	
VCM-20-B-910	91	.65	.45	.35	.35		VCM-40-B-112	1100		1.20	1.00	.85	\$0.55
VCM-20-B-101	100	.70	.45	.35	.35		VCM-40-B-122	1200		1.30	1.05	.95	.60
VCM-20-B-111	110	.70	.50	.40	.35		VCM-40-B-132	1300		1.40	1.10	1.00	.60
VCM-20-B-121	120		.50	.40	.35	\$0.30	VCM-40-B-152	1500		1.60	1.25	1.10	.65
VCM-20-B-131	130		.50	.40	.35	.30	VCM-40-B-162	1600		1.70	1.30	1.10	.70
VCM-20-B-151	150		.55	.40	.35	.35	VCM-40-B-182	1800			1.40	1.25	.70
VCM-20-B-161	160		.60	.45	.35	.35	VCM-40-B-202	2000			1.55	1.35	.75
VCM-20-B-181	180		.60	.45	.35	.35	VCM-40-B-222	2200				1.40	.85
VCM-20-B-201	200		.65	.50	.40	.35	VCM-40-B-242	2400				1.55	.90
VCM-20-B-221	220		.70	.50	.40	.35	VCM-40-B-272	2700					.90
VCM-20-B-241	240		.70	.55	.40	.35	VCM-40-B-302	3000					1.00
VCM-20-B-251	250			.55	.45	.40	VCM-40-B-332	3300					1.05
VCM-20-B-271	270			.55	.45	.40	VCM-40-B-362	3600					1.15
VCM-20-B-301	300			.60	.50	.40	VCM-40-B-392	3900					1.20
VCM-20-B-331	330			.65	.50	.40	VCM-40-B-432	4300					1.30
VCM-20-B-361	360			.65	.50	.40	VCM-40-B-472	4700					1.40
VCM-20-B-391	390			.70	.55	.40	VCM-40-B-502	5000					1.45
VCM-20-B-431	430				.55	.45	VCM-40-B-512	5100					1.45
VCM-20-B-471	470				.60	.45							
VCM-20-B-501	500				.60	.45							
VCM-20-B-511	510				.60	.45							
VCM-20-B-561	560				.65	.50							
VCM-20-B-621	620				.70	.50							
VCM-20-B-681	680					.55							
VCM-20-B-721	750					.55							
VCM-20-B-821	820					.60							
VCM-20-B-911	910					.65							
VCM-20-B-102	1000					.70							

\*All 3000 Working VDC in VCM-40 case only

\*All 3000 Working VDC in VCM-40 case only

All of the above units can be obtained, on request, in CM-85 cases, at 10% above list price.

All units supplied in "A" or "B" Characteristic at list price. Case Size Dimensions (See page P-92 for illustrations):

VCM-20— $\frac{11}{16}$ " x  $\frac{1}{4}$ " x  $\frac{1}{8}$ " VCM-35— $\frac{11}{16}$ " x  $\frac{1}{4}$ " x  $\frac{1}{8}$ "

VCM-40—1" x  $\frac{5}{8}$ " x  $\frac{1}{8}$ "

Standard Tolerance:  $\pm 20\%$

Prices will be quoted for closer tolerances in "Silvered" mica upon request.



# ARCO ELECTRONICS, INC.

## EL - M EN CO C A P A C I T O R S

### PAPER TUBULAR CAPACITORS CP TYPE



**MINERAL OIL IMPREGNATION  
NON-INDUCTIVE WINDING  
SYNTHETIC RESIN END SEALS  
STEATITE CASE**

EL-MENCO CP type paper tubular capacitors are sealed into STEATITE CERAMIC TUBES which serve to insulate the capacitor electrically as well as against moisture and heat. The capacitor insert is impregnated with MINERAL OIL, thereby assuring long life at 85° C operating conditions. This feature insures successful operation at the high ambient temperatures existing in small, compact enclosures.

The NON-INDUCTIVELY wound paper and foil units are sealed in the CERAMIC TUBES by means of baked SYNTHETIC RESIN END FILLS which cannot melt at any conceivable operating temperature. The end fills will not dissolve in wax, permitting the capacitors to be potted without damage to the insert. Leads are of tinned copper wire 2 1/4" long.

Many of the large TELEVISION, TRANSMITTER AND HIGH VOLTAGE AMPLIFIER manufacturers have found these capacitors to be of highest quality. Breakdown tests have exceeded the required standards.

### SILVER CERAMIC HIGH "K" CAPACITORS



#### Bypass and Coupling Capacitors

Wax Impregnated, Low-Loss PHENOLIC COATING. Insulation Resistance: 10,000 Megohms Minimum. 90% Relative Humidity Test for 100 Hours. RADIAL LEADS of No. 22 Tinned Copper Wire 1 1/4" Minimum. RMA COLOR CODED. STANDARD TOLERANCE ± 20%. 1000 VDC Test, 500 VDC Working. Meets Requirements of RMA Standards.

CAPACITY MFD.	1600 WVDC		1000 WVDC		600 WVDC		400 WVDC		200 WVDC	
	PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE
.001	CP-3-102	\$.50	CP-2-102	\$.40	CP-1-102	\$.25				
.0015	CP-3-152	.50	CP-2-152	.40	CP-1-152	.25				
.002	CP-3-202	.50	CP-2-202	.40	CP-1-202	.25				
.0022	CP-3-222	.50	CP-2-222	.40	CP-1-222	.25				
.0025	CP-3-252	.50	CP-2-252	.40	CP-1-252	.25				
.008	CP-3-302	.50	CP-3-302	.40	CP-1-302	.25				
.0088	CP-3-332	.50	CP-3-332	.40	CP-1-332	.25				
.004	CP-3-402	.50	CP-3-402	.40	CP-1-402	.25				
.0047	CP-4-472	.50	CP-3-472	.45	CP-1-472	.25				
.005	CP-4-502	.50	CP-3-502	.45	CP-1-502	.25				
.006	CP-4-602	.50	CP-3-602	.45	CP-2-602	.25				
.0068	CP-4-682	.60	CP-3-682	.45	CP-2-682	.25				
.0075	CP-5-752	.60	CP-3-752	.45	CP-2-752	.30				
.01	CP-5-103	.60	CP-3-103	.50	CP-2-103	.30				
.015	CP-5-153	.60	CP-4-153	.50	CP-2-153	.30				
.02	CP-6-203	.60	CP-5-203	.50	CP-3-203	.30	CP-2-203	\$.25		
.022	CP-6-223	.60	CP-5-223	.50	CP-3-223	.30	CP-3-223	.30		
.025	CP-6-253	.60	CP-5-253	.50	CP-4-253	.35	CP-3-253	.30		
.08	CP-6-303	.60	CP-5-303	.50	CP-4-303	.35	CP-3-303	.30		
.088	CP-6-333	.65	CP-5-333	.60	CP-4-333	.35	CP-3-333	.30		
.04			CP-6-403	.60	CP-4-403	.35	CP-3-403	.30		
.047			CP-6-473	.60	CP-4-473	.35	CP-4-473	.30		
.05			CP-6-503	.60	CP-4-503	.40	CP-4-503	.30		
.056			CP-6-563	.65	CP-5-563	.40	CP-4-563	.30		
.068					CP-6-683	.40	CP-4-683	.35		
.075					CP-6-753	.45	CP-5-753	.35		
.1					CP-6-104	.45	CP-5-104	.35	CP-4-104	\$.35
.15							CP-6-154	.40	CP-4-154	.40
.22							CP-6-224	.45	CP-5-224	.40
.25							CP-6-254	.45	CP-5-254	.40
.33									CP-6-334	.50
.47									CP-6-474	.60
.5									CP-6-504	.60

#### DIMENSIONS FOR CP TYPE CAPACITORS

STANDARD TOLERANCE ON ABOVE UNITS IS ± 20%. FOR ± 10% TOLERANCE ADD 15% TO LIST PRICE.

	DIA METER	LENGTH
CP-1	3/8"	1 1/4"
CP-2	3/8"	1 3/8"
CP-3	3/8"	1 3/8"
CP-4	3/8"	1 3/8"
CP-5	3/8"	2 1/4"
CP-6	3/8"	2 1/4"

TYPE DESIGNATION	CAP. MMF.	S I Z E		LIST PRICE
		LENGTH	DIA M.	
CC-1-100	10	1 1/8"	.250"	\$.25
CC-1-150	15	1 1/8"	.250"	.25
CC-1-250	25	1 1/8"	.250"	.25
CC-1-400	40	1 1/8"	.250"	.25
CC-1-500	50	1 1/8"	.250"	.25
CC-1-820	82	1 1/8"	.250"	.25
CC-1-101	100	1 1/8"	.250"	.25
CC-1-151	150	1 1/8"	.250"	.25
CC-1-201	200	1 1/8"	.250"	.25
CC-1-251	250	1 1/8"	.250"	.25
CC-1-301	300	1 1/8"	.250"	.25
CC-1-401	400	1 1/8"	.250"	.25
CC-1-501	500	1 1/8"	.250"	.25
CC-2-751	750	3/4"	.250"	.25
CC-2-102	1000	3/4"	.250"	.25
CC-2-122	1200	3/4"	.250"	.25
CC-2-152	1500	3/4"	.250"	.25
CC-2-202	2000	3/4"	.250"	.25
CC-3-252	2500	1 1/8"	.350"	.30
CC-3-302	3000	1 1/8"	.350"	.30
CC-3-402	4000	1 1/8"	.350"	.35
CC-4-502	5000	1"	.350"	.40
CC-4-682	6800	1"	.350"	.40
CC-5-752	7500	1.20"	.350"	.45
CC-5-103	10000	1.20"	.350"	.50
CC-6-123	12000	1.825"	.350"	.50

# ARCO ELECTRONICS, INC.

## EL-MENCO CAPACITORS

### Single and Dual PADDERS

EL-MENCO PADDING CONDENSERS have been acclaimed by engineers as the finest development in adjustable mica condensers.

The construction is such as to completely enclose and protect the delicate edges of the mica films, made of the finest quality clear India ruby mica.

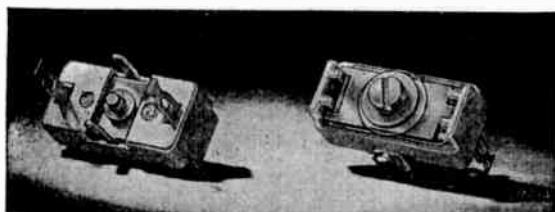
The phosphor bronze adjusting plates assure permanent resilience and freedom from mechanical fatigue. All parts are heavily plated to resist corrosion.

#### TYPE 30

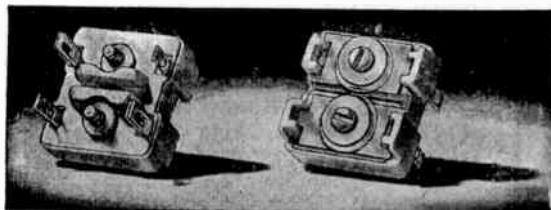
350 Volts DC Flash-Test — 175 WVDC

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At 1½ Inch Pounds Cap. Will Be More Than MMF.	At 2½ Turns Open Cap. Will Be Less Than MMF.	
302	2 Pl.	130	15	\$0.55
303	3 pl.	340	65	.60
304	4 Pl.	550	100	.65
305	5 Pl.	760	190	.75
306	6 Pl.	970	275	.80
307	7 Pl.	1180	350	.85
308	8 Pl.	1390	450	.90
309	9 Pl.	1600	550	1.00
310	10 Pl.	1890	650	1.10
311	11 Pl.	2110	780	1.15
312	12 Pl.	2330	880	1.20
313	13 Pl.	2605	1150	1.30
314	14 Pl.	2830	1800	1.35
315	15 Pl.	3055	1400	1.40

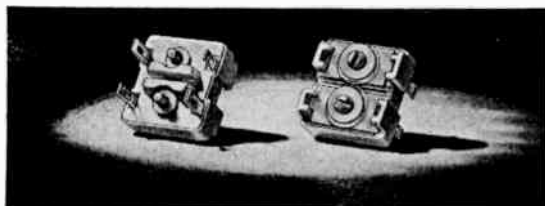
Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 1½ to 1¾ Mil Mica films.



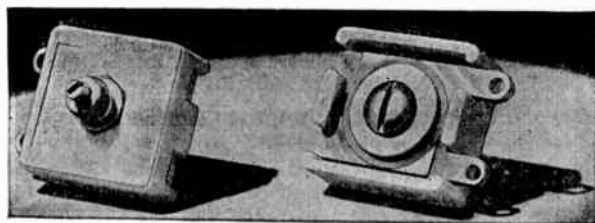
TYPE 58 PADDER 1.000" x .468"



TYPE 50 DUAL PADDER  
(will fit any size shield having dimensions exceeding 1-1/16" x 1-1/16")



TYPE 60 DUAL PADDER  
(will fit any size shield having dimensions exceeding ¾" x ¾")



TYPE 30 AND TYPE 30-M PADDER 7/8" x 15/16"

#### TYPE 30-M

1000 Volts DC Flash-Test — 500 Working Volts DC

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At 1½ Inch Pounds Cap. Will Be More Than MMF.	At 2½ Turns Open Cap. Will Be Less Than MMF.	
302-M	2 Pl.	120	15	\$0.55
303-M	3 Pl.	320	65	.60
304-M	4 Pl.	500	100	.70
305-M	5 Pl.	690	180	.75
306-M	6 Pl.	880	265	.80
307-M	7 Pl.	1070	340	.90
308-M	8 Pl.	1260	425	.95
309-M	9 Pl.	1415	525	1.00
310-M	10 Pl.	1600	615	1.10
311-M	11 Pl.	1785	730	1.15
312-M	12 Pl.	1970	800	1.25
313-M	13 Pl.	2155	1000	1.30
314-M	14 Pl.	2340	1100	1.35
315-M	15 Pl.	2525	1200	1.45

Screw is insulated from top plate by mica washer. Above maximum capacity values are based on using 2 to 2¼ Mil Mica.

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
582	2 Pl.	80	7.5	\$0.40
583	3 Pl.	160	19	.45
584	4 Pl.	240	50	.50

◀ TYPE 58 Padder is a single variable trimmer section provided with a two-pronged staple mounting for attachment to bracket or chassis. Base is made of lowest loss steatite and the mica is India Ruby.

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
502	2 Pl.	80	7.5	\$0.60
503	3 Pl.	160	19	.70
504	4 Pl.	240	50	.80

◀ TYPE 50 Dual Padders provide two variable trimmers mounted on a single base. This unit is designed as a tuning component for I.F. transformers; and as such, may be snap-in mounted along with the transformer coil in any size shield having dimensions exceeding 1¼" x 1¼".

PART NUMBER	NUMBER OF PLATES	GUARANTEED RANGE		LIST PRICE
		At Tight Cap. Will Be More Than MMF.	At 2 Turns Open Cap. Will Be Less Than MMF.	
602	2 Pl.	55	7	\$0.50
603	3 Pl.	100	15	.60
604	4 Pl.	160	35	.70

◀ TYPE 60 Dual Padders provide two variable trimmers mounted on a single base. This unit is designed as a tuning component for I.F. transformers; and as such, may be snap-in mounted along with the transformer coil in any size shield having dimensions exceeding ¾" x ¾".

See page P-96 for Mica Trimmer Capacitors

# ARCO ELECTRONICS, INC.

## EL - M E N C O C A P A C I T O R S

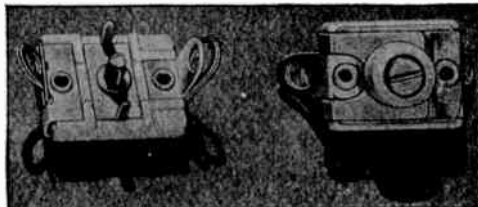
### TYPE 46 TRIMMER

The base is made of the lowest dielectric loss ceramic material available and the mica is clear India Ruby.

The soldering lugs may be bent in any position without affecting capacity setting due to the rigid construction of adjusting plates.

EL-MENCO TRIMMING CONDENSERS are treated for resistance to humidity and for permanence of capacity setting.

Trimmers shown here are standard sizes and capacities.



TYPE 46 TRIMMER 3/4" x 5/8"

**Metal Mounting Brackets for these trimmers can be supplied from stock**

TYPE 46W	NUMBER PART	PLATES NUMBER OF	GUARANTEED RANGE		LIST PRICE
			At Tight Cap. Will Be More Than MMF.	At 2 1/2 Turns Open Cap. Will Be Less Than MMF.	
460	1 1/4 Pl.	15	1.5		\$0.30
461	1 3/4 Pl.	30	2.7		.30
462	2 Pl.	80	5		.35
463	3 Pl.	180	9		.40
464	4 Pl.	280	25		.45
465	5 Pl.	380	50		.50
466	6 Pl.	480	80		.55
467	7 Pl.	580	110		.60
468	8 Pl.	680	140		.65
469	9 Pl.	780	170		.70

	LIST PRICE
Bracket for mounting 2 Trimmers . . . . .	\$0.10
Bracket for mounting 3 Trimmers . . . . .	.12
Bracket for mounting 4 Trimmers . . . . .	.14
Bracket for mounting 5 Trimmers . . . . .	.16
Bracket for mounting 6 Trimmers . . . . .	.18

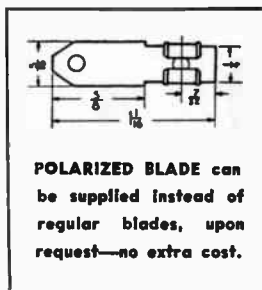
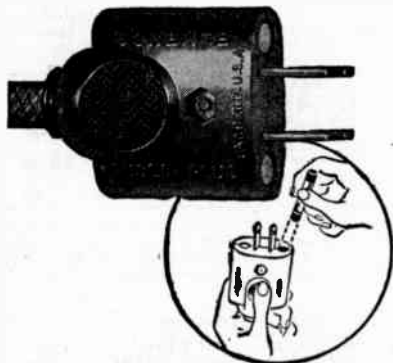
## EL-MENCO FUSED PLUG

They're all saying again, "It's a wonder no one thought of it before." Here's a plug that carries its own fuses.

It attaches to the cord just as any standard plug, looks pretty much the same, light-weight, but easier to handle because of finger grips. However, it contains two small fuses, which provide complete protection against damage to the appliance and to the main line.

Blown fuses are easily removable; replacements are available up to 10 amperes.

*Fuses Available Wherever Electrical Supplies Are Sold*



**REMOVE FUSES  
IN A JIFFY**

**REPLACE FUSES  
INSTANTLY**

LIST PRICE **35¢**  
EACH  
LESS FUSES

**UNDERWRITERS LABORATORY APPROVED**

### FUSES

3 AG FUSES (32 VOLTS OR LESS)		LIST PRICE
311005.	5 amp. . . . .	\$0.05
31107.5	7 1/2 amp. . . . .	.05
311010.	10 amp. . . . .	.04
311015	15 amp. . . . .	.04
311020	20 amp. . . . .	.035
311030	30 amp. . . . .	.05
3 AG FUSES (250 VOLTS OR LESS)		
312.062	1/8 amp. . . . .	.15
312.125	1/4 amp. . . . .	.15
312.250	1/2 amp. . . . .	.15
312.375	3/4 amp. . . . .	.15
312.500	1 amp. . . . .	.15
312.750	1 1/2 amp. . . . .	.15
312001.	1 amp. . . . .	.07
31201.5	1 1/2 amp. . . . .	.07
312002.	2 amp. . . . .	.07
312003.	3 amp. . . . .	.07
312004.	4 amp. . . . .	.10
312005.	5 amp. . . . .	.10
312006.	6 amp. . . . .	.10
3 AG SLO-BLO FUSES		
313.010	1/100 amp. . . . .	.25
313.032	1/32 amp. . . . .	.25
313.062	1/16 amp. . . . .	.25
313.125	1/8 amp. . . . .	.25
313.187	1/4 amp. . . . .	.25
313.250	1/2 amp. . . . .	.25
313.375	3/4 amp. . . . .	.25
313.500	1 amp. . . . .	.25
313.750	1 1/2 amp. . . . .	.25
313001.	1 amp. . . . .	.25
31301.5	1 1/2 amp. . . . .	.20
313002.	2 amp. . . . .	.20
313003.	3 amp. . . . .	.20
313005.	5 amp. . . . .	.20
313010.	10 amp. . . . .	.20
313015.	15 amp. . . . .	.20
313020.	20 amp. . . . .	.20
3 AB TINY-MIGHTY FUSE U/L		
314008	8 amp. . . . .	.15
314010	10 amp. . . . .	.15
314012	12 amp. . . . .	.15
314015	15 amp. . . . .	.15
314020	20 amp. . . . .	.15

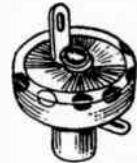


## ERIE BUTTON SILVER MICA CAPACITORS



**STYLE  
CB**

These are midget silver-mica capacitors, for use where compact size, minimum series inductance, and high leakage resistance are essential. Erie button silver-mica capacitors are unmatched for V.H.F. and U.H.F. work. "Q" at 1 MC is not less than 1000 above 100 mmf; not less than 700 between 50 and 100 mmf; not less than 500 below 50 mmf. Type 370-CB has ring type metal shell with three soldering ears. High potential terminal at either end for feed-thru connection. Type 370-FA is fastened to chassis with 3-48 screw.



**STYLE  
FA**

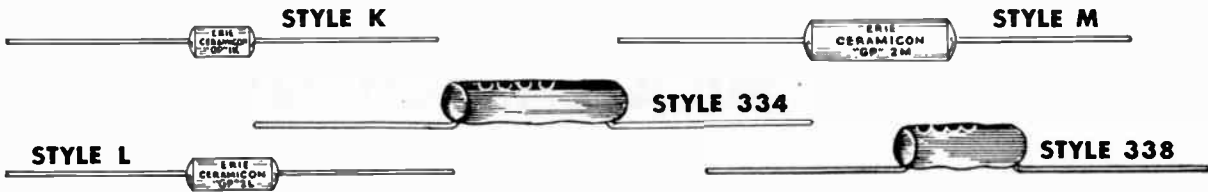
### SPECIFICATION CHART

Style	Capacity	Tolerance	List Price
370CB and 370FA	15	20 % 10 % 5 %	1.10 1.25 1.85
370CB and 370FA	25	20 % 10 % 5 %	1.10 1.25 1.85
370CB and 370FA	50	20 % 10 % 5 %	.80 .90 1.30
370CB and 370FA	100	20 % 10 % 5 %	.80 .90 1.30
370CB and 370FA	150	20 % 10 % 5 %	.80 .90 1.30
370CB and 370FA	200	20 % 10 % 5 %	.90 1.00 1.45
370CB and 370FA	250	20 % 10 % 5 %	1.00 1.10 1.65
370CB and 370FA	300	20 % 10 % 5 %	1.10 1.25 1.85
370CB and 370FA	400	20 % 10 % 5 %	1.10 1.25 1.85
370CB and 370FA	500	20 % 10 % 5 %	1.10 1.25 1.85
370CB and 370FA	750	20 % 10 % 5 %	1.75 2.00 2.90
370CB and 370FA	1000	20 % 10 % 5 %	2.20 2.50 3.50



ERIE RESISTOR CORPORATION—ERIE, PA.

# ERIE CERAMICONS®



**ERIE CERAMICONS\*** are small fixed capacitors consisting essentially of a ceramic dielectric with silver electrodes which are fired on at a very high temperature. Erie Ceramicons are outstanding because of their excellent high frequency characteristics, small size, rugged construction and availability in a wide range of capacity values.

Physical dimensions of styles illustrated are:

Style K length .562" diameter .250"	Style 331 length .460" diameter .240"
Style L length .812" diameter .250"	Style 334 length 1.213" diameter .415"
Style M length 1.328" diameter .340"	Style 338 length .550" diameter .312"

## "GP" General Purpose CERAMICONS®

"GP" general purpose Ceramicons are ideally suited for such applications as coupling and by-passing, in circuits where temperature coefficient is not important — in other words for all receiver applications except in frequency determining circuits. Working voltage—500 volts D.C. Use Erie "GP" Ceramicons as replacements for molded mica and paper tubular capacitors.

### SPECIFICATION CHART

Style	Capacity (MMF)	Tolerance	List Price	Style	Capacity (MMF)	Tolerance	List Price
GP1K	5	20%	.25	GP2K	240	20%	.25
GP1K	10	20%	.25	GP2K	250	20%	.25
GP1K	12	20%	.25	GP2K	270	20%	.25
GP1K	15	20%	.25	GP2K	300	20%	.25
GP1K	18	20%	.25	GP2K	330	20%	.25
GP1K	20	20%	.25	GP2K	360	20%	.25
GP1K	22	20%	.25	GP2K	390	20%	.25
GP1K	24	20%	.25	GP2K	470	20%	.25
GP1K	25	20%	.25	GP2K	500	20%	.25
GP1K	27	20%	.25	GP2K	510	20%	.25
GP1K	30	20%	.25	GP2K	560	20%	.25
GP1K	33	20%	.25	GP2K	680	20%	.25
GP1K	39	20%	.25	GP2K	750	20%	.25
GP1K	47	20%	.25	GP2L	1,000	20%	.25
GP1K	50	20%	.25	GP2L	1,200	20%	.25
GP1K	51	20%	.25	GP2L	1,500	20%	.25
GP1K	56	20%	.25	GP2M	1,800	20%	.25
GP1K	68	20%	.25	GP2M	2,000	20%	.25
GP1K	75	20%	.25	GP2M	2,200	20%	.25
GP1K	82	20%	.25	GP2M	2,500	20%	.25
GP1K	100	20%	.25	GP2M	2,700	20%	.25
GP2K	120	20%	.25	GP2M	3,000	20%	.25
GP2K	150	20%	.25	GP2M	3,300	20%	.25
GP2K	180	20%	.25	GP2M	4,000	20%	.25
GP2K	200	20%	.25	GP2M	4,700	20%	.25
GP2K	220	20%	.25				

## NPO Zero Temperature Coefficient CERAMICONS®

NPO zero temperature coefficient Ceramicons are highly recommended for frequency determining applications where no capacity change with change in temperature is desired. "Q" for NPO Ceramicons above 30 mmf is 1000 or higher. Below 30 mmf "Q" decreases slightly as capacity decreases. Working voltage—500 volts D.C. Can be used as replacements for silver mica condensers.

### SPECIFICATION CHART

Style	Capacity (MMF)	Tolerance	List Price	Style	Capacity (MMF)	Tolerance	List Price
NPOK	1.5	10%	.50	NPOL	20	10%	.50
NPOK	3	10%	.50	NPOL	25	10%	.50
NPOK	3.3	10%	.50	NPOL	33	10%	.50
NPOK	4.7	10%	.50	NPOM	50	10%	.55
NPOK	5	10%	.50	NPOM	75	10%	.55
NPOK	6.8	10%	.50	NPOM	100	10%	.55
NPOK	8.2	10%	.50	NPO-334	150	10%	.60
NPOK	10	10%	.50	NPO-334	175	10%	.60

\*"Hi-K", "Ceramicon" and "GP" are registered trade names and refer to ceramic dielectric condensers manufactured by Erie Resistor Corp.



## Negative Temperature Coefficient CERAMICONS®

N080 and N750 units provide temperature compensation to eliminate drift.

### SPECIFICATION CHART

#### ERIE TUBULAR TYPE N750 CERAMICONS

Style	Capacity (MMF)	Tolerance	List Price
N750K	5	10%	.50
N750K	10	10%	.50
N750L	47	10%	.50
N750L	75	10%	.50
N750L	100	10%	.50

#### ERIE TUBULAR TYPE N080 CERAMICONS

Style	Capacity (MMF)	Tolerance	List Price
N080-331	10	10%	.60
N080-331	22	10%	.60
N080-338	33	10%	.60
N080-338	47	10%	.60
N080-338	62	10%	.60

## ERIE DISC and PLATE CERAMICONS®



STYLE 811

Erie Disc and Plate Ceramicons consist of a flat Hi-K\* ceramic dielectric with silver fired onto the dielectric. Lead wires are firmly soldered to the silver electrodes, and the unit is given a protective coating of phenolic. Very efficient at high frequencies.



STYLE 882

### SPECIFICATION CHART

Style	Size	Value (MFD)	List Price
811	10/32" diam.	.001 (Min.)	.25
		.0015 "	
		.002 "	
		.005 "	
882 dual cap.	9/16" x 3/4"	2 x .0015	.40
		2 x .002	
		2 x .004	.45

## ERIE STAND-OFF CERAMICONS®



STYLE 324

Stand-Off Ceramicons, an original Erie development, are now widely used for the dual purposes of by-passing R.F. current to ground, and of mechanically supporting other circuit elements. They are especially suited for V.H.F. and U.H.F. applications, due to their low-inductance electrical paths and resultant high resonant frequency.

### SPECIFICATION CHART

Style	Capacity (MMF)	Tolerance	List Price
323	50	20%	.60
323	100	20%	.60
323	500	20%	.60
324	1,000	20%	.60
324	1,500	20%	.60
2322	2,500	20%	1.25
2336	2,500	20%	1.15
2336	5,000	20%	1.15

STYLE 323



STYLE 2336

STYLE 2322

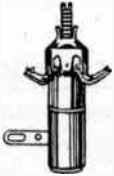


\*"Hi-K", "Ceramicon" and "GP" are registered trade names and refer to ceramic dielectric condensers manufactured by Erie Resistor Corp.



## ERIE TUBULAR TRIMMERS

Here is a compact, economical tubular trimmer that is ideal for applications calling for a low minimum capacity and a high ratio of maximum to minimum capacity. Has molded plastic dielectric. Can be mounted on panels having a thickness of .040" to .065".



STYLE 532

### SPECIFICATION CHART

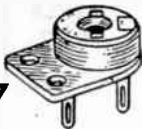
Style	Capacity Range (MMF)	List Price
S32-08	0.5-5	.55
532	1-8	.55

## ERIE CERAMICON TRIMMERS

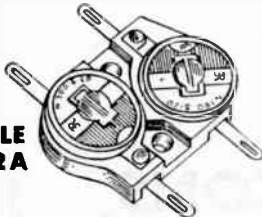
Erie Ceramicon trimmers give maximum stability and ease of adjustment. Capacity change is constant per degree of rotation. Silver electrodes are fired onto ceramic rotor and base. 360 degree rotor completely covers entire track on stator thus preventing dust and other foreign matter from affecting characteristics of the unit.



STYLE TS2A



STYLE 557



STYLE TD2A

### SPECIFICATION CHART

Style	Capacity Range (MMF)	Temperature Coefficient	List Price
TS2A	1.5-7	NPO	1.50
	3-12	NPO	1.50
	4-30	N500	1.50
	7-45	N500	1.50
TD2A	1.5-7 each section	NPO	2.50
	3-12 " "	NPO	2.50
	4-30 " "	N500	2.50
	7-45 " "	N500	2.50
557	3-12	NPO	1.25
	5-25	NPO	1.25
	8-50	N750	1.25

## ERIE FEED-THRU CERAMICONS

This very practical feed-thru capacitor is highly recommended for by-passing R.F. to ground in feed-thru applications. Wire terminals are sufficiently rugged to serve as tie points for several connections, for supporting other circuit elements, and long enough for point to point wiring.



STYLE 362

### SPECIFICATION CHART

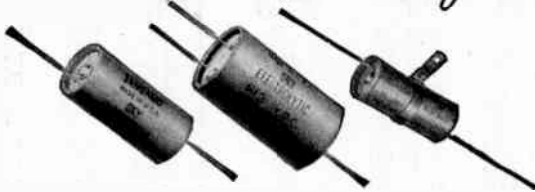
Style	Capacity (MMF)	Tolerance	List Price
362	1500	20%	1.00

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE MT-MTD-MTH

*Chieftain*



SANGAMO Type MT "Chieftain" electrolytics are especially designed for television and other electronic applications where operation at 85°C. temperatures is required. They are hermetically sealed in round aluminum containers which are encased in heavy insulating sleeves on which polarity is clearly indicated. Being small in physical size they are most popular where mounting in limited space is required — They will fit anywhere and can be mounted in almost any position. Double-thick paper spacers assure adequate breakdown characteristics and all sections are tightly held in place within the container. Multiple staking connects the terminal tabs to the electrodes. Multiple staking connects the terminal tabs to the electrodes and provides permanent low resistance contact throughout the life of the capacitor. Low voltage units utilize etched cathodes to maintain uniform capacity when they are subjected to combined conditions of heat and high ripple currents.

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
MT-0210	10	25		1/8	1 1/2	\$0.75	\$0.45
MT-0225	25	25		1/8	1 1/2	.85	.51
MT-0250	50	25		1/8	1 1/2	.95	.57
MT-0510	10	50		1/8	1 1/2	.80	.48
MT-0525	25	50		1/8	1 1/2	.90	.54
MT-0550	50	50		1/8	1 1/2	1.05	.63
MT-1504	4	150		1/8	1 1/2	.75	.45
MT-1508	8	150		1/8	1 1/2	.80	.48
MT-1512	12	150		1/8	1 1/2	.85	.51
MT-1516	16	150		1/8	1 1/2	.90	.54
MT-1520	20	150		1/8	1 1/2	.95	.57
MT-1530	30	150		1/8	1 1/2	1.00	.60
MT-1540	40	150		1/8	1 1/2	1.10	.66
MT-1550	50	150		1/8	1 1/2	1.20	.72
MT-2508	8	250		1/8	1 1/2	.80	.48
MT-2512	12	250		1/8	1 1/2	1.00	.60
MT-2516	16	250		1/8	1 1/2	1.10	.66
MT-2520	20	250		1/8	1 1/2	1.20	.72
MT-2540	40	250		1/8	1 1/2	1.40	.84
MT-3508	8	350		1/8	1 1/2	.90	.54
MT-3512	12	350		1/8	1 1/2	1.05	.63
MT-3516	16	350		1/8	1 1/2	1.20	.72
MT-4504	4	450		1/8	1 1/2	.80	.48
MT-4508	8	450		1/8	1 1/2	.95	.57
MT-4510	10	450		1/8	1 1/2	1.05	.63
MT-4512	12	450		1/8	1 1/2	1.15	.69
MT-4516	16	450		1/8	1 1/2	1.35	.81
MT-4520	20	450	1	1/8	1 1/2	1.50	.90
MT-4530	30	450	1	1/8	1 1/2	1.65	.99
MT-4540	40	450	1	1/8	1 1/2	2.00	1.20

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
MTD-0210	10-10	25		1/8	1 1/2	\$1.05	\$0.63
MTD-0220	20-20	25		1/8	1 1/2	1.10	.66
MTD-1520	20-20	150		1/8	1 1/2	1.30	.78
MTD-1530	30-30	150		1/8	1 1/2	1.50	.90
MTD-301	50-30	150	1	1/8	1 1/2	1.70	1.02
MTD-302	40-20	150	1	1/8	1 1/2	1.50	.90
MTD-1540	40-40	150	1	1/8	1 1/2	1.70	1.02
MTD-1550	50-50	150	1	1/8	1 1/2	1.90	1.14
MTD-2520	20-20	250	1	1/8	1 1/2	2.10	1.26
MTD-3520	20-20	350	1	1/8	1 1/2	2.10	1.26
MTD-4508	8-8	450	1	1/8	1 1/2	2.05	1.11
MTD-4510	10-10	450	1	1/8	1 1/2	2.35	1.41
MTD-4520	20-20	450	1	1/8	1 1/2	2.35	1.41

NOTE: All Dual units furnished with metal mounting strap. Straps for other sizes are available at extra cost.

NOTE: Packaging: 10, 25, or 50 capacitors per display carton.

NOTE: Diagram dimensions are for metal tubes. Add  $\frac{1}{8}$ " to diameter and  $\frac{1}{2}$ " to length for dimensions over cardboard insulating tubes.

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
MTH-0610	100	6		1/8	1 1/2	\$1.40	\$0.84
MTH-0625	250	6		1/8	1 1/2	1.55	.93
MTH-0650	500	6		1/8	1 1/2	1.70	1.02
MTH-08100	1000	6	1	1/8	1 1/2	2.25	1.35
MTH-08150	1500	6	1	1/8	1 1/2	3.00	1.80
MTH-1210	100	12		1/8	1 1/2	1.55	.93
MTH-1225	250	12		1/8	1 1/2	1.75	1.05
MTH-1250	500	12		1/8	1 1/2	1.90	1.14
MTH-1510	100	15		1/8	1 1/2	1.70	1.02
MTH-1525	250	15		1/8	1 1/2	1.90	1.14
MTH-1550	500	15		1/8	1 1/2	2.10	1.26
MTH-2510	100	25		1/8	1 1/2	2.00	1.20
MTH-2525	250	25		1/8	1 1/2	2.25	1.35
MTH-2550	500	25	1	1/8	1 1/2	2.25	1.35
MTH-5010	100	50		1/8	1 1/2	1.50	.90

NOTE: Dimensions are for metal tubes. Add  $\frac{1}{8}$ " to diameter and  $\frac{1}{2}$ " to length for dimensions over cardboard insulating tube.

NOTE: Packaging: 10, 25, or 50 capacitors per display carton.

### TYPE FM

*Arrowhead*



The SANGAMO Type FM "Arrowhead" electrolytic capacitors are similar in design to the Type MT "Chieftain" in every respect except leads. The Type FM is equipped with flexible, insulated wire leads and stud terminals eliminating the problem of crossed wires and the necessity for the use of insulating sleeves. They are much smaller than the wax-end filled types with insulated leads. The capacitors themselves are housed in round aluminum containers which are encased in heavy insulating sleeves, and they are especially designed for the rugged television requirements where 85°C. operating temperatures are encountered.

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
FM-0210	10	25		1/8	1 1/2	\$0.85	\$0.51
FM-0225	25	25		1/8	1 1/2	.95	.57
FM-0250	50	25		1/8	1 1/2	1.05	.63
FM-0510	10	50		1/8	1 1/2	.90	.54
FM-0525	25	50		1/8	1 1/2	1.00	.60
FM-0550	50	50		1/8	1 1/2	1.15	.69
FM-1504	4	150		1/8	1 1/2	.85	.51
FM-1508	8	150		1/8	1 1/2	.90	.54
FM-1512	12	150		1/8	1 1/2	.95	.57
FM-1516	16	150		1/8	1 1/2	1.00	.60
FM-1520	20	150		1/8	1 1/2	1.05	.63
FM-1530	30	150		1/8	1 1/2	1.10	.66
FM-1540	40	150		1/8	1 1/2	1.20	.72
FM-1550	50	150		1/8	1 1/2	1.30	.78
FM-2508	8	250		1/8	1 1/2	.90	.54
FM-2512	12	250		1/8	1 1/2	1.10	.66
FM-2516	16	250		1/8	1 1/2	1.20	.72
FM-2520	20	250		1/8	1 1/2	1.30	.78
FM-2540	40	250		1/8	1 1/2	1.50	.90
FM-3508	8	350		1/8	1 1/2	1.00	.60
FM-3512	12	350		1/8	1 1/2	1.15	.69
FM-3516	16	350		1/8	1 1/2	1.30	.78
FM-4504	4	450		1/8	1 1/2	1.00	.60
FM-4508	8	450		1/8	1 1/2	1.05	.63
FM-4510	10	450		1/8	1 1/2	1.15	.69
FM-4512	12	450		1/8	1 1/2	1.25	.75
FM-4516	16	450		1/8	1 1/2	1.45	.87
FM-4520	20	450	1	1/8	1 1/2	1.60	.96
FM-4530	30	450	1	1/8	1 1/2	1.75	1.05
FM-4540	40	450	1	1/8	1 1/2	2.05	1.23

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
FMD-0210	10-10	25		1/8	1 1/2	\$1.15	\$0.69
FMD-0510	10-10	50		1/8	1 1/2	1.25	.75
FMD-1520	20-20	150		1/8	1 1/2	1.40	.84
FMD-1530	30-30	150		1/8	1 1/2	1.50	.90
FMD-1530	30-30	150		1/8	1 1/2	1.60	.96
FMD-302	40-20	150	1	1/8	1 1/2	1.60	.96
FMD-304	40-30	150	1	1/8	1 1/2	1.40	.84
FMD-1540	40-40	150	1	1/8	1 1/2	1.80	1.08
FMD-301	50-30	150	1	1/8	1 1/2	1.80	1.08
FMD-1550	50-50	150	1	1/8	1 1/2	2.00	1.20
FMD-4508	8-8	450	1	1/8	1 1/2	1.80	1.08
FMD-308	8-16	450	1	1/8	1 1/2	2.10	1.26
FMD-4520	20-20	450	1	1/8	1 1/2	2.45	1.47

Catalog Number	Capacity mfd.	Working Volts D.C.		Size		List Price	Resale Net Price
		Volts D.C.	Volts D.C.	Dia.	Len.		
FMT-1520	20-20-20	150		1/8	1 1/2	\$2.10	\$1.26
FMT-1530	30-30-30	150		1/8	1 1/2	2.30	1.38
FMT-310	40-20-20	150		1/8	1 1/2	2.20	1.32
FMT-312	40-30-20	150		1/8	1 1/2	2.25	1.35
FMT-1540	40-40-40	150	1	1/8	1 1/2	2.50	1.50
FMT-315	50-30-20	150	1	1/8	1 1/2	2.60	1.56

NOTE: All units are supplied with mounting strap attached.

NOTE: Packaging: 10, 25, or 50 capacitors per display carton.

NOTE: Diagram dimensions are for metal tubes. Add  $\frac{1}{8}$ " to diameter and  $\frac{1}{2}$ " to length for dimensions over cardboard insulating tube.



# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE PL *Warrior*



The SANGAMO Type PL "Warrior" electrolytic capacitors are specially designed for all television and electronic applications requiring long life and dependable performance at 85°C under conditions of extreme ripple currents and high surge voltages. They are sealed in round aluminum cans and have twist-prong tabs for washer or direct chassis mounting. These terminal tabs are securely clamped and staked to the terminal lugs, providing permanent, low resistance connections. In all cases the aluminum can is negative and the mounting rings provides the negative electrical connection.

The Type PL has been especially engineered for the rigid TV replacement applications found in all of the leading television receivers manufactured in the industry.

Single Units					
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price	Resale Net Price
PL-7001	2000	6	1 1/2 x 2	\$4.20	\$2.52
PL-700	3000	10	1 1/2 x 3	4.50	2.70
PL-701	1000	15	1 x 3	3.25	1.95
PL-703	2000	15	1 1/2 x 3	4.70	2.82
PL-0240	40	25	1 x 2	1.10	.66
PL-02100	100	25	1 x 2	1.45	.87
PL-02500	500	25	1 x 3	2.45	1.47
PL-705	1000	25	1 1/2 x 3	3.55	2.13
PL-05150	150	50	1 x 2	2.45	1.47
PL-05500	500	50	1 1/2 x 3	3.55	2.13
PL-1530	30	150	1 x 2	1.25	.75
PL-1550	50	150	1 x 2	1.45	.87
PL-1580	80	150	1 x 2	1.75	1.05
PL-2520	20	250	1 x 2	1.45	.87
PL-2540	40	250	1 x 2	1.70	1.02
PL-2560	60	250	1 x 2 1/2	2.05	1.23
PL-3050	50	300	1 x 2 1/2	1.95	1.17
PL-30125	125	300	1 1/2 x 3	3.20	1.92
PL-3550	50	350	1 x 3	2.05	1.23
PL-3580	80	350	1 1/2 x 2 1/2	2.60	1.68
PL-35125	125	350	1 1/2 x 3	3.55	2.13
PL-4080	80	400	1 1/2 x 2 1/2	2.95	1.77
PL-4510	10	450	1 x 2	1.30	.78
PL-4515	15	450	1 x 2	1.55	.93
PL-4520	20	450	1 x 2	1.75	1.05
PL-4530	30	450	1 x 2 1/2	1.95	1.17
PL-4540	40	450	1 x 3	2.25	1.35
PL-4580	80	450	1 1/2 x 3	3.65	2.31
PL-45125	125	450	1 1/2 x 4	5.75	3.45
PL-4730	30	475	1 x 3	2.60	1.56
PL-4740	40	475	1 1/2 x 2	3.00	1.80
PL-4790	90	475	1 1/2 x 3 1/2	6.50	3.90
PL-5010	10	500	1 x 2 1/2	1.75	1.05
PL-5020	20	500	1 x 3	2.65	1.59

Dual Units					
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price	Resale Net Price
PLD-706	1000-1000	15	1 x 3 1/2	\$4.90	\$2.94
PLD-0240	40-40	25	1 x 2	1.50	.90
PLD-0550	50-50	50	1 x 2	1.70	1.02
PLD-1520	20-20	150	1 x 2	1.55	.93
PLD-707	30-15	150	1 x 2	1.60	.96
PLD-1530	30-30	150	1 x 2	1.75	1.05
PLD-712	40-20	150	1 x 2	1.75	1.05
PLD-1540	40-40	150	1 x 2 1/2	1.95	1.35
PLD-716	50-30	150	1 x 2 1/2	1.95	1.35
PLD-1550	50-50	150	1 x 2 1/2	2.10	1.26
PLD-2520	20-20	250	1 x 2	2.05	1.23
PLD-2540	40-40	250	1 x 3	2.30	1.36
PLD-2580	80-80	300	1 1/2 x 3 1/2	3.65	2.31
PLD-715	120-20	300	1 1/2 x 3 1/2	3.60	2.16
PLD-4015	15-15	400	1 x 2 1/2	2.30	1.36
PLD-717	80-10	400	1 1/2 x 3	4.00	2.40
PLD-4510	10-10	450	1 x 2	2.10	1.26
PLD-719	15-10	450	1 x 3	2.35	1.41
PLD-4540	20-20	450	1 x 3	2.65	1.59
PLD-4540	40-40	450	1 1/2 x 3	4.00	2.40
PLD-719	80-10	450	1 1/2 x 3	4.25	2.55
PLD-4740	40-40	475	1 1/2 x 3	4.65	2.79
PLD-720	20-20	300-25	1 x 2	1.65	1.11
PLD-721	20-80	450-350	1 1/2 x 3 1/2	3.80	2.26
PLD-722	40-10	450-350	1 x 2	2.05	1.23
PLD-723	80-10	450-25	1 1/2 x 3	3.70	2.22
PLD-726	80-50	450-50	1 1/2 x 3	4.00	2.40
PLD-727	20-100	475-300	1 1/2 x 3 1/2	4.10	2.46

### Triple Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price	Resale Net Price
PLT-0220	20-20-20	25	1 x 2	\$2.20	\$1.20
PLT-0530	30-30-30	50	1 x 2	2.30	1.36
PLT-730	10-30-30	150	1 x 2	2.30	1.36
PLT-1520	20-20-20	150	1 x 2	2.30	1.36
PLT-738	40-30-20	150	1 x 2	2.45	1.47
PLT-1540	40-40-40	150	1 x 3	2.60	1.56
PLT-739	10-15-15	250	1 x 2	2.50	1.50
PLT-740	40-20-20	250	1 x 3	3.00	1.80
PLT-3010	10-10-10	300	1 x 2	2.40	1.44
PLT-4010	10-10-10	400	1 x 2 1/2	2.50	1.50
PLT-4510	10-10-10	450	1 x 2 1/2	2.50	1.50
PLT-741	15-15-10	450	1 x 3	2.85	1.71
PLT-4520	20-20-20	450	1 1/2 x 2 1/2	3.45	2.07
PLT-4710	10-10-10	475	1 x 3	3.00	1.60
PLT-742	30-30-20	475	1 1/2 x 3	5.20	3.12
PLT-745	20-250-100	150-15-15	1 1/2 x 2 1/2	2.80	1.68
PLT-746	100-50-25	150-50-25	1 x 3	2.80	1.68
PLT-747	30-20-100	150-150-6	1 x 2	2.65	1.59
PLT-748	20-20-20	150-150-25	1 x 2	2.20	1.32
PLT-750	30-20-30	150-150-25	1 x 2	2.20	1.32
PLT-751	30-30-20	150-150-25	1 x 2	2.25	1.35
PLT-752	40-30-20	150-150-25	1 x 2	2.35	1.41
PLT-753	50-30-100	150-150-25	1 x 2 1/2	3.10	1.86
PLT-754	50-50-20	150-150-25	1 x 2 1/2	2.55	1.53
PLT-755	70-70-20	200-200-50	1 1/2 x 3	4.00	2.40
PLT-757	15-15-25	250-250-25	1 x 2	2.45	1.47
PLT-756	30-30-20	250-250-25	1 x 2 1/2	2.70	1.62
PLT-759	80-80-60	250-250-200	1 1/2 x 3 1/2	4.25	2.55
PLT-760	10-20-30	250-250-350	1 x 3	2.80	1.68
PLT-762	20-20-20	300-300-25	1 x 2 1/2	2.60	1.56
PLT-763	40-15-20	300-300-25	1 x 2 1/2	2.80	1.68
PLT-764	10-20-20	350-300-200	1 1/2 x 2	2.90	1.74
PLT-765	10-10-20	350-350-25	1 x 2	2.30	1.38
PLT-766	15-15-20	350-350-25	1 x 2 1/2	2.55	1.53
PLT-767	30-20-20	350-350-25	1 x 3	2.80	1.68
PLT-769	15-15-40	400-400-25	1 x 2 1/2	2.70	1.62
PLT-770	20-20-20	400-400-25	1 x 3	2.80	1.68
PLT-771	30-100-25	450-25-25	1 1/2 x 2	2.75	1.65
PLT-772	10-10-20	450-350-25	1 x 2	2.30	1.38
PLT-773	10-10-50	450-350-25	1 x 3	2.65	1.59
PLT-774	15-20-20	450-350-250	1 1/2 x 2	2.95	1.77
PLT-775	10-30-30	450-400-300	1 1/2 x 2 1/2	3.10	1.86
PLT-776	10-10-10	450-450-25	1 x 2 1/2	2.30	1.38
PLT-777	10-10-20	450-450-25	1 x 2 1/2	2.55	1.41
PLT-778	10-20-20	450-450-25	1 x 3	2.55	1.53
PLT-779	15-15-20	450-450-25	1 x 3	2.70	1.62
PLT-780	20-15-20	450-450-25	1 x 3	2.60	1.68
PLT-782	20-20-20	450-450-25	1 x 3	2.95	1.77
PLT-783	30-20-20	450-450-25	1 1/2 x 2 1/2	3.15	1.89
PLT-784	40-40-40	450-450-150	1 1/2 x 3	4.65	2.79
PLT-785	40-10-80	450-450-200	1 1/2 x 3	3.65	2.19
PLT-786	15-15-10	450-450-200	1 x 3	2.80	1.68
PLT-787	20-20-60	450-450-350	1 1/2 x 3 1/2	3.85	2.31
PLT-789	40-10-10	450-450-350	1 1/2 x 3	3.50	2.10
PLT-790	20-20-40	475-300-25	1 1/2 x 2	3.35	2.01
PLT-792	40-40-25	475-400-50	1 1/2 x 3	4.65	2.79

### Quadruple Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	List Price	Resale Net Price
PLQ-4510	10-10-10-10	450	1 1/2 x 2	\$3.25	\$1.95
PLQ-4520	20-20-20-20	450	1 1/2 x 3	4.50	2.70
PLQ-800	30-30-15-10	450	1 1/2 x 3 1/2	4.25	2.55
PLQ-4710	10-10-10-10	475	1 1/2 x 2	3.95	2.37
PLQ-801	40-20-10-10	475	1 1/2 x 3	5.50	3.30
PLQ-802	30-30-30-40	475	1 1/2 x 3	3.05	1.83
PLQ-803	40-40-30-20	150-150-150-25	1 x 2	3.10	1.66
PLQ-805	50-50-50-20	150-150-150-25	1 x 2	3.40	2.04
PLQ-606	10-10-10-20	300-300-300-25	1 1/2 x 2	2.95	1.77
PLQ-608	60-40-20-50	300-300-300-25	1 1/2 x 3 1/2	4.00	2.40
PLQ-810	40-40-20-10	350-300-300-25	1 x 3	3.95	2.37
PLQ-811	10-10-10-10	350-350-300-300	1 x 2	3.10	1.66
PLQ-812	40-10-80-10	400-350-250-250	1 1/2 x 3 1/2	4.45	2.67
PLQ-814	20-20-20-20	400-400-400-25	1 1/2 x 2 1/2	3.80	2.28
PLQ-815	20-15-15-20	450-350-350-25	1 1/2 x 2	3.60	2.16
PLQ-816	20-15-20-20	450-450-25-25	1 x 2	3.40	2.04
PLQ-818	20-20-30-30	450-450-300-300	1 1/2 x 3	4.35	2.61
PLQ-819	40-10-35-10	450-450-350-350	1 x 3 1/2	5.10	3.06
PLQ-820	10-10-10-20	450-450-25	1 1/2 x 2	3.05	1.63
PLQ-821	40-30-10-20	475-450-150-25	1 1/2 x 3	4.15	2.49
PLQ-823	10-10-10-10	450-450-450-150	1 1/2 x 2	3.05	1.63
PLQ-824	60-10-10-20	450-450-450-150	1 1/2 x 3	4.35	2.61
PLQ-625	40-20-10-10	475-475-475-25	1 1/2 x 3	5.10	3.06

NOTE: Maximum operating temperature of 475 volt units is 65°C.  
NOTE: Each unit is supplied with a bakelite and a metal mounting plate. Additional hardware available at extra cost.  
NOTE: Packaging: Individual display carton.

### CARDBOARD INSULATING TUBES

Catalog Number	Description	Catalog Number	Description
KCT-1	For 1" x 2" can	KCT-5	For 1 1/2" x 2 1/2" can
KCT-2	For 1" x 2 1/2" can	KCT-6	For 1 1/2" x 3" can
KCT-3	For 1" x 3" can	KCT-7	For 1 1/2" x 3 1/2" can
KCT-4	For 1" x 4" can	KCT-8	For 1 1/2" x 3 3/4" can
		KCT-9	For 1 1/2" x 4" can

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS

### TYPE CS *Tomahawk*



The SANGAMO Type CS "Tomahawk" electrolytic capacitors are contained in wax-filled cardboard tubes with insulated leads approximately 8 inches in

length extending from both ends of the unit. Capacity, voltage and polarity of each section is clearly indicated by color of the lead wires; coding information necessary to identify the individual sections is clearly stamped on the tube. Each unit is supplied with a mounting strap to facilitate mounting to the chassis.

#### Dual Common Negative Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
CSD-0210	10-10	25	1/2 x 2 1/2	\$1.05	\$0.63
CSD-0510	10-10	50	1/2 x 2 1/2	1.15	.69
CSD-1508	8-8	150	1/2 x 2 1/2	1.15	.69
CSD-1516	16-16	150	1/2 x 2 1/2	1.25	.75
CSD-1520	20-20	150	1/2 x 2 1/2	1.30	.78
CSD-500	30-20	150	1/2 x 2 1/2	1.40	.84
CSD-1530	30-30	150	1/2 x 2 1/2	1.50	.90
CSD-505	40-20	150	1 x 2 1/2	1.50	.90
CSD-506	40-30	150	1 x 2 1/2	1.60	.96
CSD-1540	40-40	150	1 x 2 1/2	1.70	1.02
CSD-512	50-30	150	1 x 2 1/2	1.70	1.02
CSD-1550	50-50	150	1 x 3	1.85	1.11
CSD-2516	16-16	250	1 x 2 1/2	1.70	1.02
CBS-4508	8-8	450	1 x 3 1/2	2.10	1.26
CBD-522	8-16	450	1 x 2 1/2	2.00	1.20
CBD-4520	20-20	450	1 x 3 1/2	2.40	1.44

#### Dual Separate Sections

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
CBS-1520	20-20	150	1 x 2 1/2	\$2.00	\$1.20
CBS-4508	8-8	450	1 x 3 1/2	2.10	1.26
CBS-4516	16-16	450	1 1/2 x 3 1/2	3.15	1.89

#### Triple Common Negative Units

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
CBT-1520	20-20-20	150	1 x 2 1/2	\$2.20	\$1.32
CBT-523	40-20-20	150	1 x 2 1/2	2.30	1.38
CBT-524	40-30-20	150	1 x 2 1/2	2.35	1.41
CBT-1540	40-10-40	150	1 x 3 1/2	2.50	1.50
CBT-526	20-20-20	150-150-25	1 x 2 1/2	1.90	1.14
CBT-527	40-20-20	150-150-25	1 x 2 1/2	2.00	1.20
CBT-528	40-30-20	150-150-25	1 x 2 1/2	2.05	1.23
CST-532	50-30-20	150-150-25	1 x 2 1/2	2.10	1.26
CST-533	50-30-100	150-150-25	1 x 3 1/2	2.40	1.44
CST-534	80-10-20	150-150-25	1 x 3 1/2	2.45	1.47
CST-535	12-12-20	450-450-25	1 x 2 1/2	2.20	1.32
CST-537	20-20-20	450-450-25	1 1/2 x 3 1/2	2.60	1.66

NOTE: Packaging: 10, 25, or 50 per display carton.

### COLOR CODE OF WIRE LEADS FOR TYPES CS, AND SL CAPACITORS

Black.....Common negative  
 Orange.....Positive, highest voltage or capacity  
 Red.....Positive, next highest voltage or capacity  
 Blue.....Positive, next highest voltage or capacity  
 Yellow.....Positive, next highest voltage or capacity  
 Brown.....Negative, in separate section unit

NOTE: Lead colors are determined by the rated working voltages. Where there are two or more sections of different voltages and the same capacity, the lead color will be determined by the voltage; with the same voltages and unequal capacities the lower capacity takes the next color in the sequence. If there are two sections with equal capacities and voltages the two lead wires will be in the same color.

NOTE: Based upon proposed R.M.A. Color code.

### TYPE SL *Mohican*



Designed primarily as replacements for wet electrolytics, the Type SL electrolytic capacitors are assembled in round aluminum cans with threaded necks providing easy mounting to a chassis with the aid of a nut which is supplied. The

Type SL is completely insulated from the container, the negative connection being made to one of the insulated leads extending through the threaded neck of the can.

#### Single Section

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
SL-2512	12	250	1 x 2 1/2	\$1.75	\$1.05
SL-2525	25	250	1 x 3 1/2	2.00	1.20
SL-4508	8	450	1 1/2 x 2 1/2	1.75	1.05
SL-4512	12	450	1 1/2 x 2 1/2	2.15	1.29
SL-4516	16	450	1 1/2 x 2 1/2	2.40	1.44
SL-4520	20	450	1 1/2 x 2 1/2	2.85	1.59
SL-4530	30	450	1 1/2 x 3 1/2	3.00	1.80
SL-4540	40	450	1 1/2 x 4 1/2	3.40	2.04

#### Common Negative Section

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
SLD-4508	8-8	450	1 1/2 x 3 1/2	\$2.75	\$1.85
SLD-4516	16-16	450	1 1/2 x 3 1/2	3.50	2.10
SLT-4508	8-8-8	450	1 1/2 x 3 1/2	4.25	2.55

#### High Voltage, Series Wound Sections

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
SL-6004	4	600	1 1/2 x 3 1/2	\$3.00	\$1.60
SL-6008	8	600	1 1/2 x 4 1/2	4.00	2.40
SL-6016	16	600	1 1/2 x 4 1/2	5.00	3.00

NOTE: Packaging: Individual carton.

NOTE: For lead color code chart see adjoining column.

### TYPE TS *Cherokee*



Ideally suited for all applications where quick capacitor changes are required, the SANGAMO Type TS units are equipped with a four-pin octal base mounting for use with

standard octal base tube sockets. The special design of the bakelite octal base insures that the aluminum container will not contact the mounting surface and the connections to the brass pin terminals are imbedded in this bakelite base. The base pins are nickel-plated to prevent corrosion and resultant poor contact with the socket terminals.

#### Single Section

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
TS-1520	20	150	1 1/2 x 2 1/2	\$2.40	\$1.44
TS-1540	40	150	1 1/2 x 2 1/2	2.70	1.62
TS-4510	10	450	1 1/2 x 2 1/2	2.60	1.56
TS-4520	20	450	1 1/2 x 2 1/2	3.50	2.10
TS-4540	40	450	1 1/2 x 2 1/2	4.50	2.70
TS-4580	80	450	1 1/2 x 4 1/2	7.70	4.62

#### Dual Sections

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
TSD-1520	20-20	150	1 1/2 x 2 1/2	\$3.10	\$1.86
TSD-1540	40-40	150	1 1/2 x 2 1/2	3.90	2.34
TSD-4510	10-10	450	1 1/2 x 2 1/2	4.20	2.52
TSD-4520	20-20	450	1 1/2 x 2 1/2	5.30	3.18

#### Multiple Sections

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size — Dia. Len.	Net Price	Resale Net Price
TST-4510	10-10-10	450	1 1/2 x 2 1/2	\$5.00	\$3.00
TST-901	20-20-20	450-450-25	1 1/2 x 2 1/2	5.90	3.54

NOTE: Not normally carried in stock. Available on special order only.

NOTE: Packaging: Individual carton.

# SANGAMO CAPACITORS

## ELECTROLYTIC CAPACITORS TYPE EM (MOTOR STARTING)

*Trailblazer*



The SANGAMO Type EM electrolytic capacitor is a standard universal replacement for all motor starter types presently in use, and its dimensions are comparable in every respect. The Type EML is provided with solder lug terminals, the Type EMS being equipped with screw types; otherwise the two units are identical in construction and operational characteristics. Insulating tubes are supplied with both types.

### 110 Volts A.C.

EML Catalog Number	Capacity, mfd.		Can Size, less insulating tube.		List Price	Resale Net Price
	Range	Nominal	Dia.	Len.		
EML-1120	20-24	20	1 3/8	x 3 3/4	\$1.70	\$1.19
EML-1126	26-30	26	1 3/8	x 3 3/4	1.70	1.19
EML-1132	32-36	32	1 3/8	x 3 3/4	1.83	1.28
EML-1138	38-42	38	1 3/8	x 3 3/4	1.83	1.28
EML-1143	43-48	43	1 3/8	x 3 3/4	1.83	1.28
EML-1153	53-60	53	1 3/8	x 3 3/4	1.89	1.32
EML-1164	64-72	64	1 3/8	x 3 3/4	1.89	1.32
EML-1170	70-78	70	1 3/8	x 3 3/4	2.02	1.41
EML-1175	75-84	75	1 3/8	x 3 3/4	2.02	1.41
EML-1186	86-96	86	1 3/8	x 3 3/4	2.08	1.45
EML-1197	97-107	97	1 3/8	x 3 3/4	2.15	1.50
EML-11108	108-120	108	1 3/8	x 3 3/4	2.15	1.50
EML-11124	124-138	124	1 3/8	x 3 3/4	2.27	1.58
EML-11145	145-162	145	1 3/8	x 3 3/4	2.78	1.94
EML-11161	161-180	161	1 3/8	x 4 1/4	3.03	2.12
EML-11161	161-180	161	2 3/8	x 3 3/4	3.03	2.12
EML-11189	189-216	189	2 3/8	x 3 3/4	3.54	2.47
EML-11216	216-240	216	2 3/8	x 3 3/4	4.11	2.87
EML-11243	243-270	243	2 3/8	x 3 3/4	4.55	3.18
EML-11270	270-300	270	2 3/8	x 3 3/4	5.31	3.71
EML-11324	324-360	324	2 3/8	x 4 1/4	6.07	4.24
EML-11378	378-420	378	2 3/8	x 4 1/4	6.83	4.78
EML-11400	400-480	400	2 3/8	x 4 1/4	9.49	6.64

### 220 Volts A.C.

EML Catalog Number	Capacity, mfd.		Can Size, less insulating tube.		List Price	Resale Net Price
	Range	Nominal	Dia.	Len.		
EML-2220	20-24	20	1 3/8	x 3 3/4	\$2.91	\$2.03
EML-2226	26-30	26	1 3/8	x 3 3/4	3.35	2.34
EML-2232	32-36	32	2 3/8	x 4 1/4	3.79	2.65
EML-2238	38-42	38	2 3/8	x 4 1/4	4.30	3.01
EML-2243	43-48	43	2 3/8	x 4 1/4	4.55	3.18
EML-2253	53-60	53	2 3/8	x 4 1/4	5.19	3.63

### 110 Volts A.C.

EMS Catalog Number	Capacity, mfd.		Can Size, less insulating tube.		List Price	Resale Net Price
	Range	Nominal	Dia.	Len.		
EMS-1120	20-24	20	1 3/8	x 3 3/4	\$1.75	\$1.22
EMS-1126	26-30	26	1 3/8	x 3 3/4	1.75	1.22
EMS-1132	32-36	32	1 3/8	x 3 3/4	1.88	1.31
EMS-1138	38-42	38	1 3/8	x 3 3/4	1.88	1.31
EMS-1143	43-48	43	1 3/8	x 3 3/4	1.88	1.31
EMS-1153	53-60	53	1 3/8	x 3 3/4	1.94	1.35
EMS-1164	64-72	64	1 3/8	x 3 3/4	1.94	1.35
EMS-1170	70-78	70	1 3/8	x 3 3/4	2.07	1.44
EMS-1175	75-84	75	1 3/8	x 3 3/4	2.07	1.44
EMS-1186	86-96	86	1 3/8	x 3 3/4	2.13	1.48
EMS-1197	97-107	97	1 3/8	x 3 3/4	2.20	1.53
EMS-11108	108-120	108	1 3/8	x 3 3/4	2.20	1.53
EMS-11124	124-138	124	1 3/8	x 3 3/4	2.32	1.61
EMS-11145	145-162	145	1 3/8	x 3 3/4	2.63	1.97
EMS-11161	161-180	161	1 3/8	x 4 1/4	3.08	2.15
EMS-11161	161-180	161	2 3/8	x 3 3/4	3.08	2.15
EMS-11189	189-216	189	2 3/8	x 3 3/4	3.59	2.50
EMS-11216	216-240	216	2 3/8	x 3 3/4	4.16	2.90
EMS-11243	243-270	243	2 3/8	x 3 3/4	4.60	3.21
EMS-11270	270-300	270	2 3/8	x 3 3/4	5.36	3.74
EMS-11324	324-360	324	2 3/8	x 4 1/4	6.13	4.27
EMS-11378	378-420	378	2 3/8	x 4 1/4	6.88	4.81
EMS-11400	400-480	400	2 3/8	x 4 1/4	9.54	6.67

### 220 Volts A.C.

EMS Catalog Number	Capacity, mfd.		Can Size, less insulating tube.		List Price	Resale Net Price
	Range	Nominal	Dia.	Len.		
EMS-2220	20-24	20	1 3/8	x 3 3/4	\$2.96	\$2.06
EMS-2226	26-30	26	1 3/8	x 3 3/4	3.40	2.37
EMS-2232	32-36	32	2 3/8	x 4 1/4	3.84	2.68
EMS-2238	38-42	38	2 3/8	x 4 1/4	4.35	3.04
EMS-2243	43-48	43	2 3/8	x 4 1/4	4.60	3.21
EMS-2253	53-60	53	2 3/8	x 4 1/4	5.24	3.66

NDTE: For insulating tube dimensions add 1/8" to the can diameter and 1/4" to the can length.

NDTE: Packaging: Individual display carton.

## PAPER CAPACITORS

*Redskin*

## PLASTIC MOLDED TUBULAR



The SANGAMO "Redskin" is molded in a hard thermosetting plastic providing more stable capacity values, excellent seal characteristics, and satisfactory operation up to 85°C. temperature. Small in physical size, and rugged in construction, this pioneer tubular is especially adaptable to television, auto radio, small AC-DC set, and other uses. The leads are firmly imbedded in the hard plastic case and have been especially designed to resist breakage. The "Redskin" assures operating dependability under extremes of heat, humidity and physical stress.

### 200 W.V. D.C.

Catalog Number	Capacity mfd.	Size —		List Price	Resale Net Price
		Dia.	Len.		
300210	.1	1/8	x 1 1/2	\$0.35	\$0.21
300205	.25	1/8	x 2	.45	.27
300205	.5	1/8	x 2	.60	.36
300210	1.0	1	x 2 1/2	.90	.54

### 400 W.V. D.C.

Catalog Number	Capacity mfd.	Size —		List Price	Resale Net Price
		Dia.	Len.		
300411	.01	3/8	x 1 1/2	\$0.25	\$0.15
300412	.02	3/8	x 1 1/2	.25	.15
300415	.05	3/8	x 1 1/2	.30	.18
300401	.1	3/8	x 1 1/2	.35	.21
300402	.2	3/8	x 2	.40	.24
3004025	.25	3/8	x 2	.45	.27
300405	.5	3/8	x 2	.60	.36
300410	1.0	1 1/8	x 2 1/2	.90	.54

### 600 W.V. D.C.

Catalog Number	Capacity mfd.	Size —		List Price	Resale Net Price
		Dia.	Len.		
300635	.0005	3/8	x 1	\$0.25	\$0.15
300621	.001	3/8	x 1	.25	.15
300622	.002	3/8	x 1	.25	.15
300623	.003	3/8	x 1	.25	.15
300624	.004	3/8	x 1	.25	.15
300625	.005	3/8	x 1	.25	.15
300626	.006	3/8	x 1 1/2	.25	.15
300611	.01	3/8	x 1 1/2	.30	.18
300612	.02	3/8	x 1 1/2	.30	.18
300613	.03	3/8	x 1 1/2	.35	.21
300614	.04	3/8	x 1 1/2	.35	.21
300615	.05	3/8	x 1 1/2	.40	.24
300616	.06	3/8	x 1 1/2	.40	.24
300601	.1	3/8	x 2	.45	.27
300602	.2	3/8	x 2	.55	.33
3006025	.25	3/8	x 2	.55	.33
300605	.5	1	x 2 1/2	.80	.48
300610	1.0	1 3/8	x 2 1/2	1.25	.75

### 1600 W.V. D.C.

Catalog Number	Capacity mfd.	Size —		List Price	Resale Net Price
		Dia.	Len.		
301635	.0005	3/8	x 1 1/2	\$0.55	\$0.33
301621	.001	3/8	x 1 1/2	.55	.33
301622	.002	3/8	x 1 1/2	.55	.33
3016225	.0025	3/8	x 1 1/2	.55	.33
301623	.003	3/8	x 1 1/2	.55	.33
301624	.004	3/8	x 1 1/2	.55	.33
301625	.005	3/8	x 1 1/2	.55	.33
301626	.006	3/8	x 1 1/2	.55	.33
301627	.007	3/8	x 1 1/2	.55	.33
301628	.008	3/8	x 1 1/2	.55	.33
301611	.01	3/8	x 2	.60	.36
101612	.015	3/8	x 2	.60	.36
301612	.02	3/8	x 2	.60	.36
3016125	.025	3/8	x 2	.60	.36
301613	.03	3/8	x 2	.60	.36
301614	.04	3/8	x 2	.60	.36
301615	.05	3/8	x 2	.70	.42

NDTE: Additional capacity values in the 200, 400 and 1000 volt ratings can be supplied on request.

NDTE: Packaging: 20, 50, or 100 per display carton.

# SANGAMO CAPACITORS

## PAPER CAPACITORS

### TYPE 13 *Sioux*

The SANGAMO "Sioux" paper tubular capacitor has been specifically designed for television applications where long, dependable and trouble-free service is required in high voltage applications. Through the use of special sealing materials and new construction techniques the use of wax as a filler and seal has been completely eliminated. They are mineral oil impregnated and designed to withstand continuous operation at 85°C. The special end seals will not crack, melt, or peel away from the cardboard tube, thus excluding moisture over long periods of operation.

TYPE 13 TELEVISION PAPER TUBULAR CAPACITORS						
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
130635	.0005	6000	1 1/4	x 1 3/4	\$1.15	\$0.89
130621	.001	6000	1 1/4	x 2 1/4	1.20	.72
130622	.002	6000	1 1/4	x 2 3/4	1.20	.72
130623	.003	6000	1 1/4	x 2 3/4	1.30	.78
130624	.004	6000	1 1/4	x 2 3/4	1.30	.78
130625	.005	6000	1 1/4	x 2 3/4	1.50	.90
130611	.01	6000	1 1/4	x 3	1.60	1.08
130612	.02	6000	1 1/4	x 3 1/4	1.95	1.17
130613	.03	6000	1 1/4	x 3 1/4	2.20	1.32
130614	.04	6000	1 1/4	x 3 1/4	2.30	1.58
130615	.05	6000	1 1/4	x 3 1/4	2.40	1.44
130721	.001	7500	1 1/2	x 2	1.35	.81
130725	.005	7500	1 1/2	x 2	1.70	1.02
131035	.0005	10000	1 1/2	x 3	1.50	.90
131021	.001	10000	1 1/2	x 3	1.60	.96
131022	.002	10000	1 1/2	x 3	1.70	1.02

NOTE: Mounting brackets available at extra cost.  
NOTE: Packaging: 5, 10, or 25 per display carton.

### TYPE 21 *Chippewa*



Hermetically sealed in metal tubes, the SANGAMO Type 21 paper capacitor is primarily designed for bypass and coupling applications. They are non-inductively wound; and, impregnated and filled with mineral oil assuring greatest stability of capacity and low power factor over the wide range of temperatures from -55°C. to +85°C. Each unit is provided with a mounting bracket and an external cardboard sleeve to insulate it from the chassis and other metal parts. The capacitor section is also insulated from the metal tube itself.

#### TYPE 21 METAL CASES MINERAL OIL PAPER CAPACITORS

600 W.V. D.C.						
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
2106-.006	.006	600	1 1/4	x 1 3/4	.95	.57
2106-.01	.01	600	1 1/4	x 1 3/4	.95	.57
2106-.02	.02	600	1 1/4	x 1 3/4	1.05	.63
2106-.03	.03	600	1 1/4	x 1 3/4	1.10	.66
2106-.05	.05	600	1 1/4	x 1 3/4	1.10	.66
2106-.06	.06	600	1 1/4	x 1 3/4	1.10	.66
2106-.1	.1	600	1 1/4	x 1 3/4	1.25	.75
2106-.25	.25	600	1 1/4	x 2 1/4	1.78	1.02
2106-.5	.5	600	1 1/4	x 2 3/4	2.20	1.32
1000 W.V. D.C.						
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
2110-.006	.006	1000	1 1/2	x 1 3/4	\$1.10	\$0.66
2110-.01	.01	1000	1 1/2	x 1 3/4	1.10	.66
2110-.05	.05	1000	1 1/2	x 1 3/4	1.30	.78
2110-.1	.1	1000	1 1/2	x 2 1/4	1.50	.90
2110-.25	.25	1000	1 1/2	x 2 3/4	2.30	1.36
1600 W.V. D.C.						
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
2116-.0005	.0005	1600	1 1/2	x 1 3/4	\$1.10	\$0.66
2116-.001	.001	1600	1 1/2	x 1 3/4	1.10	.66
2116-.002	.002	1600	1 1/2	x 1 3/4	1.10	.66
2116-.005	.005	1600	1 1/2	x 1 3/4	1.20	.72
2116-.01	.01	1600	1 1/2	x 1 3/4	1.20	.72
2116-.02	.02	1600	1 1/2	x 1 3/4	1.30	.76
2116-.05	.05	1600	1 1/2	x 2 1/4	1.30	.76
2116-.1	.1	1600	1 1/2	x 2 3/4	2.10	1.26
2000 W.V. D.C.						
Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
2120-.003	.003	2000	1 1/2	x 1 3/4	\$0.95	\$0.57
2120-.0005	.0005	2000	1 1/2	x 1 3/4	\$1.25	\$0.75
2120-.001	.001	2000	1 1/2	x 1 3/4	1.25	.75
2120-.005	.005	2000	1 1/2	x 1 3/4	1.25	.75
2120-.01	.01	2000	1 1/2	x 1 3/4	1.25	.75
2120-.02	.02	2000	1 1/2	x 1 3/4	1.30	.76
2120-.05	.05	2000	1 1/2	x 2 1/4	1.45	.87

### TYPE PC *Black Arrow*



The Type PC capacitor is wound with pure aluminum foil and high grade kraft capacitor tissue to insure long, dependable service under the most rugged conditions. The Type PC capacitors are mineral oil impregnated and sealed with a special sealing compound which prevents entrance of moisture and maintains the high insulation resistance required for their application.

#### TYPE PC MOLDED PAPER CAPACITOR

Catalog Number	Capacity mfd.	Working Volts D.C.	List Price	Resale Net Price
PC-0623	.003	800	\$0.60	\$0.36
PC-0626	.006	600	.50	.30
PC-0611	.01	600	.55	.33
PC-0312	.02	300	.50	.30

NOTE: Packaging: 25, 50, or 100 per display carton.

### TYPE 40-41 *Pueblo*



The SANGAMO Types 40 and 41 diacior impregnated and filled paper capacitors are ideal for use in high voltage filter applications. Enclosed in aluminum containers, they facilitate convenient mounting to the chassis, an insulating washer and spade lug being provided for this purpose. In the Type 40 one connection is provided by an insulated terminal and the other is provided by the case. In the Type 41 both terminals are completely insulated from the case.

#### TYPE 40 PAPER CAPACITORS

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
4006-1	1.	600	1 1/2	x 1 1/2	\$3.50	\$2.10
4006-2	2.	600	1 1/2	x 2 1/2	4.15	2.49
4006-4	4.	600	1 1/2	x 3 1/2	5.70	3.42
4010-1	1.	1000	1 1/2	x 2 1/2	3.80	2.28
4010-2	2.	1000	1 1/2	x 3 1/2	4.95	2.97
4015-.25	.25	1500	1 1/2	x 1 1/2	4.40	2.64
4015-.5	.5	1500	1 1/2	x 2 1/2	4.55	2.73
4015-1	1.	1500	1 1/2	x 3 1/2	4.95	2.97

#### TYPE 41 PAPER CAPACITORS

Catalog Number	Capacity mfd.	Working Volts D.C.	— Size —		List Price	Resale Net Price
			Dia.	Len.		
4106-1	1.	600	1 1/2	x 1 1/2	\$4.25	\$2.55
4106-2	2.	600	1 1/2	x 2 1/2	4.90	2.94
4106-4	4.	600	1 1/2	x 3 1/2	6.45	3.87
4110-1	1.	1000	1 1/2	x 2 1/2	4.55	2.73
4110-2	2.	1000	1 1/2	x 3 1/2	5.70	3.42
4115-.25	.25	1500	1 1/2	x 1 1/2	5.15	3.09
4115-.5	.5	1500	1 1/2	x 2 1/2	5.30	3.18
4115-1	1.	1500	1 1/2	x 3 1/2	5.70	3.42

NOTE: Packaging: Individual display carton.

# SANGAMO CAPACITORS

## PAPER CAPACITORS

### TYPE 50 *Pathfinder*



The Type 50 paper capacitors are primarily intended for bypass application. They are non-inductively wound, are supplied in fractional capacity values, and will provide efficient and continuous operation in R.F. and A.F. bypass, audio frequency coupling, and other A.C. circuits.

These units are impregnated and filled with mineral oil and may be operated under severe humidity conditions at temperatures up to +85°C.

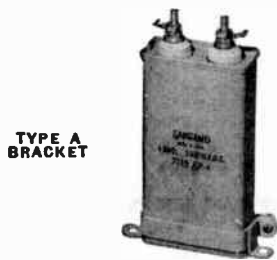
#### 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions — Inches			List Price	Resale Net Price
		L	W	H		
5006-.05	.05	1 1/8	1	3/4	\$2.60	\$1.50
5006-.1	.1	1 1/8	1	3/4	2.65	1.59
5006-.25	.25	1 1/8	1	3/4	2.75	1.65
5006-.5	.5	1 1/8	1	1	3.00	1.80
5006-1	1.0	2	1 1/4	3/4	3.40	2.04
5006-2	2.0*	2	2	1 1/4	4.55	2.73
5006-.05x2	.05-.05	1 1/8	1	3/4	3.30	1.98
5006-.1x2	.1-.1	1 1/8	1	3/4	3.35	2.01
5006-.25x2	.25-.25	1 1/8	1	3/4	3.40	2.04
5006-.5x2	.5-.5	2	1 1/4	3/4	3.90	2.34
5006-1x2	1.0-1.0*	2	2	1 1/4	4.80	2.88
5006-.1x3	.1-.1	1 1/8	1	3/4	3.80	2.28
5006-.25x3	.25-.25-.25	2	1 1/4	3/4	4.30	2.58
5006-.5x3	.5-.5-.5*	2	2	1 1/4	5.20	3.12

#### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions — Inches			List Price	Resale Net Price
		L	W	H		
5010-.05	.05	1 1/8	1	3/4	\$2.75	\$1.65
5010-.1	.1	1 1/8	1	3/4	2.85	1.71
5010-.25	.25	1 1/8	1	3/4	2.95	1.77
5010-.5	.5	2	1 1/4	3/4	3.20	1.92
5010-1	1.0*	2	2	1 1/4	4.00	2.40
5010-.05x2	.05-.05	1 1/8	1	3/4	3.50	2.10
5010-.1x2	.1-.1	1 1/8	1	3/4	3.60	2.16
5010-.25x2	.25-.25	2	1 1/4	3/4	3.80	2.28
5010-.5x2	.5-.5*	2	2	1 1/4	4.95	2.97
5010-1x2	1.0-1.0	2	2	1 1/4	4.15	2.49
5010-.25x3	.25-.25-.25*	2	2	1 1/4	5.00	3.00

NOTE: \*For bottom or top terminal, case size becomes 2" x 2" x 1 1/4".  
NOTE: Packaging: Individual display carton.

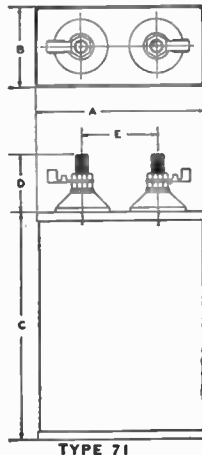


TYPE A BRACKET



TYPE B BRACKET

TYPE C BRACKET



TYPE 71

### TYPE 71 *Seminole*

SANGAMO Type 71 diactor impregnated and filled paper capacitors have the advantage of longer life, lighter weight, and smaller size. Diactor is a specially compounded, chemically purified chlorinated dielectric oil. This synthetic impregnant, whose characteristics can be controlled with great uniformity, possess a high dielectric constant, high volume resistivity, low power factor, high dielectric strength, and is non-inflammable and non-explosive. If mounting brackets are desired the type required should be specified when ordering. Either composition rivet, screw type or stand-off porcelain terminals can be supplied and the type desired should be specified.

#### 600 V. D.C. Working

Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7106-.5	.5	1 1/8	1 1/8	1 1/4	3/4	1 1/8	2 1/4	\$4.25	\$2.55
7106-1	1.	1 1/8	1 1/8	2	3/4	1 1/8	2 1/4	5.25	3.15
7106-2	2.	1 1/8	1 1/8	2 1/4	3/4	1 1/8	2 1/4	6.50	3.90
7106-4	4.	2 1/8	1 1/8	2 1/4	3/4	1 1/8	3	8.25	4.95
7106-6	6.	2 1/8	1 1/8	3	3/4	1 1/8	3	10.25	6.15
7106-8	8.	3	1 1/8	3 1/4	3/4	1 1/8	4	12.25	7.35
7106-10	10.	3	1 1/8	3 1/4	3/4	2	4 1/4	13.75	8.25

TYPE 71 continued on following page, P-107

### TYPE 62-64

### *Scout*



The Types 62 and 64 SANGAMO non-inductively wound paper capacitors are impregnated and filled with mineral oil and are hermetically sealed in seamless drawn-steel cases. The mineral oil impregnant assures dependable service between the wide temperature limits of -55°C. and +85°C. Standard capacitors are supplied with top terminals and brackets for upright mounting. When bottom terminals and inverted mounting are required, add the letter "B" to the end of the catalog number.

#### TYPE 62 PAPER CAPACITORS

##### 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclg. bracket			List Price	Resale Net Price
		L	W	H		
62B06-.01	.01	1 1/8	1 1/8	1 1/8	\$3.30	\$1.98
62B06-.05	.05	1 1/8	1 1/8	1 1/8	3.30	1.98
62B06-.1	.1	1 1/8	1 1/8	1 1/8	3.30	1.98
62B06-.25	.25	1 1/8	1 1/8	1 1/8	3.55	2.13
62C06-.5	.5	1 1/8	1 1/8	1 1/8	3.80	2.28
62A06-1.	1.0	1 1/8	1 1/8	2 1/4	4.30	2.58
62A06-2.	2.0	1 1/8	1 1/8	2 1/4	5.55	3.33

##### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclg. bracket			List Price	Resale Net Price
		L	W	H		
62B10-.05	.05	1 1/8	1 1/8	1 1/8	\$3.40	\$2.04
62B10-.1	.1	1 1/8	1 1/8	1 1/8	3.65	2.19
62C10-.25	.25	1 1/8	1 1/8	1 1/8	3.80	2.28
62A10-.5	.5	1 1/8	1 1/8	2 1/4	4.05	2.43
62A10-1.	1.0	1 1/8	1 1/8	2 1/4	4.75	2.85

#### TYPE 64 PAPER CAPACITORS

##### 600 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclg. bracket			List Price	Resale Net Price
		L	W	H		
64A06-.01	.01	2 1/8	2 1/8	2 1/8	\$3.25	\$1.95
64A06-.05	.05	2 1/8	2 1/8	2 1/8	3.25	1.95
64A06-.1	.1	2 1/8	2 1/8	2 1/8	3.25	1.95
64A06-.25	.25	2 1/8	2 1/8	2 1/8	3.50	2.10
64A06-.5	.5	2 1/8	2 1/8	2 1/8	3.75	2.25
64A06-1.	1.0	2 1/8	2 1/8	2 1/8	4.25	2.55
64A06-2.	2.0	1 1/8	1 1/8	2 1/8	5.50	3.30

##### 1000 W.V. D.C.

Catalog Number	Capacity mfd.	Dimensions inclg. bracket			List Price	Resale Net Price
		L	W	H		
64A10.05	.05	2 1/8	2 1/8	2 1/8	\$3.35	\$2.01
64A10-.1	.1	2 1/8	2 1/8	2 1/8	3.60	2.16
64A10-.25	.25	2 1/8	2 1/8	2 1/8	3.75	2.25
64A10-.5	.5	2 1/8	2 1/8	2 1/8	4.00	2.40
64A10-1.	1.0	1 1/8	1 1/8	2 1/8	4.70	2.82

NOTE: Not normally carried in stock. Available on special order only.  
NOTE: Packaging: Individual display carton.

# SANGAMO CAPACITORS

## PAPER CAPACITORS

### TYPE 71 (cont.)

1000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7110-.1	.1	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	2 1/2	\$3.75	\$2.25
7110-.25	.25	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	2 1/2	4.25	2.55
7110-.5	.5	1 1/8	1 1/8	2	1 1/8	1 1/8	2 1/2	4.50	2.70
7100-1	1.	1 1/8	1 1/8	2 1/2	1 1/8	1 1/8	2 1/2	5.75	3.45
7110-2	2.	1 1/8	1 1/8	3 1/8	1 1/8	1 1/8	2 1/2	7.50	4.50
7110-4	4.	2 1/8	1 1/8	4 1/8	1 1/8	1 1/8	3	9.50	5.70
7110-6	6.	3 1/8	1 1/8	5 1/8	1 1/8	1 1/8	4	12.75	7.65
7110-8	8.	3 1/8	1 1/8	6 1/8	1 1/8	1 1/8	4	13.75	8.25
7110-10	10.	3 1/8	1 1/8	7 1/8	1 1/8	1 1/8	4	15.25	9.15
7110-12	12.	3 1/8	2 1/8	3 1/8	1 1/8	1 1/8	4	16.50	9.90
7110-15	15.	3 1/8	2 1/8	4 1/8	1 1/8	1 1/8	4	18.25	10.95

1500 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7115-.5	.5	1 1/8	1 1/8	2 1/8	1 1/8	1 1/8	2 1/2	\$5.75	\$3.45
7115-1	1.	1 1/8	1 1/8	3 1/8	1 1/8	1 1/8	2 1/2	6.75	4.05
7115-2	2.	2 1/8	1 1/8	3 1/8	1 1/8	1 1/8	3	9.50	5.70
7115-4	4.	3 1/8	1 1/8	4 1/8	1 1/8	1 1/8	4	12.75	7.65
7115-6	6.	3 1/8	1 1/8	5 1/8	1 1/8	1 1/8	4	15.50	9.30
7115-8	8.	3 1/8	2 1/8	4 1/8	1 1/8	1 1/8	4	19.00	11.40
7115-10	10.	3 1/8	3 1/8	4 1/8	1 1/8	1 1/8	4	22.75	13.65
7115-12	12.	3 1/8	3 1/8	4 1/8	1 1/8	1 1/8	4	24.75	14.85
7115-15	15.	3 1/8	4 1/8	4 1/8	1 1/8	1 1/8	4	27.25	16.35

2000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7120-.1	.1	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	2 1/2	\$6.00	\$3.60
7120-.25	.25	1 1/8	1 1/8	2	1 1/8	1 1/8	2 1/2	6.50	3.90
7120-.5	.5	1 1/8	1 1/8	2 1/8	1 1/8	1 1/8	2 1/2	6.75	4.05
7120-1	1.	2 1/8	1 1/8	3 1/8	1 1/8	1 1/8	3	8.25	4.95
7120-2	2.	3 1/8	1 1/8	3 1/8	1 1/8	1 1/8	4	9.75	5.85
7120-4	4.	3 1/8	2 1/8	3 1/8	1 1/8	1 1/8	4	13.75	8.25
7120-6	6.	3 1/8	2 1/8	4 1/8	1 1/8	1 1/8	4	18.25	10.95
7120-8	8.	3 1/8	3 1/8	4 1/8	1 1/8	1 1/8	4	22.75	13.65
7120-10	10.	3 1/8	4 1/8	4 1/8	1 1/8	1 1/8	4	27.75	16.65
7120-12	12.	3 1/8	4 1/8	5 1/8	1 1/8	1 1/8	4	30.25	18.15

2500 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7125-.5	.5	2 1/8	1 1/8	2 1/8	1 1/8	1 1/8	3	\$10.50	\$6.30
7125-1	1.	3 1/8	1 1/8	3 1/8	1 1/8	1 1/8	4	12.00	7.20
7125-2	2.	3 1/8	1 1/8	4 1/8	1 1/8	1 1/8	4	19.50	11.70
7125-4	4.	3 1/8	2 1/8	5 1/8	1 1/8	1 1/8	4	27.25	16.35
7125-10	10.	3 1/8	4 1/8	6 1/8	1 1/8	1 1/8	4	68.25	40.95

3000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7130-.1	.1	2 1/8	1 1/8	2	1 1/8	1 1/8	3	\$12.75	\$7.65
7130-.25	.25	2 1/8	1 1/8	2 1/8	1 1/8	1 1/8	3	13.50	6.10
7130-.5	.5	2 1/8	1 1/8	3 1/8	1 1/8	1 1/8	3	15.25	9.15
7130-1	1.	3 1/8	1 1/8	4 1/8	1 1/8	1 1/8	4	18.25	10.95
7130-2	2.	3 1/8	2 1/8	4 1/8	1 1/8	1 1/8	4	22.75	13.65
7130-4	4.	3 1/8	4 1/8	4 1/8	1 1/8	1 1/8	4	33.50	20.10

4000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7140-1	1.	3 1/8	1 1/8	3 1/8	1 1/8	1 1/8	4	\$22.75	\$13.65
7140-.25	.25	3 1/8	1 1/8	3 1/8	1 1/8	1 1/8	4	24.00	14.40
7140-.5	.5	3 1/8	1 1/8	3 1/8	1 1/8	1 1/8	4	27.25	16.35
7140-1	1.	3 1/8	2 1/8	4 1/8	1 1/8	1 1/8	4	33.50	20.10
7140-2	2.	3 1/8	3 1/8	5 1/8	1 1/8	1 1/8	4	42.50	25.50
7140-4	4.	3 1/8	4 1/8	7 1/8	1 1/8	1 1/8	4	60.75	38.45

5000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7150-.5	.5	3 1/8	2 1/8	4 1/8	2 1/8	2 1/8	4	\$30.25	\$18.15
7150-1	1.	3 1/8	4 1/8	4 1/8	2 1/8	2 1/8	4	36.00	22.80
7150-2	2.	3 1/8	4 1/8	5 1/8	2 1/8	2 1/8	4	46.75	29.25

6000 V. D.C. Working									
Catalog Number	Capacity mfd.	Dimensions — Inches						List Price	Resale Net Price
		A	B	C	D	E	F		
7160-1	1.	3 1/8	4 1/8	5 1/8	2 1/8	2 1/8	4	\$76.00	\$45.60

NOTE: Standard tolerance  $\pm 10\%$ .  
 NOTE: Brackets supplied at no extra cost.  
 NOTE: Items in normal demand carried in stock. Other items on special order only.  
 NOTE: Packaging: Individual display carton.

### TYPE 75 *Ute*



SANGAMO Type 75 diaclor impregnated and filled paper capacitors are designed for continuous A.C. duty in ambient temperatures up to 75°C. These capacitors are recommended for use with capacitor motors, as power factor correction units, and for other similar A.C. applications.

Catalog Number	Capacity mfd.	Working Volts D.C.	Dimensions — Inches			List Price	Resale Net Price
			L	W	H		
7522-3.75	3.75	220	2 1/8	1 1/8	2 1/8	\$ 5.35	\$3.21
7522-5	5.	220	2 1/8	1 1/8	3 1/8	6.10	3.66
7522-7.5	7.5	220	2 1/8	1 1/8	4 1/8	7.65	4.59
7522-12	12.	220	3 1/8	1 1/8	4 1/8	10.91	6.55
7533-3.75	3.75	330	2 1/8	1 1/8	3 1/8	6.10	3.66
7533-5	5.	330	2 1/8	1 1/8	4 1/8	6.95	4.17
7533-10	10.	330	3 1/8	1 1/8	4 1/8	10.40	6.24
7544-2	2.	440	1 1/8	1 1/8	3 1/8	5.90	3.54
7544-3.75	3.75	440	2 1/8	1 1/8	4 1/8	7.05	4.23
7544-5	5.	440	3 1/8	1 1/8	3 1/8	8.30	4.98
7544-12	12.	440	3 1/8	2 1/8	4 1/8	14.55	8.73
7566-2	2.	660	2 1/8	1 1/8	3 1/8	6.95	4.17
7566-3.75	3.75	660	3 1/8	1 1/8	3 1/8	8.65	5.19
7566-5	5.	660	3 1/8	1 1/8	4 1/8	10.25	6.15

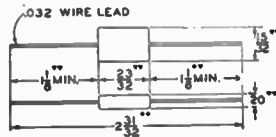
NOTE: Standard tolerance  $\pm 6\%$ .  
 NOTE: Brackets can be supplied at extra cost; they are not standard equipment.  
 NOTE: Not normally carried in stock. Available on special order only.  
 NOTE: Packaging: Individual sales carton.

# SANGAMO CAPACITORS

## TYPE K Mica Capacitor



## TYPE KR Silvered Mica



## TYPE C Mica Capacitor



## TYPE CR Silvered Mica



### Type K Mica

Catalog Number	Capacity Mfd.	List Price	Net Price
<b>500 V.D.C. Working— 1000 V.D.C. Test</b>			
K-1550	.000005	\$0.25	\$0.15
K-1410	.00001	.25	.15
K-1415	.000015	.25	.15
K-1420	.00002	.25	.15
K-1425	.000025	.25	.15
K-1430	.00003	.25	.15
K-1439	.000039	.25	.15
K-1443	.000043	.20	.12
K-1450	.00005	.20	.12
K-1475	.000075	.20	.12
K-1310	.0001	.20	.12
K-1315	.00015	.20	.12
K-1320	.0002	.20	.12
K-1325	.00025	.25	.15
K-1330	.0003	.25	.15
K-1340	.0004	.25	.15
K-1350	.0005	.25	.15
K-1370	.0007	.35	.21
K-1380	.0008	.35	.21
K-1210	.001	.35	.21

Standard tolerance,  $\pm 20\%$ , B characteristic.

Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed.

### Type KR Silvered Mica

Catalog Number	Capacity Mfd.	List Price	Net Price
<b>500 V.D.C. Working— 1000 V.D.C. Test</b>			
KR-1550	.000005	\$0.45	\$0.27
KR-1410	.00001	.40	.24
KR-1415	.000015	.40	.24
KR-1420	.00002	.40	.24
KR-1425	.000025	.40	.24
KR-1430	.00003	.40	.24
KR-1439	.000039	.40	.24
KR-1443	.000043	.40	.24
KR-1450	.00005	.40	.24
KR-1475	.000075	.40	.24
KR-1310	.0001	.40	.24
KR-1315	.00015	.45	.27
KR-1320	.0002	.45	.27
KR-1325	.00025	.45	.27
KR-1330	.0003	.55	.33
KR-1340	.0004	.65	.39
KR-1350	.0005	.70	.42
KR-1370	.0007	.75	.45
KR-1380	.0008	.80	.48
KR-1210	.001	.90	.54

Standard tolerance,  $\pm 5\%$ , C characteristic.

### Type C Mica

Catalog Number	Capacity Mfd.	List Price	Net Price
<b>500 V.D.C. Working— 1000 V.D.C. Test</b>			
C-1350	.0005	\$0.25	\$0.15
C-1362	.00062	.25	.15
C-1375	.00075	.25	.15
C-1380	.0008	.25	.15
C-1390	.0009	.25	.15
C-1210	.001	.30	.18
C-1215	.0015	.30	.18
C-1220	.002	.40	.24
C-1225	.0025	.45	.27
*C-1230	.003	.50	.30
*C-1240	.004	.50	.30
*C-1250	.005	.65	.39
*C-1260	.006	.65	.39

### 300 V.D.C. Working— 600 V.D.C. Test

*C-06275	.0075	.90	.54
*C-06280	.008	1.00	.60
*C-06290	.009	1.00	.60
*C-06110	.01	1.20	.72

Standard tolerance,  $\pm 20\%$ , B characteristic. \*Thickness  $\frac{1}{16}$ "

Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed.

### Type CR Silvered Mica

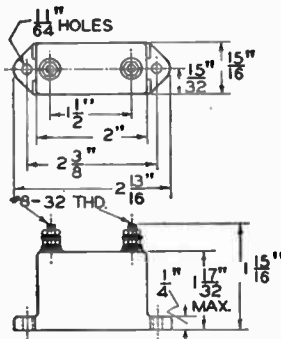
Catalog Number	Capacity Mfd.	List Price	Net Price
<b>500 V.D.C. Working— 1000 V.D.C. Test</b>			
CR-1350	.0005	\$0.70	\$0.42
CR-1362	.00062	.80	.48
CR-1375	.00075	.85	.51
CR-1380	.0008	.95	.57
CR-1390	.0009	1.00	.60
CR-1210	.001	1.10	.66
CR-1215	.0015	1.35	.81
CR-1220	.002	1.35	.81
CR-1225	.0025	1.80	1.08
*CR-1230	.003	2.05	1.23
*CR-1240	.004	2.15	1.29
*CR-1250	.005	2.25	1.35
*CR-1260	.006	2.40	1.44

### 300 V.D.C. Working— 600 V.D.C. Test

*CR-06275	.0075	2.45	1.47
*CR-06280	.008	2.80	1.68
*CR-06290	.009	2.95	1.77
*CR-06110	.01	3.20	1.92

Standard tolerance,  $\pm 5\%$ , C characteristic. \*Thickness  $\frac{1}{16}$ "

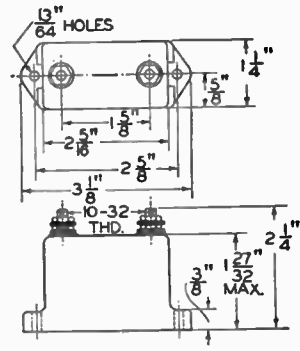
## TYPES F1 AND F2 MICA CAPACITORS



TYPE F1



Types F1 and F2 capacitors, the smallest of the Sangamo line of transmitting types, possess a range of voltage and current ratings suitable for many applications. They are housed in low loss molded bakelite cases. The mica and foil sections are permanently clamped, vacuum impregnated, and installed in the case in such a manner as to provide stable characteristics and adequate moisture proofing.



TYPE F2

### TYPE F1 MICA CAPACITORS

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
F1-331	.0001	3000	\$10.80	\$6.48
F1-332	.0002	3000	10.80	6.48
F1-3325	.00025	3000	10.80	6.48
F1-335	.0005	3000	10.80	6.48
F1-321	.001	3000	10.80	6.48
F1-322	.002	3000	10.80	6.48
F1-223	.003	2000	10.80	6.48
F1-224	.004	2000	10.80	6.48
F1-225	.005	2000	10.80	6.48
F1-226	.006	2000	10.80	6.48
F1-1528	.008	1500	10.80	6.48
F1-111	.01	1000	10.80	6.48
F1-112	.02	1000	11.50	6.90
F1-0215	.05	250	11.50	6.90
F1-0201	.1	250	12.00	7.20

Standard tolerance  $\pm 5\%$ , B characteristic.

Inquiry should be directed to the factory for availability of capacities and voltages other than those listed above.

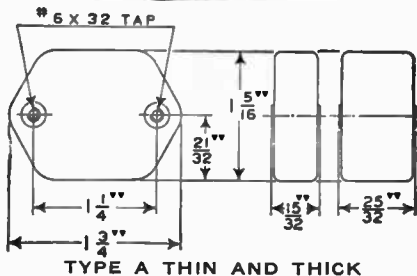
Prices subject to change without notice.

### TYPE F2 MICA CAPACITORS

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
F2-531	.0001	5000	\$14.40	\$8.64
F2-5325	.00025	5000	14.40	8.64
F2-535	.0005	5000	14.40	8.64
F2-536	.0006	5000	14.40	8.64
F2-521	.001	5000	14.40	8.64
F2-522	.002	5000	14.40	8.64
F2-523	.003	5000	16.00	9.60
F2-325	.005	3000	14.40	8.64
F2-326	.006	3000	14.40	8.64
F2-211	.01	2000	14.40	8.64
F2-212	.02	2000	16.00	9.60
F2-1515	.05	1500	14.50	8.70
F2-0501	.1	500	16.50	9.90
F2-0202	.2	250	22.00	13.50
F2-02025	.25	250	24.00	14.40

# SANGAMO CAPACITORS

## TYPE A MICA CAPACITORS



TYPE A THIN AND THICK

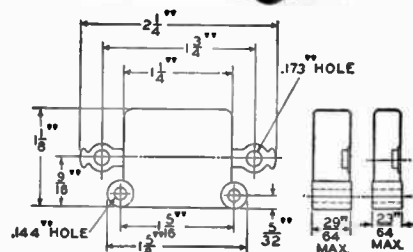
Catalog Number	Capacity Mfd.	List Price	Net Price
<b>600 V.D.C. Working — 1200 V.D.C. Test</b>			
A-1450	.00005	\$0.85	\$0.51
A-1310	.0001	.85	.51
A-1320	.0002	.85	.51
A-1350	.0005	.85	.51
A-1210	.001	.85	.51
A-1220	.002	.90	.54
A-1230	.003	1.20	.72
A-1250	.005	1.20	.72
A-1110	.01	1.95	1.17
A-1115	.015	2.25	1.35
A-1120	.02	2.60	1.56
*A-1125	.025	3.20	1.92
*A-1130	.03	3.45	2.07
*A-1150	.05	5.35	3.21
<b>1200 V.D.C. Working — 2500 V.D.C. Test</b>			
A-2450	.00005	1.00	.60
A-2310	.0001	1.00	.60
A-2320	.0002	1.00	.60
A-2350	.0005	1.00	.60
A-2210	.001	1.25	.75
A-2220	.002	1.90	1.14
A-2230	.003	2.20	1.32
A-2250	.005	2.40	1.44
*A-2110	.01	3.90	2.34
*A-2115	.015	4.65	2.79
*A-2120	.02	5.45	3.21
*A-2130	.03	6.40	3.84
<b>2500 V.D.C. Working — 5000 V.D.C. Test</b>			
A-5450	.00005	1.25	.75
A-5310	.0001	1.25	.75
A-5320	.0002	1.40	.84
A-5350	.0005	1.70	1.02
A-5210	.001	2.05	1.23
A-5215	.0015	2.60	1.56
A-5220	.002	3.10	1.86
A-5230	.003	3.80	2.28
A-5250	.005	4.70	2.82
*A-5110	.01	5.70	3.42
*A-5115	.015	6.20	3.72

\*Thickness 25/32" — Standard Insulators are available if desired. If .144" clearance holes are required, designate by adding letter "A" to Type No. (AA).

Standard tolerance  $\pm 10\%$ , B Characteristic, unless otherwise specified.

Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed above.

## TYPE H MICA CAPACITORS



TYPE H THICK AND THIN

Catalog Number	Capacity Mfd.	List Price	Net Price
<b>600 V.D.C. Working — 1200 V.D.C. Test</b>			
H-1450	.00005	\$0.70	\$0.42
H-1310	.0001	.70	.42
H-1320	.0002	.70	.42
H-1350	.0005	.70	.42
H-1210	.001	.70	.42
H-1220	.002	.80	.48
H-1230	.003	1.00	.60
H-1250	.005	1.00	.60
H-1110	.01	1.60	.96
*H-1115	.015	1.80	1.08
*H-1120	.02	2.20	1.32
*H-1125	.025	2.65	1.59
*H-1130	.03	2.95	1.77
<b>1200 V.D.C. Working — 2500 V.D.C. Test</b>			
H-2450	.00005	1.00	.60
H-2310	.0001	1.00	.60
H-2320	.0002	1.00	.60
H-2350	.0005	1.00	.60
H-2210	.001	1.25	.75
H-2220	.002	1.90	1.14
H-2230	.003	2.10	1.26
*H-2250	.005	2.40	1.44
*H-2110	.01	3.90	2.34
<b>2500 V.D.C. Working — 5000 V.D.C. Test</b>			
H-5450	.00005	1.25	.75
H-5310	.0001	1.25	.75
H-5320	.0002	1.40	.84
H-5350	.0005	1.70	1.02
H-5210	.001	2.05	1.23
H-5215	.0015	2.70	1.62
H-5220	.002	3.10	1.86
*H-5230	.003	3.80	2.28
*H-5250	.005	4.70	2.82

\*Thickness 29/64". For meter mounting bracket add letter "E" to Type designation; if assembled add 30 cents to list price; if unassembled add 20 cents and specify case size.

Standard tolerance  $\pm 10\%$ , B Characteristic, unless otherwise specified.

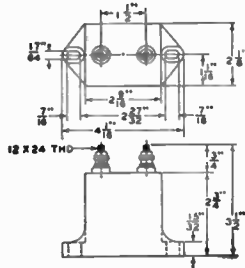
Inquiry should be directed to the factory as to the availability of capacities and voltages other than those listed above.

Prices subject to change without notice.



# SANGAMO CAPACITORS

## TYPE E MICA CAPACITORS



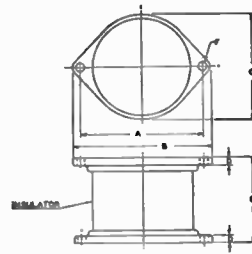
TYPE E

Catalog Number	Capacity Mfd.	Test Volts D.C.	List Price	Net Price
E-1245	.00005	12500	\$8.00	\$4.80
E-1231	.0001	12500	8.00	4.80
E-1235	.0005	12500	8.00	4.80
E-721	.001	7000	7.25	4.35
E-1221	.001	12500	8.00	4.80
E-722	.002	7000	9.50	5.70
E-1222	.002	12500	11.00	6.60
E-723	.003	7000	10.40	6.24
E-1023	.003	10000	13.60	8.16
E-3525	.005	3500	10.50	6.30
E-1025	.005	10000	14.50	8.70
E-3511	.01	3500	16.00	9.60
E-711	.01	7000	16.75	10.05
E-215	.05	2000	16.50	9.90
E-3515	.05	3500	18.50	11.10
E-201	.1	2000	18.50	11.10

Standard tolerance  $\pm 20\%$ .

This type capacitor specifically designed for amateur transmitters. It is not recommended for commercial applications.

## TYPES G1, G2, G3 AND G4 MICA CAPACITORS



TYPE G1, 2, 3 and 4

### TYPE G1

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
G1-641	.00001	6000	\$28.30	\$16.98
G1-645	.00005	6000	30.50	18.30
G1-631	.0001	6000	32.10	19.26
G1-635	.0005	6000	37.00	22.20
G1-621	.001	6000	37.00	22.20
G1-622	.002	6000	39.00	23.40
G1-624	.004	6000	40.10	24.06
G1-625	.005	6000	41.00	24.60
G1-511	.01	5000	41.00	24.60
G1-312	.02	3000	41.00	24.60

### TYPE G2

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
G2-1031	.0001	10000	\$52.00	\$31.20
G2-1032	.0002	10000	52.00	31.20
G2-10325	.00025	10000	52.00	31.20
G2-1035	.0005	10000	52.00	31.20
G2-1021	.001	10000	52.00	31.20
G2-10215	.0015	10000	52.00	31.20
G2-1022	.002	10000	52.00	31.20
G2-824	.004	8000	52.00	31.20
G2-525	.005	5000	52.00	31.20
G2-511	.01	5000	55.00	33.00

### TYPE G3

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
G3-2031	.0001	20000	\$85.00	\$51.00
G3-2032	.0002	20000	90.00	54.00
G3-2035	.0005	20000	90.00	54.00
G3-2021	.001	20000	90.00	54.00
G3-15215	.0015	15000	90.00	54.00
G3-1522	.002	15000	93.50	56.10
G3-1025	.005	10000	98.50	59.10
G3-1011	.01	10000	109.50	65.70
G3-512	.02	5000	104.00	62.40
G3-313	.03	3000	93.00	55.80

### TYPE G4

Catalog Number	Capacity Mfd.	Test Volts Effective Peak Wkg.	List Price	Net Price
G4-3031	.0001	30000	\$134.50	\$80.70
G4-3032	.0002	30000	152.00	91.20
G4-3035	.0005	30000	152.00	91.20
G4-3021	.001	30000	157.00	94.20
G4-25215	.0015	25000	134.50	80.70
G4-2022	.002	20000	134.50	80.70
G4-2024	.004	20000	139.50	83.70
G4-1525	.005	15000	147.50	88.50
G4-1526	.006	15000	155.00	93.00
G4-1011	.01	10000	161.00	96.60

Standard tolerance  $\pm 5\%$ , B characteristic.

### TYPE G MICA CAPACITOR DIMENSIONS — INCHES

Type	A	B	C	D	E	F
G1	3 1/4	3 1/8	2 1/8	1/4	2 1/2	1 1/2
G2	4 1/4	5	3 1/2	1/4	3	2 1/2
G3	5 3/4	6 1/2	5	3/8	4	3 3/4
G4	5 3/4	6 1/2	5	3/8	5 1/4	3 3/4

Inquiry as to the availability of capacities and voltages other than those listed above should be directed to the factory.

Prices subject to change without notice.



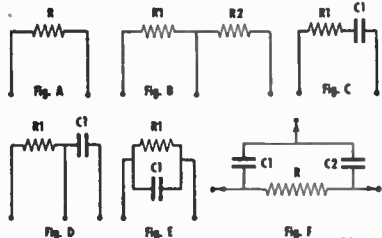
## PRINTED ELECTRONIC CIRCUITS

For the first time, Centralab's famous Printed Electronic Circuits (P.E.C.) are now made available as stock items. P.E.C. units, in simplest form for application as components, consist of resistance materials and pure metallic silver fired to sturdy Ceramic-X plates, including integral "printed" circuit connections, brought out to convenient external leads which are mechanically anchored to the plate. The complete unit is protected with a moisture-proof phenolic coating. The result is a combination of resistors and capacitors of ultra compactness and permanence. No other modern development in electronic circuitry offers so many advantages in low powered applications as regards small size, low cost assembly and utmost reliability.



**RESISTOR AND RESIS.-CAP. UNITS**  
Plate size,  $1\frac{1}{8}'' \times \frac{3}{8}'' \times \frac{1}{16}''$  thick, max. Capacitors, 150 v.d.c.w. Resistors,  $\frac{1}{2}$  watt.

Cat. No.	Dwg.	Consists of	List Price
PC-2	A	2 meg. Resis.	\$.35
PC-21	B	$\frac{1}{2}$ meg.; 110,000 ohms	.50
PC-30	C	R-240,000 ohms. C-1000 mmf.	.50
PC-33	D	R-1 meg. C-1000 mmf.	.50
PC-36	E	R-100,000 ohms. C-100 mmf.	.50



### FILFEC BALANCED DIODE LOAD FILTER

Plate size,  $1\frac{1}{8}'' \times \frac{3}{8}'' \times \frac{1}{16}''$  thick max. Capacitors, 100 v.d.c.w. Resistors,  $\frac{1}{2}$  watt.

Cat. No.	Dwg.	Consists of	List Price
PC-50	F	C1=100 mmf. C2=100 mmf. R=47,000 ohms	\$.60
PC-51	F	C1=150 mmf. C2=150 mmf. R=47,000 ohms	.60

### TELEVISION H-PADS FOR ATTENUATION OF SIGNAL STRENGTH



These handy Centralab P.E.C. units are specially designed for use in television antenna installations where signal strength needs attenuation to secure optimum performance. The proper H-Pad, in many instances, will match the signal strength to the requirements of the receiver. This can prevent overloading, can eliminate tearing of the image, and improve both audio and video results. They are especially valuable where the television set is located too close to the broadcast station. In connection with a switching arrangement, they are helpful to balance signals from stations which, because of high power or location, are too strong in relation to other stations. H-pads also are useful in matching impedance between the antenna and the receiver.

The H-Pad has four terminals, and is for installation in series with the standard 300 ohm antenna. Full directions are included.

**SIZE** —  $1\frac{1}{4}'' \times \frac{1}{8}'' \times \frac{1}{16}''$  thick.  
**TERMINALS** — Solder terminals,  $\frac{3}{32}''$  long.  
**PACKAGED** — Singly in envelopes. In sets of four, in a plastic box.

Cat. No.	Type	Attenuation Rating	List Price
PCH-10	H-Pad	10 db.	\$.80
PCH-20	H-Pad	20 db.	.80
PCH-30	H-Pad	30 db.	.80
PCH-40	H-Pad	40 db.	.80
PCH-100 SET OF FOUR H-PADS, one each of the above, in plastic box			3.00

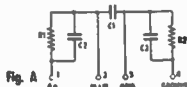
## TRIODE COUPLATES P.E.C. INTERSTAGE COUPLING PLATES MIDGET NO. 2 COUPLATE



Plate size,  $1\frac{1}{8}'' \times \frac{1}{8}'' \times \frac{1}{16}''$  thick max. Capacitors, 450 v.d.c.w. Resistors,  $\frac{1}{2}$  watts.

**Cot. No. PC-70 MIDGET #2 COUPLATE**  
Consisting of (See Fig. A) List Price  
C1=.005 mfd. C2 and C3=250 mmf. \$.70  
R1=500,000 ohms. R2=500,000 ohms.

**Cot. No. PC-71 MIDGET #2 COUPLATE**  
C1=.005 mfd. C2 and C3=250 mmf. .70  
R1=250,000 ohms. R2=500,000 ohms.

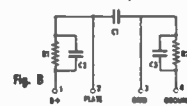


### STANDARD TRIODE COUPLATE

Plate size,  $1\frac{1}{8}'' \times \frac{1}{8}'' \times \frac{1}{16}''$  thick, max. Capacitors, 450 v.d.c.w. Resistors,  $\frac{1}{2}$  watt.

**Cot. No. PC-80 STANDARD COUPLATE**  
Consisting of (See Fig. B) List Price  
C1=.01 mfd. C2 and C3=250 mmf. \$.75  
R1=500,000 ohms. R2=500,000 ohms.

**Cot. No. PC-81 STANDARD COUPLATE**  
C1=.01 mfd. C2 and C3=250 mmf. .75  
R1=250,000 ohms. R2=500,000 ohms.

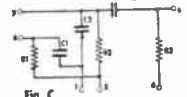


### PENTODE COUPLATES

**Cot. No. PC-90 PENTODE COUPLATE**  
Plate size,  $1\frac{1}{8}'' \times \frac{7}{8}'' \times \frac{1}{16}''$  thick max. Capacitors, 450 v.d.c.w. Resistors,  $\frac{1}{2}$  watt.

Consisting of (See Fig. C) List Price  
C1=.005 mfd. C2=50 mmf. \$.90  
C3=2000 mmf. R1=4.7 megohms. R3=3 megohms.  
R2=1 megohm. R3=2.2 megohms.

**Cot. No. PC-91 PENTODE COUPLATE**  
C1=.005 mfd. C2=100 mmf. .90  
C3=.005 mfd. R1=4.7 megohms.  
R2=1 megohm. R3=2.2 megohms.



### VERTICAL INTEGRATOR PLATES

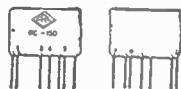
Due to great saving in assembly costs, this Centralab printed circuit is being used widely

Cot. No.	Type	Consisting of	List Price
PC-200	AMPEC	Complete Three Stage Speech Amplifier, including three built-in sockets, less tubes.	\$15.00
PC-201	AMPEC	Same as PC-200, but furnished complete with tubes, two CK512AX and one CK525AX.	26.00

TUBES — Listed separately as a matter of convenience.

Cot. No.	CRL List Price
CK512AX	Raytheon Subminiature Voltage Amplifier Pentode Tube \$3.40
CK525AX	Raytheon Subminiature Output Pentode Tube 4.25

### AUDET OUTPUT STAGE FOR AC-DC RADIO RECEIVERS



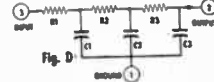
Audet is a P.E.C. audio-detector plate, with seven leads, and furnishes the

values of all components which quite generally comprise the output stage of AC-DC radio receivers. Where there is trouble with old style components in this part of the set, it is easy to replace the entire audio-detector stage with Audet.

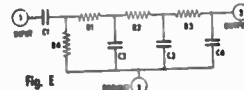
Plate size,  $1\frac{1}{8}'' \times \frac{7}{8}'' \times \frac{1}{16}''$  thick max. Capacitors, 450 v.d.c.w. Resistors,  $\frac{1}{2}$  watt.

in television vertical integrator networks. Two forms are available. Either one has only three external leads. Size, PC-100  $1\frac{1}{8}'' \times \frac{1}{8}'' \times \frac{1}{16}''$  thick max. PC-101,  $1\frac{1}{8}'' \times \frac{1}{8}'' \times \frac{1}{16}''$  thick max. Capacitors, 450 v.d.c.w. Resistor,  $\frac{1}{2}$  watt.

**Cot. No. PC-100 VERTICAL INTEGRATOR**  
Consisting of (See Fig. D) List Price  
C1=.002 mfd. C2=.005 mfd. \$1.10  
C3=.005 mfd. R1=22000 ohms.  
R2=8200 ohms. R3=8200 ohms.

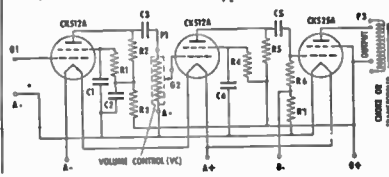


**Cot. No. PC-101 VERTICAL INTEGRATOR**  
Consisting of (See Fig. E) List Price  
C1=.01 mfd. C2=.002 mfd. 1.25  
C3=.005 mfd. C4=.005 mfd.  
R1=22000 ohms. R2=8200 ohms.  
R3=8200 ohms. R4=22000 ohms.



### AMPEC COMPLETE SPEECH AMPLIFIER

There's never been an electronic device like Centralab's Ampec. In the compact unit — permanently bonded to a master plate — are all the components of an audio amplifier — tube sockets, capacitors, resistors, wiring — a three tube, three stage speech amplifier. Similar Centralab units are widely used in hearing aids, for the most trouble-free performance ever attained. Ampec has other interesting applications, as mike preamplifier, etc. Size,  $1\frac{1}{4}'' \times 1\frac{1}{8}'' \times .340''$  over tube sockets. Capacitors, 100 v.d.c.w. Resistors,  $\frac{1}{2}$  watt. Recommended tube complement, T-1 and T-2 (see dwg.) Raytheon type CK512AX; T-3, Raytheon type CK525AX. Gain frequency performance — A voltage 1.2; input voltage, 1 millivolt; B voltage 22,500,000 ohm load. At 1000 cycles per second, the amplification factor is 4000. Volume control (VC in dwg.) not furnished. The ideal control is Centralab Cat. No. B16-124 or switch type Cat. No. B16-224.



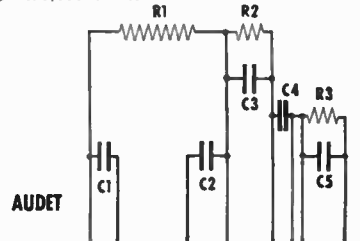
Cot. No.	Type	Consisting of	List Price
PC-200	AMPEC	Complete Three Stage Speech Amplifier, including three built-in sockets, less tubes.	\$15.00
PC-201	AMPEC	Same as PC-200, but furnished complete with tubes, two CK512AX and one CK525AX.	26.00

TUBES — Listed separately as a matter of convenience.

Cot. No.	CRL List Price
CK512AX	Raytheon Subminiature Voltage Amplifier Pentode Tube \$3.40
CK525AX	Raytheon Subminiature Output Pentode Tube 4.25

### AUDET OUTPUT STAGE FOR AC-DC RADIO RECEIVERS

**Cot. No. PC-150 AUDET**  
Consisting of (See drawing) List Price  
C1=.002 mfd. C2=220 mmf. \$1.00  
C3 and C5=220 mmf. C4=.005 mfd.  
R1=6.8 megohms. R2=470,000 ohms.  
R3=470,000 ohms.

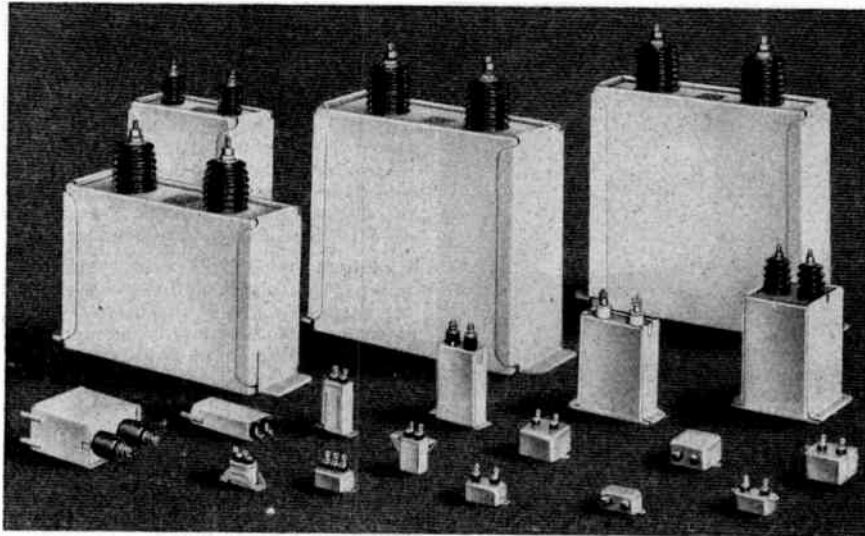




# PYRANOL\* CAPACITORS

\*Trade-mark reg. U. S. Pat. Off.

In accordance with proposed joint Army-Navy specifications JAN-C-25 Amendment-1.



Case style CP 40—cylindrical (not shown)

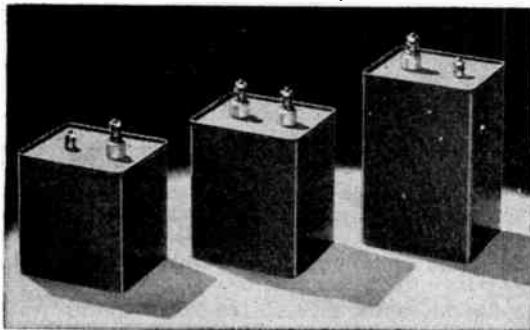
CP 53, 54, 55—Bathtub style  
CP 70—Large Rectangular

CP 61, 63, 65, 67, 69—Miniature Rectangular

All case styles are available in characteristic E and F. Single-section units are supplied with a capacitance tolerance of  $\pm 10$  per cent (K), and two- and three-section units with a capacitance tolerance of  $+20$  per cent,  $-10$  per cent (V). Spade-lug and footed mounting brackets are available for use with capacitors on which the mounting bracket is not an integral part.

Write for Bulletin GEA-4357.

## Energy-storage discharge capacitors



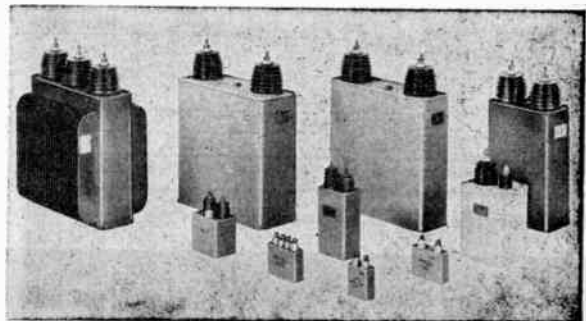
GE light-duty energy-storage capacitors are made in a wide range of ratings to fit practically every requirement of high-speed flash photography, as well as home and industrial welders for light metals. Careful construction, high-quality materials, and skillful design contribute to long life and efficient operation.

Write for Bulletin GEA-4646.

### STANDARD RATINGS

Max. D-c volts	Capacitance, Microfarads	Max. D-c volts	Capacitance, Microfarads
2000	28	4000	12.5
2500	14	4000	25/50
3000	60	4000	100
4000	12.5	5000	25/50
		6000	55
		6000	25

## Capacitor networks



General Electric pioneered in the development of mineral-oil-treated paper dielectric capacitor networks for air, sea, and land radar, and was a prime supplier for the government services. The products supplied varied from the miniature types used with aircraft radar to the large land station designs.

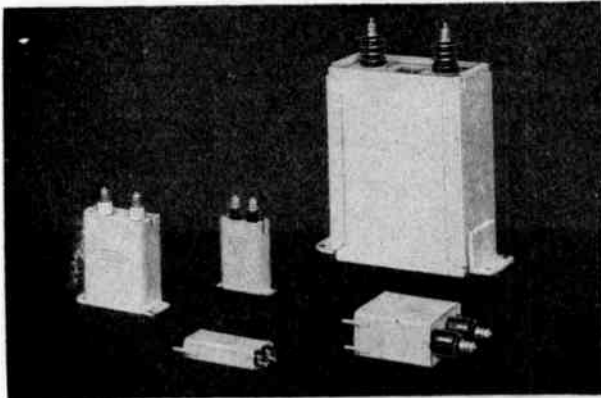
All of the general facilities and the highly specialized test equipment involved are being retained for further work in this field and inquiries on new requirements are solicited.



# PYRANOL\* CAPACITORS

\*Trade-mark reg. U. S. Pat. Off.

## Case Style 70



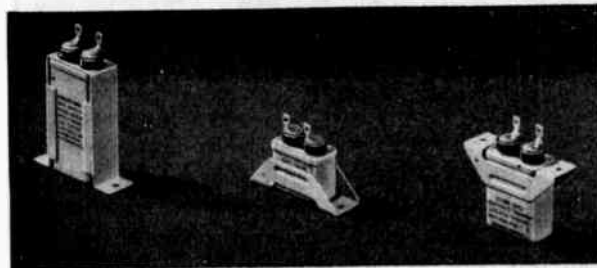
Case style 70 units with various types of terminals and removable mounting brackets

These Pyranol fixed-paper-dielectric capacitors in case style 70 are hermetically sealed in rectangular STANDARD RATINGS

Nominal Direct Voltage Rating	Capacitance Ratings, Microfarads	Type of Terminals
400	4.0, 6.0, 8.0, 10.0	SI*
600	1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 15.0, 20.0, 25.0	SI or PI†
1000	1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 15.0	SI or PI
1500	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0, 15.0	SI or PI
2000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0, 12.0	PI
2500	0.50, 1.0, 2.0, 4.0, 10.0, 20.0, 25.0, 55.0, 75.0	PI
3000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 8.0, 12.0, 20.0, 45.0, 60.0	PI
4000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 7.0, 13.0, 20.0, 30.0	PI
5000	0.10, 0.25, 0.50, 1.0, 2.0, 4.0, 6.0, 8.0, 14.0, 18.0	PI
6000	0.10, 1.0, 2.0, 4.0, 5.0, 10.0, 14.0	PI
7500	0.10, 0.25, 0.50, 1.0, 2.0, 3.0, 7.0, 9.0	PI

\*Solder lug. †Pillar insulator. §Available in SI only ¶Available in PI only

## Case styles 60, 62, and 64



These small rectangular-case fixed-paper-dielectric units are of narrower width than the "bathtub" units, and will fit into a very restricted panel surface, where case height is not the limiting dimension. Mounting lugs, of either the removable or attached type, are of very sturdy construction.

cases. This line includes standard ratings, ranging from very small units weighing only three ounces to large high-voltage units weighing up to 175 pounds.

All are of single-section construction, with a capacitance tolerance of  $\pm 10$  per cent. Cases are isolated and the two bushings are brought out through the cover. Units are available with either solder-lug terminals or with pillar-insulator terminals in 600-, 1000-, and 1500-volt ratings. All higher-voltage ratings have pillar-insulator terminals. These units may be operated in altitudes up to 7500 feet.

Bushings with solder-lug terminals are made of molded Textolite\*, and those which have pillar-insulator terminals are of the highest-quality porcelain. All bushings are thoroughly bonded to the container to provide a permanent liquid-tight seal.

All units can be supplied with removable mounting brackets, as illustrated above. In addition to the screw-spade-lug brackets, two types of footed brackets are also available—one with a straight "L"-shaped foot and the other with a "U"-shaped foot that grips the bottom of the unit. The brackets can be attached to either the top or bottom of the unit, permitting either upright or inverted mounting.

Write for Bulletin GEA-2621.

\*Trade-mark Reg. U. S. Pat. Off.

## STANDARD RATINGS

Nominal Direct Voltage Rating	Capacitance Ratings, Microfarads	Type of Terminals
10,000	0.10, 0.25, 0.50, 1.0, 1.5, 2.0, 3.5, 5.0	PI
12,500	0.10, 0.25, 0.50, 0.75, 1.0, 1.75, 2.5, 3.3	PI
15,000	0.25, 0.50, 0.75, 0.90, 1.75, 2.25	PI
20,000	0.15, 0.25, 0.50, 1.0, 1.25	PI
25,000	0.10, 0.25, 0.60, 1.0	PI
30,000	0.25, 0.5, 0.75	PI
40,000	0.10, 0.20, 0.25, 0.35	PI
50,000	0.17, 0.25	PI
75,000‡	0.25	PI
100,000‡	0.125	PI

‡Mid-point connected to case.

All three case styles are constructed with solder-lug terminals, and are available in either single-section or two-section construction for all circuit diagrams. The metallic containers are hermetically sealed, and of deep-drawn construction.

Case style 60 units have no brackets, but removable brackets of either the footed or screw-spade-lug type can be supplied, while the case style 62 and case style 64 units have soldered-on brackets for upright or inverted mounting, respectively.

## STANDARD RATINGS

Type of Construction	Nominal Direct Voltage Rating	Capacitance Ratings, Microfarads*	Capacitance Tolerance
Single-section units	400	2.0	$\pm 10\%$
	600	0.05, 0.10, 0.25, 0.50, 1.0	
	1000	0.01, 0.02, 0.05, 0.10, 0.25, 0.50	
Two-section units	600	0.10, 0.50	$\pm 20\%$
	1000	0.02, 0.05, 0.10	$-10\%$

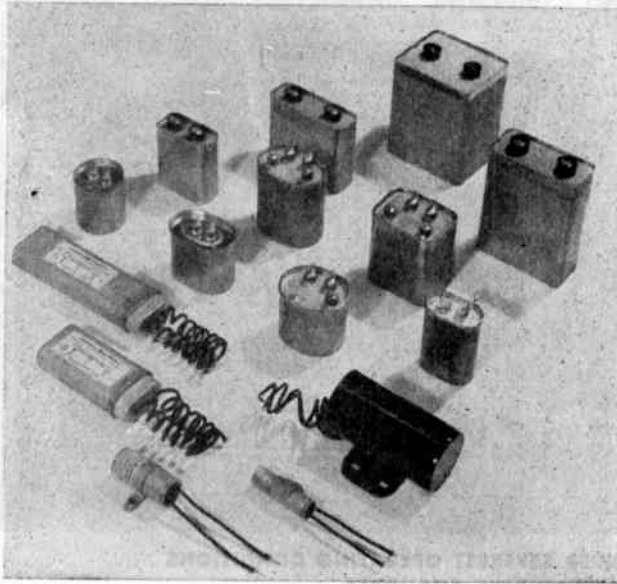
\*Capacitance per section of two-section units.



# PYRANOL\* CAPACITORS

\*Trade-mark reg. U. S. Pat. Off.

## FOR GENERAL-PURPOSE A-C APPLICATIONS



Small a-c Pyranol capacitors are recommended for use with motors, luminous-tube transformers, industrial control, and other equipment.

The use of Pyranol as a treating material, because of its high dielectric strength, high permittivity, and exceptional stability, has made possible a marked reduction in physical size, as well as a capacitor far superior to those formerly available.

### Design advantages

- (1) Small and compact units, because of the use of Pyranol.
- (2) Wide range of ratings available in rectangular, cylindrical and oval cases.
- (3) Three styles of mounting brackets are available and supplied separate from the units. Units may be operated in any position.

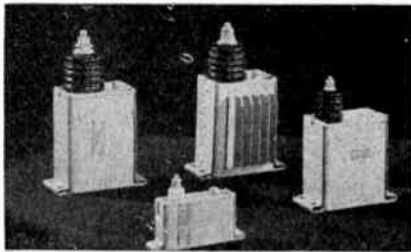
Write for Bulletin GEA-2027

### STANDARD RATINGS

Rated Voltage 60 Cycles	Fabricated Rectangular	Drawn Rectangular	Drawn Cylindrical	Shallow Drawn	Oval Drawn
220	1-15 muf	.....	.....	.....	2-6 muf
236	1-20 muf	.....	.....	.....	.....
250	.....	.....	.....	.....	.....
330	1-50 muf	1-17.5 muf	2.5-11 muf	2-3.5 muf	2-3.5 muf
440	1-28 muf	.....	.....	.....	2-4 muf
660	1-15 muf	.....	.....	.....	1.75 muf

\* Represents only a list of standard ratings. Ratings other than these listed will be supplied when required.

## CAPACITORS FOR OSCILLATOR TANK CIRCUITS



This line of fixed-paper-dielectric capacitors has been developed primarily for grid and plate blocking service in the electronic oscillator circuits of high-frequency induction-heating equipments. They can also be used to advantage in other high-frequency oscillator circuits of a similar nature.

G-E high-voltage paper-dielectric capacitors are of relatively high capacitance (0.01 muf) for high-frequency units, and yet they are more economical than conventional high-frequency units of considerably smaller capacitance values. They can, therefore, be applied with savings in cost as well as reduced losses and lower voltage drop across the capacitor.

### features

- Hermetically sealed in metallic cases.
- Single-bushing construction for minimum size.
- Removable mounting brackets.
- Internal lead connections arranged for minimum inductance.

Write for Bulletin GEA-4388.

### STANDARD RATINGS

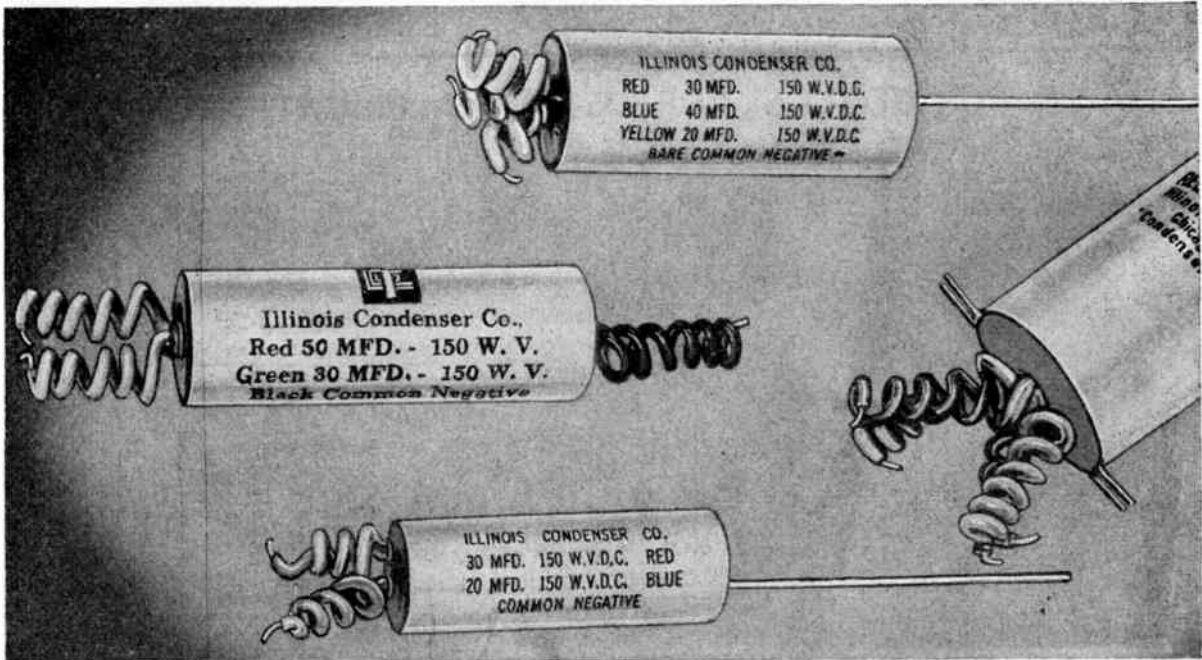
D-C Voltage Rating	Microfarad Rating
5000	0.01
15,000	0.01
20,000	0.01
20,000*	0.01

\* With cooling fins for higher current-carrying capacity.  
Capacitance tolerance  $\pm 10\%$ .



# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



**Type IHC** BUILT FOR LONG LIFE UNDER SEVEREST OPERATING CONDITIONS . . .  
 COLOR CODED LEADS ARE SECURELY ANCHORED . . .  
 COMMON NEGATIVE OR MULTIPLE NEGATIVE UNITS FOR ALL SERVICE APPLICATIONS

## "ILLINI-HYCAPS"

Through careful selection of high temperature sealing compounds and superior engineering design, these completely hermetically sealed, compact tubular electrolytic condensers are the acme of dependability. They operate efficiently under high temperatures and will give long life under all climatic conditions.

The small size and convenient mounting features of our type IHC "ILLINI-HYCAPS" make them popular in both manufacturing and replacement work.

Leads are color coded and securely anchored in the hard wax seal. Dual units have four leads for universal replacement work and are completely insulated.

### TYPE IHC — DUAL UNITS — LOW VOLTAGE Common Negative

Part No.	Capacity Mfd.	Working Voltage D. C.	Diameter	SIZE	Length	List Price
IHC 1125	10-10	25	3/4"		1 3/8"	\$1.05
IHC 1150	10-10	50	1"		1 3/8"	1.15
IHC 16815	16-8	150	1"		2"	1.20
IHC 161615	16-16	150	3/4"		2 3/8"	1.25
IHC 2215	20-20	150	3/4"		2 3/8"	1.30
IHC 2215-D	20-20	150 Dual Neg.	1 1/4"		2 3/8"	1.70

### TYPE IHC — MULTIPLE UNITS

IHC 3215	30-20	150	1 5/16"		2 3/8"	1.40
IHC 3315	30-30	150	1 5/16"		2 3/8"	1.50
IHC 4215	40-20	150	1 5/16"		2 3/8"	1.50
IHC 4415	40-40	150	1 5/16"		2 3/8"	1.70
IHC 5315	50-30	150	1 5/16"		2 3/8"	1.70
IHC 5515	50-50	150	1"		2 3/8"	1.85
IHC 6215	60-20	150	1 5/16"		2 3/8"	1.75
IHC 8475	80-40	150	1"		2 3/8"	2.00
IHC 8815	80-80	150	1-1/8"		2 3/8"	2.35
IHC 125100	125-100	150	1-1/4"		3 1/8"	2.55
IHC 2225	20-20/25	150/25	7/8"		2 3/8"	1.95
IHC 8225	80-20/25	150/25	1"		2 3/8"	2.45
IHC 84215	80-40-20	150	1-1/8"		2 3/8"	2.50
IHC 43215	40-30-20	150	1"		2 3/8"	2.05
IHC 53100	50-30/100	150/25	1"		3"	2.40
IHC 5525	50-50/25	150/25	1"		3"	2.25
IHC 44425	40-40/25	150/25	1"		2 7/8"	2.20
IHC 22215	20-20-20	150	1"		2 3/8"	2.10
IHC 12510025	125-100/25	150/25	1-1/4"		3"	2.75

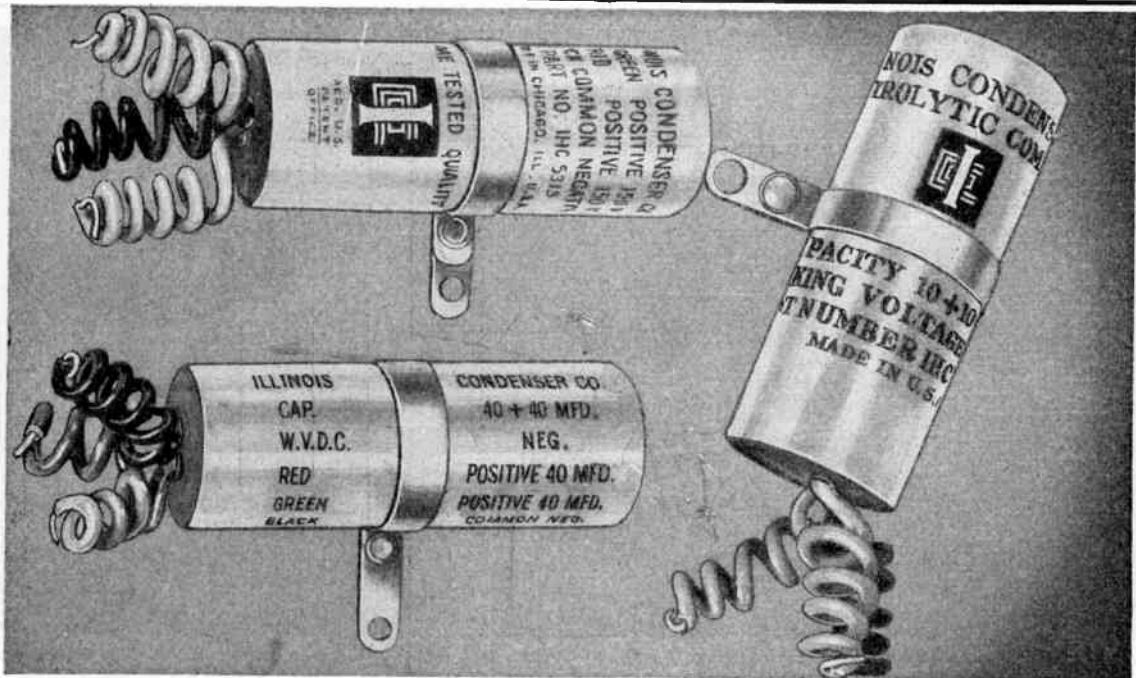
### LUG MOUNTING SEPARATE SECTIONS — DUAL NEGATIVES

ULM 2847	8-8	475 Dual Neg.	1-3/8"	3 3/8"	3.30
ULM 21647	16-16	475 Dual Neg.	1-3/8"	3 3/8"	4.05



# ILLINOIS CONDENSERS

TIME TESTED QUALITY



## TUBULAR ELECTROLYTICS

Hermetically Sealed With High Temperature Compounds  
Flexible Insulated Wire Leads Clamp Mounting  
Clamp may be moved to any position on tube for rapid mounting.

## Type IHC

(continued)

Part No.	Capacity Mfd.	Working Voltage D. C.	Diameter	SIZE		List Price
				Length		
<b>TYPE IHC VOLTAGE — SINGLE UNITS</b>						
IHC 1245	12	450	7/8"		2 3/4"	\$1.15
IHC 1645	16	450	1 1/8"		2 3/4"	1.35
IHC 2045	20	450	1"		2 3/4"	1.50
IHC 3045	30	450	1 1/8"		2 3/4"	1.65
IHC 4045	40	450	1 1/8"		2 3/4"	2.00
IHC 5045	50	450	1 1/8"		3 1/4"	2.35
IHC 6045	60	450	1 1/8"		3 1/4"	2.60
IHC 8045	80	450	1 3/8"		3 1/4"	2.95
<b>HIGH SURGE — SINGLE UNITS</b>						
IHC 12500	12	500	1 5/8"		2 3/4"	1.95
IHC 16500	16	500	1 5/8"		2 3/4"	2.00
IHC 20500	20	500	1"		2 3/4"	2.25
IHC 30500	30	500	1"		3 1/4"	2.40
IHC 40500	40	500	1 1/8"		3 1/4"	2.65
<b>HIGH VOLTAGE — MULTIPLE UNITS</b>						
IHC 8845	8-8	450 CN*	1 1/8"		2 3/4"	1.70
IHC-D 8845	8-8	450 DN†	1 1/8"		2 3/4"	2.10
IHC 101045	10-10	450 CN	1 1/8"		2 3/4"	1.85
IHC-D 101045	10-10	450 DN	1 1/8"		2 3/4"	2.20
IHC 16845	16-8	450 CN	1 1/8"		3"	2.00
IHC 161645	16-16	450 CN	1 1/8"		3"	3.00
IHC-D 161645	16-16	450 DN	1 1/8"		3 1/4"	3.40
IHC 22450	20-20	450 CN	1 1/8"		3 1/4"	3.70
IHC 33450	30-30	450 CN	1 1/4"		3 1/4"	3.95
IHC 44450	40-40	450 CN	1 3/8"		3 1/4"	4.10
IHC 801045	80-10	450	1 3/8"		3 1/4"	4.25
IHC 88845	8-8-8	450	1 1/8"		3"	2.75
IHC 11145	10-10-10	450	1 1/8"		3"	3.00
IHC 66645	16-16-16	450	1 1/4"		3 1/4"	3.40
IHC 22245	20-20-20	450	1 1/4"		3 1/4"	3.95
IHC 222245	20-20-20-20	450	1 3/8"		3 3/8"	4.50

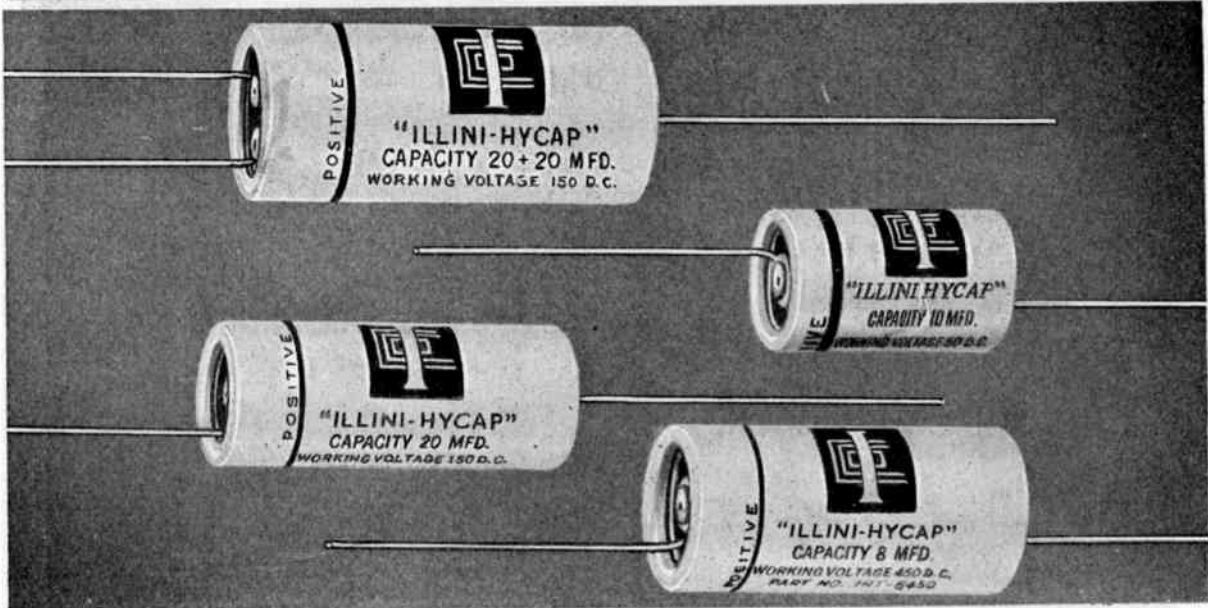
\*CN Common Negatives  
†DN Dual Negatives





# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



"ILLINI-HYCAPS" are now manufactured in a new and modern plant designed especially for the manufacture of capacitors. Our thorough engineering, plus old manufacturing skills and a rigid policy of quality control enables us to produce a product that is of unexcelled quality.

"ILLINI-HYCAPS" are again available, and you will agree after using them that they meet every requirement a superior condenser should have for long life and dependable service.

"ILLINI-HYCAPS" are guaranteed unconditionally for a period of one year, from date of purchase.

1. Short proof — ample separation of foils by highest purity cellulose separator plus tough anodic film — will withstand the highest surge voltages.
2. Condenser hermetically sealed and anchored in an aluminum shell. Completely resistant to changes due to temperature and humidity. Built to withstand all kinds of vibrations and shocks.
3. Attractive kraft tube spun over condenser ends . . . prevents shorting of pig tail leads to condenser or other components. Aluminum lock-washers hold leads securely in place, will not loosen or break off.
4. Low power factor, low leakage, excellent shelf life.
5. Extremely longer life — due to our use of C. P. chemicals and highest purity foils and insulation materials available. A balanced non-corrosive electrolyte contributes to quiet, stable operation.

## Type IHT

### "ILLINI-HYCAP" — TUBULAR ELECTROLYTIC CONDENSERS

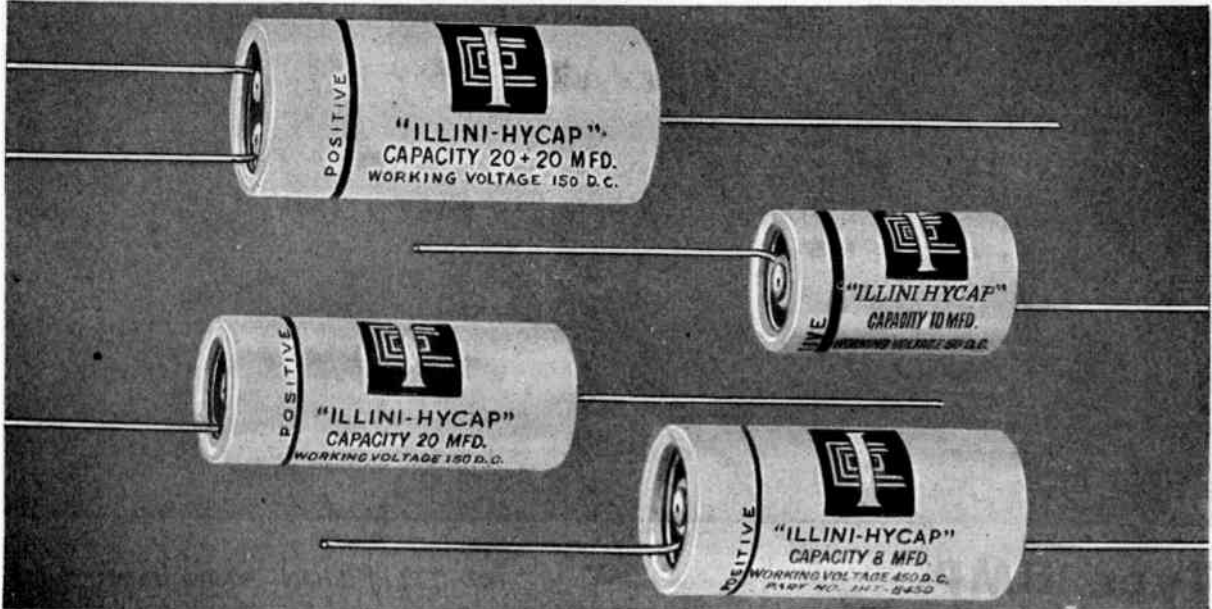
#### HI-CAPACITY — LOW VOLTAGE UNITS

Part No.	Capacity Mfd.	Working Voltage D. C.	SIZE		Length	List Price
			Diameter	SIZE		
IHT 2505	250	5	13/16"	2 1/4"		\$1.50
IHT 25005	500	5	13/16"	2 1/4"		1.70
IHT 10010	100	10	11/16"	1 3/4"		1.45
IHT 20010	200	10	13/16"	1 3/4"		1.65
IHT 40010	400	10	13/16"	2 1/4"		1.90
IHT 10006	1000	6	1-1/16"	2 1/4"		2.25
IHT 20006	2000	6	1-1/16"	2 1/4"		3.90
IHT 10012	1000	12	1-1/16"	2 1/4"		2.75
IHT 125	1	25	11/16"	1 3/4"		.75
IHT 425	4	25	11/16"	1 1/2"		.80
IHT 109	10	90	11/16"	1 3/4"		.85
IHT 5025	50	25	11/16"	1 3/4"		1.00
IHT 550	5	50	11/16"	1 1/8"		.75
IHT 1025	10	25	11/16"	1 1/4"		.75
IHT 1050	10	50	11/16"	1 1/4"		.80
IHT 2525	25	25	11/16"	1 1/4"		.85
IHT 2590	25	90	11/16"	1 1/4"		.95
IHT 5050	50	50	13/16"	1 3/4"		1.05
IHT-10025	100	25	13/16"	1 3/4"		1.20
IHT 415	4	150	11/16"	1 3/4"		.75
IHT 8150	8	150	11/16"	1 1/4"		.80
IHT 10150	10	150	11/16"	1 1/4"		.80
IHT 12150	12	150	11/16"	1 3/4"		.85
IHT 16150	16	150	11/16"	1 3/4"		.90
IHT 2015	20	150	11/16"	1 3/4"		.95
IHT 2415	24	150	11/16"	1 3/4"		.95
IHT 3015	30	150	13/16"	1 3/4"		1.00
IHT 4015	40	150	13/16"	1 3/4"		1.10
IHT 5015	50	150	13/16"	1 3/4"		1.20
IHT 7515	75	150	15/16"	2"		1.40
IHT 10015	100	150	15/16"	2 1/4"		1.70



# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



"ILLINI-HYCAP" Electrolytic Capacitors

## Type IHT

(continued)

### INTERMEDIATE VOLTAGE UNITS

Part No.	Capacity Mfd.	Working Voltage D. C.	Diameter	SIZE	Length	List Price
IHT 40175	40	175	13/16"		1 3/4"	\$1.25
IHT 50175	50	175	13/16"		1 3/4"	1.55
IHT 60175	60	175	13/16"		2 1/8"	1.75
IHT 30200	30	200	13/16"		2 1/8"	1.25
IHT 8250	8	250	11/16"		1 3/4"	.80
IHT 16250	16	250	13/16"		1 3/4"	1.10
IHT 20250	20	250	13/16"		1 3/4"	1.20
IHT 30250	30	250	15/16"		2 1/8"	1.25
IHT 40250	40	250	13/16"		2 1/8"	1.45
IHT 80250	80	250	1-1/8"		2 1/8"	2.00
IHT 8300	8	300	11/16"		1 3/4"	.85
IHT 2035	20	350	1-1/16"		2 1/8"	1.30
IHT 3035	30	350	1-1/16"		2 1/8"	1.45
IHT 4035	40	350	1-1/16"		2 1/8"	1.75

### HIGH VOLTAGE

IHT 4450	4	450	11/16"		1 3/4"	.90
IHT 6450	6	450	13/16"		1 3/4"	.90
IHT 8450	8	450	13/16"		1 3/4"	.95
IHT 10450	10	450	13/16"		1 3/4"	1.05
IHT 1245	12	450	3/4"		2 1/8"	1.15
IHT 1645	16	450	3/4"		2 1/8"	1.35
IHT 2045	20	450	1-1/16"		2 1/8"	1.50
IHT 3045	30	450	1-1/16"		2 1/8"	1.65
IHT 4045	40	450	1-1/16"		2 3/8"	2.00
IHT 5045	50	450	1-1/16"		2 3/8"	2.35

### TYPE IHT — SPECIAL HIGH VOLTAGE

IHT 8500	8	500	15/16"		1 7/8"	1.30
IHT 16500	16	500	1-1/16"		1 7/8"	2.00
IHT 20500	20	500	1-1/16"		2 1/8"	2.25
IHT 30500	30	500	1-1/16"		2 3/8"	2.50
IHT 40500	40	500	1-1/16"		2 3/8"	2.80

### TYPE IHT — DUAL UNITS — ALUMINUM CAN — LOW VOLTAGE

IHT 2215M	20-20	150	15/16"		1 7/8"	1.30
IHT 3315M	30-30	150	15/16"		2 1/4"	1.50
IHT 4415M	40-40	150	15/16"		2 1/4"	1.70
IHT 5315M	50-30	150	15/16"		2 1/4"	1.75

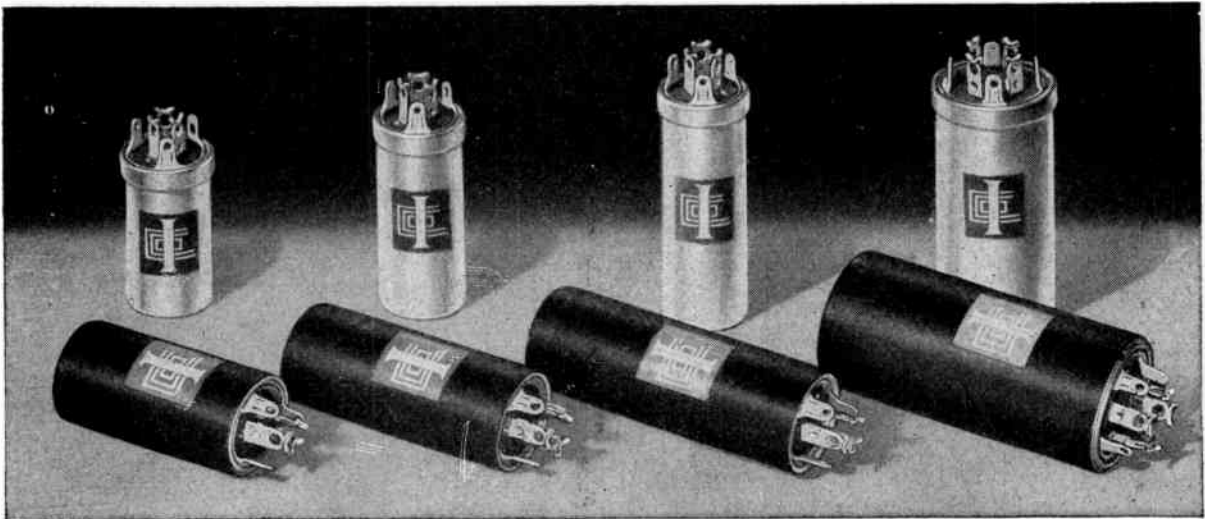
### TYPE IHT — DUAL UNITS — ALUMINUM CAN

IHT 8845M	8-8	450	1-1/16"		2 1/4"	1.75
IHT 121245M	12-12	450	1-1/16"		2 1/4"	1.90
IHT 16845M	16-8	450	1-1/16"		2 1/4"	2.10
IHT 161645M	16-16	450	1-1/16"		2 3/8"	2.25
IHT 2245M	20-20	450	1-1/16"		2 3/8"	2.40



# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



## Type UMP

FOR TELEVISION, RADIO, ELECTRONICS

Illinois standard, twist prong mounting condensers offer a wider range of voltage and capacity types than have heretofore been possible in units of comparable size. They are designed to give maximum efficiency, both in operating characteristics and ease of mounting and wiring.

The electrical characteristics of our type UMP are superb. Capacities are always plus. This, coupled with low power factor and low leakage, makes them ideal for use in all electronic circuits.

Units are hermetically sealed in seamless drawn aluminum cans. Mounting and soldering lugs are sturdy and heavily tinned. Cathode tabs are electrically welded to mounting ring. Each unit is vibration proof—and they will stand up in any climate.

Arranged in a variety of can sizes and capacity combinations, the attached listing represents the majority of condenser types in use today.

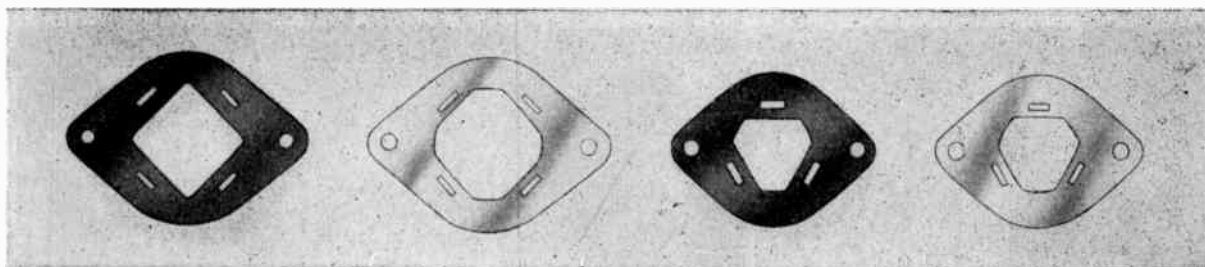
### SINGLE UNITS

Part No.	Capacity Mfd.	Working Voltage D. C.	Diameter	SIZE	Length	List Price
UMP-13	3000	10	1 3/8"		3"	\$4.50
UMP-15	1000	15	1"		3"	3.25
UMP-12	2000	15	1 3/8"		3"	4.70
UMP-21	100	25	1"		2"	1.45
UMP-25	500	25	1"		3"	2.45
UMP-205	1000	25	1 3/8"		3"	3.55
UMP-505	500	50	1 3/8"		3"	3.55
UMP-150	50	150	1"		2"	1.45
UMP-165	100	150	1"		3"	1.85
UMP-254	40	250	1"		2 1/2"	1.70
UMP-256	80	250	1"		3"	2.20
UMP-355	50	350	1"		3"	2.05
UMP-351	125	350	1 3/8"		3"	3.55
UMP-400	10	450	1"		3"	1.30
UMP-415	15	450	1"		2"	1.55
UMP-420	20	450	1"		2"	1.75
UMP-430	30	450	1"		2 1/2"	1.90
UMP-440	40	450	1"		3"	2.25
UMP-480	80	450	1 3/8"		3"	3.85
UMP-610	10	525	1"		2 1/2"	1.75
UMP-620	20	525	1"		3"	2.65
UMP-630	30	525	1 3/8"		2 1/2"	2.95
UMP-640	40	525	1 3/8"		3"	3.20



# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



1-3/8" Diameter  
BAKELITE Mounting  
Plate Part No. MPB-1

1-3/8" Diameter  
STEEL Mounting Plate  
Part No. MPS-2

1" Diameter  
BAKELITE Mounting  
Plate Part No. MPB-3

1" Diameter  
STEEL Mounting  
Plate Part No. MPS-4

## Type UMP (continued)

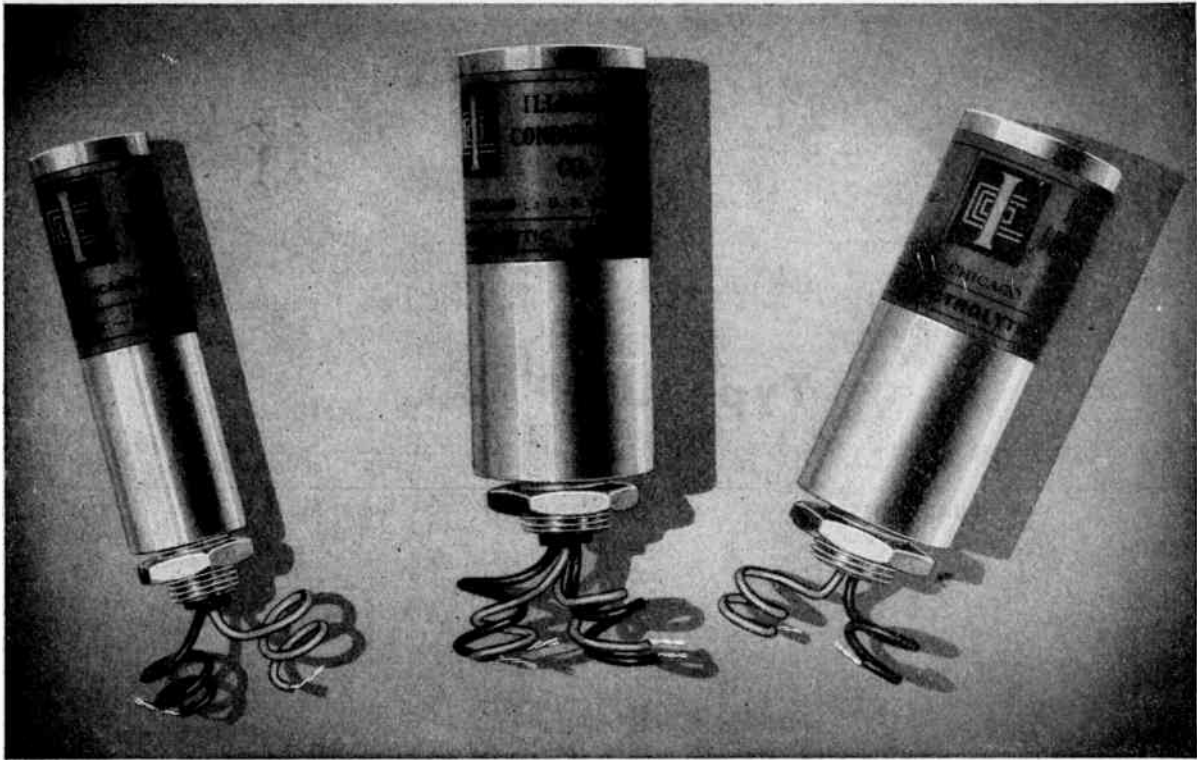
Part Number	Capacity MFD	Working Voltage DC	SIZE Dia.	Length	List Price	Part Number	Capacity MFD	Working Voltage DC	SIZE Dia.	Length	List Price
<b>DUAL UNITS</b>						UMP-1441	40-40 100	150 10	1"	3"	\$2.60
UMP-101	1000-1000	15	1 3/8"	3"	\$4.95	UMP-1552	50-50 20	150 25	1"	3"	2.65
UMP-551	500-50	5-150	1"	3"	2.30	UMP-3311	30-10-10	350	1"	3"	2.50
UMP-555	50-50	50	1"	2"	2.10	UMP-3111	10-10-10	350	1"	2"	2.25
UMP-144	40-40	150	1"	2 1/2"	1.95	UMP-3151	15-10 20	350 25	1"	2"	2.55
UMP-153	50-30	150	1"	2 1/2"	1.95	UMP-3312	30-10 20	350 25	1"	2 1/2"	2.75
UMP-155	50-50	150	1"	2 1/2"	2.10	UMP-4112	10-10 20	450 25	1"	2"	2.35
UMP-184	80-40	150	1"	3"	2.25	UMP-4222	20-20 20	450 25	1"	3"	2.95
UMP-111	100-100	150	1 3/8"	3"	3.40	UMP-4442	40-40 20	450 25	1 3/8"	3"	4.25
UMP-125	125-150	150	1 3/8"	3 1/4"	3.75	UMP-4111	10-10-10	450	1"	2 1/2"	2.50
UMP-222	200-200	150	1 3/8"	3 1/4"	4.25	UMP-4220	20-20-20	450	1 3/8"	2 1/2"	3.45
UMP-322	20-20	250	1"	2"	1.75	UMP-4313	30-15 30	450 150	1 3/8"	3"	3.75
UMP-340	40-40	250	1"	3"	2.30	UMP-4418	40-10 80	450 150	1 3/8"	3"	4.50
UMP-344	40-40	350	1 3/8"	3"	3.50	UMP-4410	40-40-10	450	1 3/8"		4.50
UMP-384	80-50	450-50	1 3/8"	3"	4.00	UMP-4440	40-40-40	450	1 3/8"	3 1/4"	4.95
UMP-428	20-80	450-350	1 3/8"	3"	3.75	UMP-4412	40-40 100	450 200	1 3/8"	3 1/4"	4.95
UMP-411	10-10	450	1"	2"	2.10	<b>QUADRUPLE UNITS</b>					
UMP-422	20-20	450	1"	3"	2.65	UMP-14432	40-40-30 20	150 25	1 3/8"	2"	3.10
UMP-444	40-40	450	1 3/8"	3"	4.00	UMP-18431	80-40-30 100	150 25			3.75
UMP-481	80-10	450	1 3/8"	3"	4.20	UMP-44312	40-30-10 20	450 25	1 3/8"	3"	4.15
<b>TRIPLE UNITS</b>						UMP-41111	10-10-10-10	450	1 3/8"	2"	3.25
UMP-2225	20-20-20	25	1"	2"	2.00	UMP-42222	20-20-20-20	450	1 3/8"	3"	4.50
UMP-1222	20-20-20	150	1"	2"	2.30						
UMP-1444	40-40-40	150	1"	3"	2.60						
UMP-1422	40-20-20	150	1"	3"	2.40						
UMP-1842	80-40-20	150	1"	3"	2.80						
UMP-1332	30-30 20	150 25	1"	2"	2.25						
UMP-1425	40-20 25	150 25	1"	2"	2.35						
UMP-1531	50-30 100	150 25	1"	2 1/2"	3.10						
UMP-1825	80-20 20	150 25	1"	3"	2.65						

NOTE: Outer Insulating sleeves are available upon special order for all of the above can sizes. A metal and bakelite mounting washer is supplied with each unit. Individually packaged in a sturdy, attractive varnished box.



# ILLINOIS CONDENSERS

"TIME TESTED QUALITY"



TYPE LN

Inverted Screw Mounting

## ALUMINUM CAN CONDENSERS

Type LN aluminum can condensers are manufactured to operate satisfactorily under the severest conditions. Units are completely sealed in an inner impregnated tube then resealed. Correct design has allowed for maximum heat dissipation with resultant ability of the condensers to operate at higher temper-

atures and higher voltage surges.

Separate negative and positive leads for each section for universal replacement work. Palnut furnished with each condenser, individually packaged in attractive, varnished outer box. These units are ideal for long life and continuous service.

### TYPE LN — SINGLE UNITS

Part No.	Cap. Mfd.	Working Volt. D.C.	SIZE		List Price
			Dia.	Length	
LN 80	8	450	1 3/8"	3 3/4"	\$1.75
LN 120	120	450	1 3/8"	3 3/4"	2.15
LN 16	16	450	1 3/8"	3 3/4"	2.40
LN 20	20	450	1 3/8"	3 3/4"	2.65
LN 25	25	450	1 3/8"	3 3/4"	2.85
LN 30	30	450	1 3/8"	3 3/4"	3.00
LN 40	40	450	1 1/2"	3 1/2"	3.40
LN 50	50	450	1 1/2"	3 1/2"	3.75
LN 60	60	450	1 1/2"	3 1/2"	3.95
LN 8045	80	450	1 1/2"	3 1/2"	4.35

### TRIPLE SECTION UNITS

Part No.	Cap. Mfd.	Working Volt. D.C.	SIZE		List Price
			Dia.	Length	
LN 388	8-8-8	450	1 1/2"	3 1/2"	\$4.25
LN 311	10-10-10	450	1 1/2"	3 1/2"	4.50
LN 316	16-16-16		1 1/2"	3 1/2"	4.95
LN 320	20-20-20		1 1/2"	3 1/2"	5.30

### QUAD SECTION

LN 48	8-8-8-8	450	1 1/2"	3 1/2"	4.85
LN 410	10-10-10-10	450	1 1/2"	3 1/2"	5.20

### DUAL SECTION UNITS

LN 88	8-8	450	1 3/8"	3 3/4"	2.75
*LN-D 88	8-8	450	1 3/8"	3 3/4"	2.95
LN 1010	10-10	450	1 3/8"	3 3/4"	3.00
LN 168	16-8	450	1 3/8"	3 3/4"	3.25
LN 1212	12-12	450	1 3/8"	3 3/4"	3.25
*LN-D 1212	12-12	450	1 1/2"	3 1/2"	3.65
LN 216	16-16	450	1 3/8"	3 3/4"	3.50
*LN-D 216	16-16	450	1 1/2"	3 1/2"	4.20
LN 22	20-20	450	1 1/2"	3 1/2"	4.00
LN 33	30-30	450	1 1/2"	3 1/2"	4.50
LN 44	40-40	450	1 1/2"	3 1/2"	4.95

\*D Dual Negatives

### SINGLE & DUAL UNITS — 500 VDC

LN 850	8	500	1 3/8"	3 3/4"	2.25
LN 1650	16	500	1 3/8"	3 3/4"	3.15
LN 8850	8-8	500	1 1/2"	3 3/4"	3.25
LN 16850	16-8	500	1 1/2"	3 3/4"	3.65

### SINGLE UNITS — 600 VDC

LN 600	4	600	1 3/8"	3 3/4"	3.00
LN 8600	8	600	1 3/8"	3 3/4"	4.00
LN 12600	12	600	1 3/8"	3 3/4"	4.65
LN 16600	16	600	1 1/2"	3 1/2"	5.00
LN 20600	20	600	1 1/2"	3 1/2"	5.75

# CLAROSTAT

## SERIES "M" COMPOSITION-ELEMENT CONTROLS

★ Compactness—yet without sacrificing operating efficiency and long service life. Only 1 1/8" dia. by 1/8" deep (with switch, 3/8" deep).

Utilizes the exclusive Clarostat stabilized element, insuring the control's constancy in all weather and in all climates. Many years of painstaking research and experience are incorporated into the design of Clarostat Series "M" controls, assuring the user of the best results at all times.

The original Clarostat "Ad-A-Switch" feature makes it possible to adapt any of the Series "A" switches quickly to any M, AM, T and AT controls. Furthermore, for high-voltage television, oscillograph or other electronic circuits, the new Clarostat Series 60 High-Voltage Coupling Unit can be attached to all Clarostat controls (illustrated below) to assure safety at elevated voltages. The cost of this added feature is quite moderate. High-voltage couplers are installed at factory only.



Dia.: 1 1/8". Shaft: 2 1/8" Soft metal. 3/32 brass bushing.

Cat. No.	Ohms	Curve	Suggested Use	Cat. No.	Ohms	Curve	Suggested Use
M-5-S	500	S	Std. Pot.	M-45-W	50,000	W	Sc. Grid & Phono. Auto Grid & Tone
M-8-S	1000	S	Std. Pot.	M-46-Z	50,000	Z	Std. Pot.
M-11-S	2000	S	Std. Pot.	M-47-S	75,000	S	Std. Pot.
M-15-S	3000	S	Std. Pot.	M-48-V	75,000	V	C Bias Rheo.
M-20-U	5000	S	Std. Pot.	M-49-S	100,000	S	Std. Pot.
M-23-S	7500	S	Std. Pot.	M-51-Z	100,000	Z	Audio & Tone
M-27-S	10,000	S	Std. Pot.	M-52-S	200,000	S	Std. Pot.
M-29-U	10,000	U	Ant. & C --- Bias	M-55-S	250,000	S	Std. Pot.
M-30-V	10,000	V	Ant. & C --- Bias	M-64-Z	250,000	Z	Audio & Tone
M-31-W	10,000	W	C Bias Rheo.	M-57-S	300,000	S	Std. Pot.
M-33-U	15,000	U	Sc. Grid & Phono.	M-58-S	500,000	S	Std. Pot.
M-34-V	15,000	V	Ant. Shunt	M-59-Y	500,000	Y	Audio Shunt
M-35-W	15,000	W	Std. Pot.	M-60-Z	500,000	Z	Audio & Tone
M-36-S	20,000	S	Std. Pot.	M-79-Z	750,000	Z	Audio & Tone
M-37-U	20,000	U	Ant. & C --- Bias	M-61-S	1,000,000	S	Std. Pot.
M-40-S	25,000	S	C Bias Rheo.	M-63-Z	1,000,000	Z	Audio & Tone
M-41-W	25,000	W	Sc. Grid & Phono.	M-66-Z	2,000,000	Z	Tone & AVC
M-42-S	25,000	S	Std. Pot.	M-83-S	2,000,000	S	Audio & Tone
M-43-S	40,000	S	Std. Pot.	M-84-S	2,500,000	S	Std. Pot.
M-44-S	50,000	S	Std. Pot.	M-67-Z	3,000,000	Z	Tone & AVC
				M-68-Z	4,000,000	Z	Tone & AVC
				M-85-S	5,000,000	S	Std. Pot.
				M-69-Z	5,000,000	Z	Tone & AVC
				M-86-S	10,000,000	S	Std. Pot.
				M-99-Z	10,000,000	Z	Tone & AVC

LIST PRICE \$1.25

Standard Packing — 10 (ten) per carton

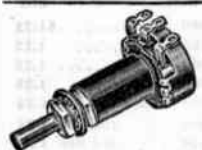
## SERIES "T" TAPPED CONTROLS With the Original Ad-A-Switch Feature

★ There are many circuits in which the use of a tapped control affords special functional operation not possible or attainable with any other type of control. These standard units listed herewith permit replacement of tapped units with the assurance that the total overall resistance value as well as the taps satisfactorily substitute for the original.

Cat. No.	Ohms	Tap No. 1	Tap No. 2	Tap No. 3	Cat. No.	Ohms	Tap No. 1	Tap No. 2	Tap No. 3
T-25	50,000		25,000		T-103	1,000,000		100,000	
T-38	200,000			100,000	T-109	1,000,000		225,000	
T-39	250,000		25,000		T-110	1,000,000		170,000	
T-42	250,000		125,000		T-111	1,000,000			300,000
T-43	250,000			50,000	T-112	1,000,000		500,000	
T-44	250,000	60,000		125,000	T-95	1,500,000	250,000 @ 25% Rotation		500,000
T-45	250,000	30,000	60,000		T-125	1,500,000			350,000
T-60	350,000		25,000		T-114	2,000,000			100,000
T-69	350,000	75,000			T-115	2,000,000			500,000
T-70	350,000		75,000		T-116	2,000,000		1,000,000	
T-78	500,000		100,000		T-118	2,000,000	20,000		
T-80	500,000			100,000	T-119	2,000,000		200,000	
T-81	500,000	25,000			T-120	2,000,000		400,000	
T-82	500,000			200,000	T-121	2,000,000	250,000		500,000
T-88	500,000		50,000		T-124	2,000,000	5,000 @ 25% Rotation		
T-90	500,000		250,000		T-126	2,000,000	200,000		400,000
T-92	500,000	100,000		300,000	T-129	2,000,000	15,000		
T-98	1,000,000	250,000			T-123	3,500,000	250,000		500,000
T-101	1,000,000		50,000		T-128	4,000,000		500,000	
T-102	1,000,000	100,000		500,000					

LIST PRICE \$1.85 (Without Switch)

For Power Switch, see Series SW listed below.  
Standard Packing — 10 (ten) per carton



High-Voltage Coupler

Cat. No. M-49-S HVC 100 K ohms \$ M-55-S HVC 250 K ohms \$ M-56-S HVC 500 K ohms \$ M-61-S HVC 1 megohm \$ M-83-S HVC 2 megohms \$ List Price \$3.10 each



Attachable High-Voltage Coupler

May be used with Clarostat Pick-A-Shaft Controls Types AT and AM.

Cat. No. 59-186 Coupler and Spacer Assembly \$1.00 RN-3" Nylon Insulator Shaft .85

### Original "AD-A-SWITCH" Feature For Series "M", "AM", "T", "AT" Controls

Cat. No.	Wiring	List Price
SW-A	Single-Pole Single-Throw	\$.60
SW-A1	Three-Way, No "Off" position S.P.D.T.	.75
SW-A2	Double-Pole, Single-Throw	.75
SW-A4	Four-Wire (to control A, B and C voltages)	.75
SW-A5	S.P.S.T. (reverse action)	.75
SW-A6	S.P.S.T. with dummy lug	.75



Ad-A-Switch is used in place of usual dust-protection cover, and lugs bent over to hold it in place.

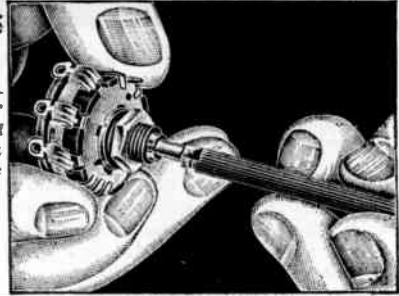
# CLAROSTAT

## SERIES "AM" AND "AT" UNIVERSAL PICK-A-SHAFT CONTROLS Standard and Tapped for Every Service Need

★ These universal controls are built to the same exacting specifications as Series "M" and "T". However, instead of having the usual integral shaft, these controls include the Clarostat "Pick-A-Shaft" feature whereby a choice of shafts may be used with any of these controls. This ingenious feature elimi-

nates the stocking of special-shaft units. Instead, the Series "AM" or Series "AT" (tapped unit) takes the particular type of shaft desired by merely inserting such a shaft so that the spring washer snaps into the groove provided in the shaft.

One selected shaft furnished FREE with each Pick-A-Shaft control.



### SERIES "AM" OR STANDARD PICK-A-SHAFT CONTROLS

Cat. No.	Ohms	Curve	Suggested Use
AM-5-S	500	S	Std. Pot.
AM-8-S	1,000	S	Std. Pot.
AM-11-S	2,000	S	Std. Pot.
AM-15-S	3,000	S	Std. Pot.
AM-20-S	4,000	S	Std. Pot.
AM-25-S	5,000	S	Std. Pot.
AM-30-U	5,000	U	Ant. & C — Bias
AM-35-S	7,500	S	Std. Pot.
AM-40-U	10,000	U	Std. Pot.
AM-45-U	10,000	U	Ant. & C — Bias
AM-50-V	10,000	V	C Bias Rheo.
AM-55-W	10,000	W	Sc. Grid & Phono.
AM-60-Z	10,000	Z	Ant. Shunt
AM-65-S	15,000	S	Std. Pot.
AM-70-U	15,000	U	Ant. & C — Bias
AM-75-V	15,000	V	C Bias Rheo.
AM-80-W	15,000	W	Sc. Grid & Phono.
AM-85-S	20,000	S	Std. Pot.
AM-90-U	20,000	U	Ant. & C — Bias
AM-95-S	25,000	S	Std. Pot.
AM-100-W	25,000	W	Sc. Grid & Phono.
AM-105-V	25,000	V	C Bias Rheo.
AM-110-S	30,000	S	Std. Pot.
AM-115-S	30,000	S	Std. Pot.
AM-120-S	40,000	S	Std. Pot.
AM-125-S	50,000	S	Std. Pot.
AM-130-W	50,000	W	Sc. Grid & Phono.
AM-135-Z	50,000	Z	Audio & Tone
AM-140-S	75,000	S	Std. Pot.
AM-145-V	75,000	V	C Bias Rheo.
AM-150-S	100,000	S	Std. Pot.
AM-155-Z	100,000	Z	Audio & Tone
AM-160-S	200,000	S	Std. Pot.
AM-165-S	250,000	S	Std. Pot.
AM-170-Z	300,000	Z	Audio & Tone
AM-175-S	300,000	S	Std. Pot.
AM-180-S	500,000	S	Std. Pot.
AM-185-Y	500,000	Y	Audio Shunt
AM-190-Z	500,000	Z	Audio & Tone
AM-195-Z	750,000	Z	Audio & Tone
AM-200-S	1,000,000	S	Std. Pot.
AM-205-Z	1,000,000	Z	Audio & Tone
AM-210-S	2,000,000	S	Std. Pot.
AM-215-S	2,500,000	S	Std. Pot.
AM-220-Z	2,000,000	Z	Tone & AVC
AM-225-Z	3,000,000	Z	Tone & AVC
AM-230-Z	4,000,000	Z	Tone & AVC
AM-235-S	5,000,000	S	Std. Pot.
AM-240-Z	5,000,000	Z	Tone & AVC
AM-245-S	10,000,000	S	Std. Pot.
AM-250-Z	10,000,000	Z	Tone & AVC

LIST PRICE \$1.25 (Without Switch)

### SERIES "AT" OR TAPPED PICK-A-SHAFT CONTROLS

Cat. No.	Ohms	Tap No. 1	Tap No. 2	Tap No. 3
AT-25	50,000		25,000	
AT-38	200,000			100,000
AT-39	250,000		25,000	
AT-42	250,000		125,000	
AT-43	250,000			50,000
AT-44	250,000	60,000		125,000
AT-45	250,000	30,000	60,000	
AT-60	350,000		25,000	
AT-69	350,000	75,000		
AT-70	350,000		75,000	
AT-78	500,000		100,000	
AT-80	500,000			100,000
AT-81	500,000	25,000		
AT-82	500,000			200,000
AT-83	500,000		50,000	
AT-90	500,000		250,000	
AT-92	500,000	100,000		300,000
AT-98	1,000,000	250,000		
AT-101	1,000,000		50,000	
AT-102	1,000,000	100,000		500,000
AT-108	1,000,000		100,000	
AT-109	1,000,000		225,000	
AT-110	1,000,000		170,000	
AT-111	1,000,000			200,000
AT-112	1,000,000		500,000	
AT-95	1,500,000	250,000 @ 25% Rotation		500,000
AT-125	1,500,000		350,000	
AT-114	2,000,000		100,000	
AT-115	2,000,000		500,000	
AT-116	2,000,000		1,000,000	
AT-118	2,000,000	20,000		
AT-119	2,000,000		200,000	
AT-120	2,000,000		400,000	
AT-121	2,000,000	250,000		500,000
AT-124	2,000,000	5,000 @ 25% Rotation		
AT-126	2,000,000	200,000		400,000
AT-129	2,000,000	15,000		
AT-123	2,500,000	250,000		500,000
AT-128	4,000,000		500,000	

LIST PRICE \$1.85 (Without Switch)

Standard Packing—10 (ten) per carton.

For Power Switch, see Series "SW" listings on Page R-1.

### Choice of Pick-A-Shafts

★ A choice of Pick-A-Shafts (shown at right) covers all requirements, as follows:

Cat No.	Description
(1) SS-3/8"	(Male) to take female fitting
(2) RS-2	Round shaft, 2" long
(3) RS-3"	Round shaft, 3" long
(4) KSS-3	Knurled, split shaft 3" lg.
(5) RS-5	Round shaft, 5" long
(6) FS-5	Flatted shaft, 5" long
(7) KSS-5	Knurled, split shaft, 5" lg.
(8) FS-3	Flatted shaft, 3" long
(9) RS-3	Round Shaft, 3" long
(10) DFS-1/2	Double flatted Philco Type 1/2" long
(11) FKS-1/4	Fine knurled slotted shaft 1/4" long

List price of each shaft.....\$0.30

One selected shaft furnished FREE with each Pick-A-Shaft control.



### PICK-A-SHAFT SLIP DRIVE CONTROL (Clutch Type)

Available with your choice of Pick-A-Shaft

Cat. No.	Resistance	List
SD-64-Z	250,000	\$1.25
SD-60-Z	500,000	1.25
SD-63-Z	1,000,000	1.25
SD-66-Z	2,000,000	1.25
SD-42	350,000 Tapped	1.85
SD-78	500,000	1.85
SD-88	1,000,000	1.85
SD-115	3,000,000	1.85

# CLAROSTAT

## MIDGET (15/16" dia.) CONTROLS



★ Yes, sir — Clarostat has it first — the smaller, handler  $\frac{1}{8}$ " control for tight spots. And it's a beauty. Note the trim lines. Nothing sacrificed by way of electrical and mechanical sturdiness and dependability. This is an entirely NEW control, developed from scratch, to meet the need of a more compact control of standard performance. Dimensions:  $\frac{1}{8}$ " diameter x  $\frac{29}{64}$ " deep. With switch,  $\frac{49}{64}$ " deep.  $\frac{1}{4}$ " long,  $\frac{3}{8}$ "-32 threaded bushing. Knurled shaft 1" long beyond bushing. Switch units attached at factory.

Cat. No.	Resistance	Taper	Cat. No. with Switch	LIST PRICE	
				(no switch)	(with switch)
15/16-64-Z	250,000 ohms	Audio	15/16-S-64-Z	\$1.25	\$1.85
15/16-60-Z	500,000 ohms	Audio	15/16-S-60-Z	1.25	1.85
15/16-63-Z	1,000,000 ohms	Audio	15/16-S-63-Z	1.25	1.85
15/16-66-Z	2,000,000 ohms	Audio	15/16-S-66-Z	1.25	1.85

Standard packing 10 (ten) per carton.

## DUAL SERIES DC CONTROLS

★ The Series DC controls are dual units — two controls of the same resistance values and tapers, connected in tandem for joint operation.

Cat. No.	Panel Unit	Rear Unit
DC-34-S	10,000-S	25,000-S
DC-23-S	10,000-S	50,000-S
DC- 5-S	50,000-S	50,000-S
DC- 6-Z	100,000-Z	100,000-Z
DC-29-S	250,000-S	250,000-S
DC- 8-Z	250,000-Z	250,000-Z
DC-10-Z	500,000-Z	500,000-Z
DC-11-Z	1,000,000-Z	1,000,000-Z
DC-35-S	1,000,000-S	1,000,000-S
DC-36-S	2,000,000-S	2,000,000-S
DC-37-S	5,000,000-S	5,000,000-S

LIST PRICE \$3.10

Standard packing—Individual carton

## ROTARY SWITCHES

★ Compact, positive contact, bakelite molded and Underwriters' approved. Rated 1 Amp. 250 volt; 3 Amp. 125 volt. The physical dimensions of the switch are as follows:



Diameter  $1\frac{3}{8}$ ", body depth  $\frac{9}{16}$ ", lug protrusion  $\frac{1}{4}$ ", locking projection on a  $\frac{1}{2}$ " radius, rotation for actuation 30 degrees.

All standard stock numbers have  $\frac{3}{8}$ " bushing,  $1\frac{1}{2}$ " length shaft, and one locking projection.

Cat. No.	Switch Description	List Price
8590	Single Pole Single Throw.....	\$0.60
8591	Single Pole Bussing Lug.....	.75
8592	Double Pole Single Throw.....	.75
8593	Single Pole Double Throw.....	.75
8594	Single Pole Reversed Action.....	.75
8595	Four Wire Single Throw.....	.75

Standard packing 10 (ten) per carton.

## POWER RESISTOR DECADE BOX

★ A "Must" for Every Laboratory. Power resistance measurements under actual load conditions. Just imagine being able to obtain ANY VALUE OF RESISTANCE from 1 ohm to 999,999 ohms IN STEPS OF ONE OHM, and at a POWER RATING OF 225 WATTS using a maximum of 1000 volts DC (660 volts AC)!

Intended primarily for laboratory use and development engineering. Simplifies and expedites the selection of correct resistance values for given circuits and functions. These instruments are in daily use in labora-



NET PRICE \$90.00\*

Dimensions: 13 in. long; 8½ in. deep; 5¾ in. high. Weight, 11 lbs.

Suggested Uses: Resistance determination. Load Resistance. Meter Multiplier. Calibrating Meters. Providing any desired ohmage as a universal power resistor.

tories, engineering offices, plants, maintenance and service departments, and in schools.

Finish: Heavy-gauge metal case finished in frosted gray wrinkle, with etched black-and-aluminum front panel.



# CLAROSTAT

## SERIES 43 MIDGET WIRE-WOUND CONTROLS

★ A space-saving control of the wire-wound type. Similar in mechanical details and dimensions to the composition-element Series M control (page R-1). Precision-wound alloy wire on bakelite strip. Rotor sweeps over inside face of winding. Special lubricant for minimized frictional drag and wear. Molded bakelite casing—high resistance to leakage. Protective metal cover (as shown in illustration). Only 1½" dia. Body Depth, ⅜"; ⅝" deep with switch. ⅝" bushing. Shaft 1½" long. All switches permanently attached at factory.



Resistance Ohms	Current-carrying Capacity in Ma.	Type No. Without Switch	Type No. With Switch
5	680	48-5	48S-5
10	450	48-10	48S-10
20	320	48-20	48S-20
25	280	48-25	48S-25
30	260	48-30	48S-30
40	225	48-40	48S-40
50	200	48-50	48S-50
75	165	48-75	48S-75
100	140	48-100	48S-100
150	115	48-150	48S-150
200	100	48-200	48S-200
300	90	48-300	48S-300
400	70	48-400	48S-400
500	65	48-500	48S-500
750	55	48-750	48S-750
1,000	45	48-1000	48S-1000
2,000	31	48-2000	48S-2000
3,000	26	48-3000	48S-3000
4,000	22	48-4000	48S-4000
5,000	20	48-5000	48S-5000
7,500	16	48-7500	48S-7500
10,000	14	48-10000	48S-10000

LIST PRICE \$1.25. With switch \$1.85  
Standard packing — 10 (ten) per carton.

## SERIES 58 WIRE-WOUND CONTROLS

★ Sturdy and reliable in construction yet capable of use for delicate control work, Series 58 Controls are without equal. Noiseless in operation, these units are standard equipment in laboratories, fine instruments, electronic equipment, and especially in the control rooms of radio stations and networks.



Shaft 1½" long.  
⅝" bushing.

The switch is located to operate at extreme counter-clockwise rotation of the shaft. Moving element is insulated from mounting bushing and shaft, and is tested at 500 volts A.C. There is no danger of accidental shock or short-circuit.

Cat. No.	Resistance in Ohms	List Price	Cat. No.	Resistance in Ohms	List Price
58-1	1	\$1.25	58-500	500	1.25
58-2	2	1.25	58-750	750	1.25
58-4	4	1.25	58-1000	1000	1.25
58-6	6	1.25	58-2000	2000	1.25
58-10	10	1.25	58-3000	3000	1.25
58-15	15	1.25	58-5000	5000	1.25
58-20	20	1.25	58-7500	7500	1.25
58-25	25	1.25	58-10K	10,000	1.25
58-30	30	1.25	58-15K	15,000	1.60
58-40	40	1.25	58-20K	20,000	1.60
58-50	50	1.25	58-25K	25,000	1.60
58-60	60	1.25	58-30K	30,000	2.25
58-75	75	1.25	58-40K	40,000	2.25
58-100	100	1.25	58-50K	50,000	2.25
58-200	200	1.25	10-75K*	75,000	3.50
58-300	300	1.25	10-100K*	100,000	3.50
58-400	400	1.25			

If power switch is desired, the type of switch must be specified (See page R-1). Order as 58S and add to list the price of switch selected. The S.P.S.T. switch is supplied as standard where no type is specified. All switches are permanently fastened to the control at the factory.

Standard packing — 10 (ten) per carton.

\* These units are 1" in depth and are the Clarostat Series 10.

## BEAM BENDERS

★ Efficient, simple, and economical, Clarostat Beam Benders are designed for use with television cathode-ray tubes requiring an external means of controlling loose ions. Designed to slip on the neck of all popular television tubes without the use of any tools. Tension is provided by means of spring fingers.



TV-2

List Price \$2.00

Single magnet design.  
For use with the following CRT:

12RP4	14FP4
12QP4	16GP4
15DP4	19AP4



TV-3

List Price \$3.00

Double magnet design.  
For use with the following CRT:

10BP4	16DP4
12LP4	16LP4
15CP4	16RP4
16AP4	

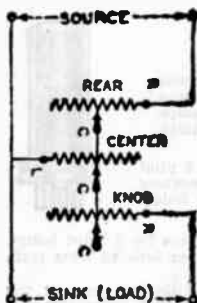
## HAN-D-KIT No. 5



★ Most replacements for least parts stock! Fastest moving items. No duds. Every item a "must" in everyday servicing. Neatly packed in handsome green steel box with hinged top. Handy as filing cabinet, strong box, odds-and-ends box, etc. Contains 6 ballast tubes; 12 volume controls; 4 AD-A-Switches; 5 Greenohms; Dural Hand-D-Wrench; Authorized Service plaque; Data. A \$30.15 value for only: Kit No. 5..... \$15.07 Net Cost\*

# CLAROSTAT

## CONSTANT IMPEDANCE CONTROLS



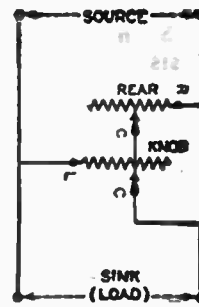
Series CIT-58 T-pads are connected as here shown.

★ Self-compensating volume controls or attenuators known as L-pads and T-pads are essential in eliminating the distortion that arises from the mismatching of impedances in broadcast transmission, sound recording or public address systems. With Clarostat constant-impedance L-pads and T-pads the input and output impedances of associated equipment in a circuit can be kept within the limits of a constant required value.

These pads have a continuous range from 0.5 to 80 decibels attenuation in 90% of rotation, the last 10% affording

infinite attenuation. Employable at either the source or the load in a circuit (see diagrams) these units are readily one-hole mounted. They afford a wide range of uses as mixers, faders, multiple-speaker controls, etc. Such controls can be used as individual volume controls for multiple-speaker systems, without affecting or changing the source impedance.

These units are rated at 2 1/2 watts when used on DC or constant frequency signals. However, they have successfully been used up to 10 watts on audio circuits.



Series CIL-58 L-pads are connected as here shown.

### SERIES CIT Wire-Wound T-Pads

Cat. No.	Resistance in Ohms	List Price
CIT-6	6	\$4.25
CIT-8	8	4.25
CIT-15	15	4.25
CIT-50	50	4.25
CIT-100	100	4.25
CIT-200	200	4.25
CIT-250	250	4.25
CIT-500	500	4.25
CIT-600	600	4.25
CIT-1000	1000	4.25
CIT-2000	2000	4.25



### SERIES CIL Wire-Wound L-Pads

Cat. No.	Resistance in Ohms	List Price
CIL-6	6	\$3.75
CIL-8	8	3.75
CIL-15	15	3.75
CIL-50	50	3.75
CIL-100	100	3.75
CIL-200	200	3.75
CIL-250	250	3.75
CIL-500	500	3.75
CIL-600	600	3.75
CIL-1000	1000	3.75
CIL-2000	2000	3.75

## CONSTANT IMPEDANCE OUTPUT ATTENUATORS



db steps are 3, 6, 9, 12, 15, 18, 21, 24 and 30. Absolutely noiseless and distortionless in operation.

★ Developed to meet the need for a constant-impedance attenuator capable of handling considerable power without measurable insertion loss, Series CIB attenuators provide linear attenuation with ample power-handling capacity.

These units are rated at 10 watts when used on DC or constant frequency signals. However, they have successfully been used up to 80 watts on audio circuits.

Compact, capable of safely handling the rated wattages at any setting of the dial, these units are

recommended as an output level control for power amplifiers or as an input attenuator for individual or group speakers in a public address system. Linear attenuation is provided in steps of 3 decibels up to 80, with final step to infinity.

Unit is furnished in black baked-enamel metal casing, 2" in diameter by 2 1/2" long, equipped with dial plate and bar knob. Not available with power switch. One-hole mounting 3/8" diameter bushing. Shaft 1" long.

### Series CIB—10 Watts

Cat. No.	Resistance in Ohms	List Price
CIB-6	6	\$6.50
CIB-8	8	6.50
CIB-15	15	5.85
CIB-50	50	5.85
CIB-200	200	5.85
CIB-250	250	5.85
CIB-500	500	5.85
CIB-600	600	5.85
Net Price		\$6.50*

### Series PW-25—25 Watt

Cat. No.	Total Resis. Ohms	Max. Cur. at		List Price
		Total Res. Amps.	Max. Cur. Up to 1/2 Res. Amps.	
PW-25-1	1	5.000	7.500	\$5.85
PW-25-2	2	3.586	5.304	5.20
PW-25-3	3	2.887	4.330	5.20
PW-25-6	6	2.041	3.062	5.20
PW-25-8	8	1.768	2.652	5.20
PW-25-10	10	1.581	2.372	5.20
PW-25-15	15	1.291	1.986	5.20
PW-25-25	25	1.000	1.500	5.20
PW-25-35	35	.845	1.268	5.20
PW-25-50	50	.707	1.061	5.20
PW-25-75	75	.577	.866	5.20
PW-25-100	100	.500	.750	5.20
PW-25-125	125	.447	.671	5.20
PW-25-175	175	.378	.567	5.20
PW-25-250	250	.316	.474	5.20
PW-25-350	350	.267	.401	5.20
PW-25-500	500	.224	.335	5.20
PW-25-750	750	.188	.274	5.20
PW-25-1000	1000	.158	.227	5.85
PW-25-1500	1500	.129	.194	5.85
PW-25-2500	2500	.100	.150	5.85
PW-25-3500	3500	.085	.127	6.20

Standard Packing—Individual Carton

### POWER RHEOSTATS

★ Exceptionally rugged. Trouble-free design. Withstand severe overloading without smoking, burning, charring. Element imbedded in cold-setting cement. Resistance winding supported on insulated metal core for maximum heat conduction and radiation, even at partial rotation settings. Single-hole mounting. Adjustable locking pin firmly anchors unit against bodily rotation. Shaft and bushing insulated from current-carrying arm for safety. 25 and 50 watt sizes.



### Series PW-50—50 Watt

Cat. No.	Total Resis. Ohms	Max. Cur. at		List Price
		Total Res. Amps.	Max. Cur. Up to 1/2 Res. Amps.	
PW-50-0.5	0.5	10.000	15.000	\$6.50
PW-50-1	1	7.071	10.607	6.50
PW-50-2	2	5.000	7.500	6.50
PW-50-4	4	3.536	5.304	5.85
PW-50-6	6	2.887	4.330	5.85
PW-50-8	8	2.500	3.750	5.85
PW-50-12	12	2.041	3.062	5.85
PW-50-16	16	1.768	2.652	5.85
PW-50-22	22	1.508	2.261	5.85
PW-50-35	35	1.195	1.793	5.85
PW-50-50	50	1.000	1.500	5.85
PW-50-80	80	.791	1.186	5.85
PW-50-125	125	.682	.949	5.85
PW-50-150	150	.677	.866	5.85
PW-50-225	225	.471	.707	5.85
PW-50-300	300	.408	.612	5.85
PW-50-500	500	.316	.474	5.85
PW-50-800	800	.250	.375	6.20
PW-50-1000	1000	.224	.335	6.20
PW-50-1600	1600	.177	.265	6.20
PW-50-2500	2500	.141	.212	6.20
PW-50-3500	3500	.120	.179	6.50
PW-50-5000	5000	.100	.150	6.50

Standard Packing—Individual Carton

# CLAROSTAT

## TUBE-TYPE WIRE-WOUND RESISTORS

### Standard Resistor Tubes

Cat. No.	Cat. No.
BK-29-B	K-74-B
BK-29-D	K-80-B
BK-32-D	K-82-B
BK-36-B	K-86-B
BK-36-D	K-90-A
BK-36-H	K-90-B
BK-42-B	K-92-A
BK-42-C	K-92-B
BK-49-B	L-42-B
BK-49-C	L-42-C
BK-55-B	L-42-D
BK-67-BJ	L-49-A
BL-42-B	L-49-B
BL-42-D	L-49-C
BM-49-B	L-49-D
BM-55-B	L-49-H
K-26J-218	L-55-B
K-36-D	L-55-CJ
K-42-A	L-55-C
K-42-AJ	L-55-CPR
K-42-B	L-55-D
K-42-C	M-30-H
K-42-D	M-42-B
K-49-A	M-49-B
K-49-B	M-55-B
K-49-C	M-55-H
K-49-D	M-80-B
K-49-H	M-86892-9
K-55-A	10-610
K-55-B	100-37
K-55-C	100-70
K-55-CPR	100-76
K-55-D	100-77
K-55-H	100-79
K-67-A	115-78
K-67-B	5459
K-67-BJ	28602
K-72-B	48X106

List Price.....\$1.00  
Standard Packing —  
10 per carton

★ Clarostat developed and pioneered the tube-type resistor for voltage-reducing purposes and for supplying needed voltage for pilot lamp operation in AC-DC receivers. Strictly non-inflammable, with the resistance element wound on a mica form firmly secured in the metal tube and connected with the base prongs, the Clarostat construction is notably superior to others.

To simplify servicing of receivers using tube-type resistors, Clarostat has selected the most popular values for so-called Universal numbers serving most replacement needs. Standard resistor tubes of the most popular types are also listed below.

In connection with listings, the following nomenclature applies: Prefixes: K denotes 6.3 volt 150 ma. No. 40 pilot lamp.

L denotes 6.3 volt 250 ma. No. 46 pilot lamp.

M denotes 6.3 volt 200 ma. No. 51 pilot lamp.

The numeral indicates total voltage drop across resistance unit.

Suffixes designate:

A—No pilot lamp taps.

B—1 pilot lamp tap for 1 lamp.

C—1 pilot lamp tap for 2 lamps.

D—2 pilot lamp taps for 2 lamps.

E—3 pilot lamp taps for 3 lamps.

E1—1 pilot lamp tap for 3 lamps.

F—1 pilot lamp tap for 1 lamp.

G—1 pilot lamp tap for 2 pilot lamps. (Tapped sections isolated from main reducing body.)

H—2 pilot lamp taps for 2 pilot lamps. (Tapped section isolated from main reducing body.)

The letter "J" following any of the suffixes denotes a shorted connection between 2 prongs of the tube, i.e., K-67-BJ, the short is located between Nos. 3 and 4 prongs.

Care must be exercised when replacing any tube whose number ends in "J", as the shorted pins are not always as in above example. Some are between Nos. 6 and 7 prongs, and others between 5 and 8.

When replacing any plug-in resistor tube with a Clarostat Universal type, note prongs missing on replaced tube and cut off corresponding prongs on the Universal Replacement tube.

The numeral indicates total voltage drop across resistance unit.

### TELEVISION BALLASTS

B9M16067	for Belmont Television
B9M16534	for Belmont Television
B10M15822	for Belmont Television
17A470303	for Motorola Television
17A485459	for Motorola Television
TBR 102D	for Teletone Television
TBR 103D	for Teletone Television
TBR 104D	for Teletone Television
*397021	for Emerson Television
*397022	for Emerson Television
*397023	for Emerson Television
SW-507300	for Stewart-Warner Television

List Price.....\$3.00

Standard Packing — 10 (ten) per carton  
★ These Emerson ballast tubes are used as protective resistors and any internal failure in the circuit may burn them out. Therefore, this unit is expendable.

### Standard Glasohm Resistors

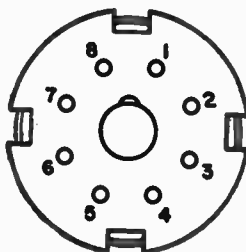
TYPE FYG — 2-WATT

1" Fabric Length with 2" Pigtales  
1/2" dia. core. RMA Color-coded

Cat. No.	Ohms	Cat. No.	Ohms
FYG5	5	FYG350	350
FYG10	10	FYG375	375
FYG15	15	FYG400	400
FYG25	25	FYG500	500
FYG35	35	FYG600	600
FYG40	40	FYG700	700
FYG50	50	FYG750	750
FYG60	60	FYG800	800
FYG75	75	FYG850	850
FYG100	100	FYG900	900
FYG125	125	FYG1000	1000
FYG150	150	FYG1250	1250
FYG200	200	FYG1500	1500
FYG225	225	FYG1800	1800
FYG250	250	FYG1750	1750
FYG300	300	FYG2000	2000

List Price.....\$0.30

Standard Packing—10 (ten) per carton



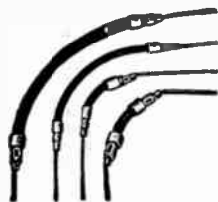
### UNIVERSAL RESISTOR TUBES

Universal Tube No.	Replaces AC-DC Tubes Beginning with Letters	Having Numbers From	Ending in Letter
10—23-A	BK, BL, K, L, M	10 to 23	A, B, C, D
10—23-E	BK, BL, K, L, M	10 to 23	E
10—23-F	BK, BL, K, L, M	10 to 23	F, G, H
23—55-A	BK, BL, K, L, M	23 to 55	A, B, C, D
23—55-E	BK, BL, K, L, M	23 to 55	E
23—55-F	BK, BL, K, L, M	23 to 55	F, G, H
60—92-A	BK, BL, K, L, M	60 to 92	A, B, C, D
60—92-E	BK, BL, K, L, M	60 to 92	E
60—92-F	BK, BL, K, L, M	60 to 92	F, G, H
92—105-A	BK, BL, K, L, M	92 to 105	A, B, C, D

List Price.....\$1.50

Standard Packing — 10 (ten) per carton

### GLASOHMS\* Glass-Insulated Flexible Resistors



★ This is a new development in resistors which has found instant acceptance in widespread applications.

Glasohms consist of a wire winding on a fibre-glass core, with a covering of braided fibre-glass. Each strand of glass is no thicker than usual

cotton thread and just as flexible, so that the complete units can be bent or twisted and even knotted without breakage or weakening. Clarostat is the only manufacturer of Glasohms. These units are ideal for resistance boxes, attenuators, voltage-dividers, multipliers, step-by-step rheostats, and for use in point-to-point wiring jobs. Handy, inexpensive and very durable, these units can withstand heavy overloads without damage. There is nothing in them to burn or char. Glasohms are also suitable for use as miniature heating elements serving in hair curlers, immersion heaters, soldering irons, electrically-heated ovens for crystal oscillators, etc., especially in longer lengths obtained on special orders.

\*Registered trade-mark.

### AUTOMATIC LINE VOLTAGE REGULATORS

★ To maintain constant line voltage and thus prevent burning out the tubes of a radio receiver or other tube-using device, this handy unit, operating effectively on 110-volt A.C. or D.C. by simply plugging into the usual socket or outlet, safeguards against line voltage surges or increases even up to 140 volts. At the normal 110-volt, the resistance of the unit is low and the voltage drop across it is negligible. However, as the line voltage increases the resistance of the unit increases proportionately, with a constant increase in voltage drop across it. This automatic voltage control or ballast action insures a steady, practically constant and always safe operating potential.



Type No.	Rating Watts	Dimensions are 1 1/2" dia. x 1 1/2" long. Prongs 5/8" long.	No. of Tubes Used
O	50	For Use With Sets Consuming Up to 60 watts	4
A	100	60 to 100 watts	5, 6, 7
B	150	100 to 150 watts	8, 9, 10
C	200	150 to 200 watts	11, 12
D	250	200 to 250 watts	2 Type 50
E*	100	60 to 100 watts	

\*Note: For use with 220-volt receivers

List Price .....\$1.75

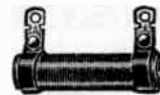
Standard Packing — 10 (ten) per carton

# CLAROSTAT

## FAMOUS GREENOHMS — WIRE-WOUND FIXED POWER RESISTORS

★ The toughest power resistors made. Will dissipate heat without change in resistance value. Will withstand heavy overloads, humidity, high-heat, and severe heat shock (frequent on-and-off operation). Due to the exclusive CLAROSTAT inorganic-cement coating,

these resistors can be given the toughest assignments and will come through with flying colors. Greenohms are found in the finest electrical, radio and industrial assemblies — in equipment that must stand up — for functions where failure cannot be tolerated.



### SERIES PR-5-F—5-WATT

Dimensions:  $\frac{1}{8}$ " dia. x 1" long.

The baby member of the famous Clarostat Greenohm family. Available in standard resistance values from 1 ohm to 7500 ohms (See exact values in listings for Series AC-10-F up to 7500).

All ohmages ..... List Price \$0.50  
Standard Packing — 10 (ten) per carton.

### Series AC-10-F—10-Watt

Dimensions:  $\frac{1}{8}$ " dia. x 1  $\frac{1}{4}$ " long

Ohms	Ohms	Ohms	Ohms
1	125	1200	10000
2	150	1250	11000
3	200	1500	12000
4	225	1750	12500
5	250	2000	13500
7.5	300	2250	14500
10	350	2500	15000
12	400	3000	18000
15	450	3500	17500
20	500	4000	18000
25	600	4500	20000
30	700	5000	22500
35	750	6000	25000
40	800	7000	30000
50	900	7500	35000
75	1000	8000	40000
100	1100	8500	50000

All ohmages — List Price \$0.55  
Standard Packing — 10 (ten) per carton

### Series AC-20-K—20-Watt

Dimensions:  $\frac{1}{8}$ " dia. x 2" long

Ohms	Ohms	Ohms	Ohms
1	300	6000	65000
5	850	7000	70000
10	1000	7500	75000
25	1200	8000	80000
50	1250	9000	85000
75	1500	10000	90000
100	1750	12500	95000
150	1850	15000	100000
200	2000	20000	
250	2250	25000	
300	2500	30000	
350	2750	35000	
400	3000	40000	
500	3500	45000	
650	4000	50000	
700	4500	55000	
750	5000	60000	

LIST PRICE:  
1 to 15,000 ohms... \$0.65  
20,000 to 50,000 ohms... .85  
55,000 to 100,000 ohms... 1.10  
Standard Packing — 5 (five) per carton

### Series A-25-K—25-Watt

Dimensions:  $\frac{1}{8}$ " dia. x 2  $\frac{1}{2}$ " long

Ohms	Ohms	Ohms	Ohms
1	150	2250	75000
2	200	2500	80000
3	250	3000	15000
5	300	3500	20000
7.5	400	4000	25000
10	500	4500	30000
15	750	5000	35000
20	800	6000	40000
25	1000	7000	45000
50	1250	7500	50000
75	1500	8000	60000
100	2000	9000	70000

LIST PRICES:  
1 to 5000 ohms ..... \$0.75  
6000 to 15000 ohms ..... .85  
20000 to 50000 ohms ..... 1.00  
60000 ohms ..... 1.15  
70000 ohms ..... 1.25  
75000 ohms ..... 1.30  
80000 ohms ..... 1.35  
85000 ohms ..... 1.50  
90000 ohms ..... 1.80  
100000 ohms ..... 1.75

Supplied with Mounting Brackets at No Extra Cost  
Standard Packing — Individually Boxed

### Series K-40-N—40-Watt

Dimensions:  $\frac{1}{8}$ " dia. x 3  $\frac{1}{2}$ " long

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
5	125	1000	7500	35000	125000
10	150	1500	8500	40000	150000
15	200	2000	10000	50000	175000
20	250	2500	12500	60000	200000
25	300	3000	15000	70000	
50	400	4000	20000	80000	
75	500	5000	25000	90000	
100	750	6000	30000	100000	

LIST PRICES:  
5 to 5000 ohms ..... \$0.90  
6000 to 25000 ohms ..... 1.00  
30000 to 100000 ohms ..... 1.20  
125000 to 150000 ohms ..... 1.40  
175000 ohms ..... 1.50  
200000 ohms ..... 1.60

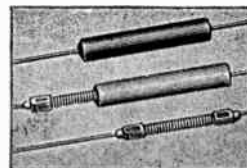
Supplied with Mounting Brackets at No Extra Cost  
Standard Packing—Individually Boxed

Ohms	Series K-50-N $\frac{3}{8}$ " dia. x 4 $\frac{1}{2}$ " l. 50-watt	Series K-80-N $\frac{3}{8}$ " dia. x 6 $\frac{1}{2}$ " l. 80-watt	Series K-100-W 1 $\frac{1}{4}$ " dia. x 8 $\frac{1}{2}$ " l. 115-watt	Series K-160-W 1 $\frac{1}{2}$ " dia. x 8 $\frac{1}{2}$ " l. 160-watt	Series K-200-W 1 $\frac{1}{2}$ " dia. x 10 $\frac{1}{2}$ " l. 200-watt
5	\$1.10	\$1.25	\$1.75	\$2.25	\$2.50
10	1.10	1.25	1.75	2.25	2.50
25	1.10	1.25	1.75	2.25	2.50
50	1.10	1.25	1.75	2.25	2.50
75	1.10	1.25	1.75	2.25	2.50
100	1.10	1.25	1.75	2.25	2.50
150	1.10	1.25	1.75	2.25	2.50
200	1.10	1.25	1.75	2.25	2.50
250	1.10	1.25	1.75	2.25	2.50
300	1.10	1.25	1.75	2.25	2.50
400	1.10	1.25	1.75	2.25	2.50
500	1.10	1.25	1.75	2.25	2.50
750	1.10	1.25	1.75	2.25	2.50
1,000	1.10	1.25	1.75	2.25	2.50
1,250	1.10	1.25	1.75	2.25	2.50
1,500	1.10	1.25	1.75	2.25	2.50
2,000	1.10	1.25	1.75	2.25	2.50
2,250	1.10	1.25	1.75	2.25	2.50
2,500	1.10	1.25	1.75	2.25	2.50
3,000	1.10	1.25	1.85	2.25	2.50
3,500	1.10	1.25	1.85	2.25	2.50
4,000	1.10	1.25	1.85	2.25	2.50
4,500	1.10	1.25	1.95	2.25	2.50
5,000	1.10	1.25	1.95	2.25	2.50
6,000	1.35	1.50	1.95	2.25	2.50
7,500	1.35	1.50	1.95	2.25	2.50
8,000	1.35	1.50	1.95	2.25	2.50
9,000	1.35	1.50	1.95	2.25	2.50
10,000	1.35	1.50	1.95	2.25	2.50
12,000	1.35	1.50	1.95	2.30	2.75
12,500	1.35	1.50	1.95	2.35	2.85
15,000	1.35	1.50	1.95	2.65	3.00
20,000	1.35	1.50	1.95	2.65	3.00
25,000	1.35	1.50	1.95	2.65	3.00
30,000	1.70	1.75	2.50	2.65	3.00
35,000	1.70	1.75	2.50	2.65	3.00
40,000	1.70	1.75	2.50	2.65	3.00
50,000	1.70	1.75	2.50	2.65	3.00
60,000	1.70	2.00	2.75	3.00	3.00
70,000	1.70	2.00	2.75	3.00	3.00
75,000	1.70	2.00	2.75	3.00	3.00
80,000	1.70	2.10	2.85	3.00	3.00
100,000	1.70	2.25	3.00	3.00	3.00
125,000	2.00		3.10	3.20	3.75
150,000	2.25		3.25	3.50	3.75
175,000	2.25		3.35		
200,000	3.00		3.75		

All resistors furnished with mounting brackets at no extra cost. Standard Packing — Individually Boxed.

## GREENOHM JR. WIRE-WOUND RESISTORS

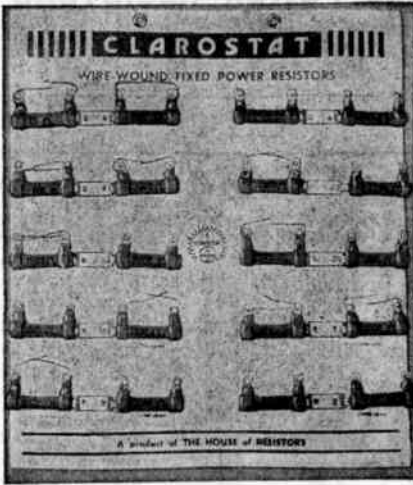
★ Handy, inexpensive, ceramic-cased midget wire-wound resistors for tight spots, especially with point-to-point wiring. These tiny resistors take the place of more cumbersome and costlier bracket-mounted units. This "junior" version of the well-known Greenohm power resistors features a wire winding on fibre-glass core, 1  $\frac{1}{4}$ " axial pigtail leads, and a steatite protective casing sealed with exclusive Greenohm cold-setting inorganic cement. This resistor will not blister, crack, or change shape. Type C7GJ, 1  $\frac{1}{4}$ " long by  $\frac{1}{8}$ " dia., rated at 7 watts. Smaller Type C4GJ, 1" long by  $\frac{1}{8}$ " dia., rated at 4 watts. In characteristic Greenohm green, with printed values on casing.



Cat. No.	List Price
Type C7GJ (1 to 5000 ohms).....	\$0.55
Type C4GJ (1 to 1000 ohms).....	.55

# CLAROSTAT

## FAMOUS GREENOHMS - WIRE-WOUND ADJUSTABLE POWER RESISTORS

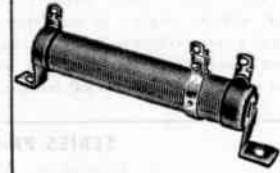


★ These power resistors feature the exclusive Clarostat inorganic cement coating and are similar in rugged construction to the fixed types on page R-7, except for the bared section of the winding contacted at any ohmage by the adjustable slider band. This band is permanently locked in place at the required resistance value by simply tightening a screw.

### GREENOHM KIT

★ Here's a simple means of keeping 20 of the most popular 10-watt power resistors always at your finger-tips. Each Greenohm is held by metal clip on the wall chart. Slide off unit and value appears on wall chart, for handy re-ordering.

Cat. No. GK-1.....LIST PRICE \$11.00



### DIMENSIONS

★ Fixed and Adjustable Greenohms are of the same dimensions, wattage for wattage, as follows:

Rating	Dia.	Lgth.
10-watt	$\frac{1}{8}$ "	$1\frac{1}{4}$ "
20-watt	$\frac{3}{16}$ "	2"
25-watt	$\frac{3}{16}$ "	$2\frac{1}{2}$ "
40-watt	$\frac{3}{8}$ "	$3\frac{1}{2}$ "
50-watt	$\frac{3}{8}$ "	$4\frac{1}{2}$ "
80-watt	$\frac{3}{8}$ "	$6\frac{1}{2}$ "
100-watt	$1\frac{1}{8}$ "	$6\frac{1}{2}$ "
160-watt	$1\frac{1}{8}$ "	$8\frac{1}{2}$ "
200-watt	$1\frac{1}{8}$ "	$10\frac{1}{2}$ "

### SERIES AC-10-FA—10-WATT

Dimensions:  $\frac{1}{8}$ " dia. x  $1\frac{1}{4}$ " long

Ohms	Ohms	Ohms	Ohms
1	100	1000	6000
2	150	1250	7000
3	200	1500	7500
5	250	2000	8000
7.5	300	2250	8500
10	350	2500	9000
15	400	3000	10000
20	500	3500	
25	600	4000	
50	750	4500	
75	800	5000	

LIST PRICE: All Sizes: \$0.85

Standard Packing — 10 (ten) per carton

### SERIES A-25-KA—25-WATT

Dimensions:  $\frac{3}{16}$ " dia. x  $2\frac{1}{2}$ " long

Ohms	Ohms	Ohms	Ohms
1	100	1500	7500
2	150	2000	8000
3	200	2250	9000
5	250	2500	10000
7.5	300	3000	12000
10	400	3500	15000
15	500	4000	20000
20	750	4500	25000
25	800	5000	50000
50	1000	6000	
75	1250	7000	

### LIST PRICES:

1 to 5000 ohms.....	\$0.95
6000 to 15000 ohms.....	1.10
20000 to 25000 ohms.....	1.25
50000 ohms.....	1.50

Supplied with Mounting Brackets at No Extra Cost.

Extra Slider Bands.....\$0.10 each

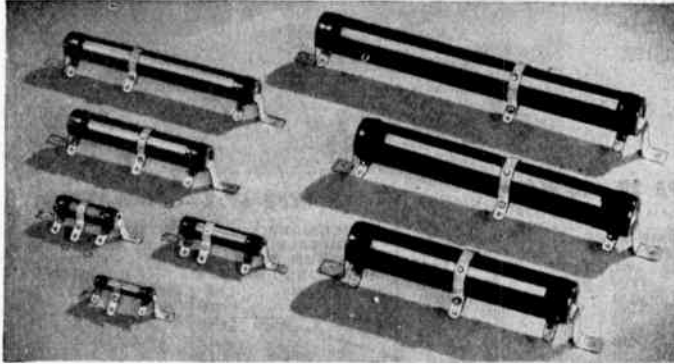
Standard Packing — Individually Boxed

Ohms	Series K-50-NA	Series K-80-NA	Series K-100-WA	Series K-160-WA	Series K-200-WA	Ohms	Series K-50-NA	Series K-80-NA	Series K-100-WA	Series K-160-WA	Series K-200-WA
	$\frac{3}{8}$ " dia. x $4\frac{1}{2}$ " l. 50-watt	$\frac{3}{8}$ " dia. x $6\frac{1}{2}$ " l. 80-watt	$1\frac{1}{8}$ " dia. x $6\frac{1}{2}$ " l. 115-watt	$1\frac{1}{8}$ " dia. x $8\frac{1}{2}$ " l. 160-watt	$1\frac{1}{8}$ " dia. x $10\frac{1}{2}$ " l. 200-watt		$\frac{3}{8}$ " dia. x $4\frac{1}{2}$ " l. 50-watt	$\frac{3}{8}$ " dia. x $6\frac{1}{2}$ " l. 80-watt	$1\frac{1}{8}$ " dia. x $6\frac{1}{2}$ " l. 115-watt	$1\frac{1}{8}$ " dia. x $8\frac{1}{2}$ " l. 160-watt	$1\frac{1}{8}$ " dia. x $10\frac{1}{2}$ " l. 200-watt
5	\$1.50	\$1.75	\$2.00	\$2.50	\$3.00	5,000	\$1.50	\$1.75	\$2.25	\$2.65	\$3.25
10	1.50	1.75	2.00	2.50	3.00	6,000	1.75	2.00	2.25	2.65	3.25
15	1.50	1.75	2.00	2.50	3.00	7,000	1.75	2.00	2.25	2.65	3.25
20	1.50	1.75	2.00	2.50	3.00	7,500	1.75	2.00	2.25	2.65	3.25
25	1.50	1.75	2.00	2.50	3.00	8,000	1.75	2.00	2.25	2.65	3.25
50	1.50	1.75	2.00	2.50	3.00	9,000	1.75	2.00	2.25	2.65	3.25
75	1.50	1.75	2.00	2.50	3.00	10,000	1.75	2.00	2.25	2.65	3.25
100	1.50	1.75	2.00	2.50	3.00	12,000	1.75	2.00	2.25	2.90	3.50
150	1.50	1.75	2.00	2.50	3.00	15,000	1.75	2.00	2.25	3.25	3.75
200	1.50	1.75	2.00	2.50	3.00	20,000	1.75	2.00	2.25	3.25	3.75
250	1.50	1.75	2.00	2.50	3.00	25,000	1.75	2.00	2.25	3.25	3.75
300	1.50	1.75	2.00	2.50	3.00	30,000	2.00	2.25	2.75	3.25	3.75
400	1.50	1.75	2.00	2.50	3.00	35,000	2.00	2.25	2.75	3.25	3.75
500	1.50	1.75	2.00	2.50	3.00	40,000	2.00	2.25	2.75	3.25	3.75
750	1.50	1.75	2.00	2.50	3.00	45,000	2.00	2.25	2.75	3.25	3.75
1,000	1.50	1.75	2.00	2.50	3.00	50,000	2.00	2.25	2.75	3.25	3.75
1,250	1.50	1.75	2.00	2.50	3.00	60,000	2.50	2.50	3.00	3.75	3.75
1,500	1.50	1.75	2.00	2.50	3.00	75,000	2.50	2.50	3.00	3.75	3.75
2,000	1.50	1.75	2.00	2.50	3.00	80,000	2.50	2.50	3.50	3.75	4.25
2,500	1.50	1.75	2.00	2.50	3.00	100,000	2.50	2.50	3.50	3.75	4.25
3,500	1.50	1.75	2.25	2.50	3.00	125,000			3.50	4.25	
4,000	1.50	1.75	2.25	2.50	3.00	150,000			3.75	4.25	
4,500	1.50	1.75	2.25	2.50	3.00						

All resistors furnished with mounting brackets at no extra cost.  
Standard Packing — Individually Boxed.

# LECTROHM *Vitreous Enameled* RESISTORS

Quality—Accuracy—Dependability—Long Life



## WIRE WOUND ADJUSTABLE TYPES

The same high quality and construction are used for LECTROHM Adjustable Resistors as are incorporated in LECTROHM fixed units.

These resistors are used for replacing voltage dividers in radio receivers, for radio transmitter power supply, and for general experimental work.

### TYPE 1 1/4 EV—10-WATT

DIMENSIONS ..... 1 1/8" x 1 1/8" x 1 3/4"  
 TERMINALS ..... Lug Type  
 MAXIMUM RESISTANCE ..... 10,000 ohms  
 MOUNTING BRACKET ..... Centers 2 1/4"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	3150	\$0.98	750	115	\$0.98
2	2280	.98	800	111	.98
3	1825	.98	1000	100	.98
5	1415	.98	1250	89	.98
7.5	1155	.98	1500	79	.98
10	1000	.98	2000	69	.98
15	815	.98	2250	64	.98
20	707	.98	2500	61	.98
25	630	.98	3000	56	.98
50	447	.98	3500	51	.98
75	365	.98	4000	47	.98
100	315	.98	4500	44	.98
150	258	.98	5000	40	.98
200	223	.98	6000	36	.98
250	200	.98	7000	33	.98
300	182	.98	7500	32	.98
350	169	.98	8000	31	.98
400	158	.98	8500	30	.98
500	141	.98	10000	24	.98
600	129	.98			

### TYPE 2SV—25-WATT

DIMENSIONS ..... 1 1/8" x 1 1/8" x 2"  
 TERMINALS ..... Solder Lug  
 MAXIMUM RESISTANCE ..... 25,000 ohms  
 MOUNTING BRACKET ..... Centers 2 7/8"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	5000	\$1.24	1000	158	\$1.24
8	2890	1.24	1250	141	1.24
5	2340	1.24	1500	129	1.24
10	1580	1.24	2000	112	1.24
15	1290	1.24	2500	100	1.24
25	1000	1.24	3000	91	1.24
50	707	1.24	3500	84	1.24
75	575	1.24	4000	79	1.24
100	500	1.24	5000	71	1.24
150	400	1.24	6000	64	1.43
200	353	1.24	7500	57	1.43
250	316	1.24	10000	50	1.43
300	288	1.24	12000	44	1.43
400	250	1.24	15000	26	1.43
500	224	1.24	20000	22	1.56
750	182	1.24	25000	20	1.56

### TYPE 4 1/2 MV—50-WATT

DIMENSIONS ..... 3/4" x 1/2" x 4 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 5 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	8160	\$1.95	3000	129	\$1.95
10	2280	1.95	4000	112	1.95
25	1410	1.95	5000	100	1.95
50	1000	1.95	7500	81	2.15
75	816	1.95	10000	70	2.15
100	707	1.95	12000	64	2.15
150	577	1.95	15000	57	2.15
200	500	1.95	20000	50	2.15
250	447	1.95	25000	44	2.15
300	408	1.95	30000	41	2.47
400	354	1.95	40000	35	2.47
500	316	1.95	50000	20	2.47
750	258	1.95	60000	18	2.66
1000	224	1.95	75000	17	2.86
1500	182	1.95	80000	16	2.86
2000	158	1.95	100000	14	2.86
2500	141	1.95			

### TYPE 6 1/2 MV—80-WATT

DIMENSIONS ..... 3/4" x 1/2" x 6 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 7 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
10	2830	\$2.54	3500	152	\$2.54
15	2810	2.54	5000	126	2.54
25	1790	2.54	7500	103	2.86
50	1265	2.54	10000	89	2.86
100	894	2.54	15000	73	2.86
250	566	2.54	20000	63	2.86
300	517	2.54	25000	57	2.86
400	495	2.54	30000	51	3.25
500	400	2.54	40000	44	3.25
750	327	2.54	50000	25	3.25
1000	283	2.54	60000	23	3.58
1500	231	2.54	75000	21	3.58
2000	200	2.54	80000	20	3.58
3500	179	2.54	100000	18	3.58

### ADJUSTABLE LUGS

Screw-Driver Type	Diameter of Resistor	List Price
	5/8"	.13
	3/4"	.20
	1 1/4"	.20

### TYPE 6 1/2 KV—100-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 6 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 7 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
50	1413	\$2.86	15000	81	\$3.25
100	1000	2.86	20000	70	3.25
500	447	2.86	25000	63	3.25
1000	316	2.86	30000	57	3.58
2000	223	2.86	35000	53	3.58
3000	182	2.86	40000	50	3.58
4000	158	2.86	50000	44	3.58
5000	141	2.86	75000	28	3.90
7500	115	3.25	100000	20	3.90
10000	100	3.25			

### TYPE 8 1/2 KV—160-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 8 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 9 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	5660	\$3.58	10000	126	\$3.58
10	4000	3.58	15000	103	4.16
25	2530	3.58	20000	89	4.16
50	1788	3.58	25000	80	4.16
100	1266	3.58	30000	73	4.16
500	566	3.58	40000	55	4.16
1000	400	3.58	50000	43	4.16
2500	253	3.58	75000	27	4.55
5000	179	3.58	100000	18	4.55

### TYPE 10 1/2 KV—200-WATT

DIMENSIONS ..... 1 1/8" x 3/4" x 10 1/2"  
 TERMINALS ..... Solder Lugs  
 MAXIMUM RESISTANCE ..... 100,000 ohms  
 MOUNTING BRACKET ..... Centers 11 1/2"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
50	2000	\$4.29	10000	141	\$4.29
100	1414	4.29	20000	100	5.00
500	632	4.29	25000	89	5.00
1000	447	4.29	30000	81	5.00
1500	361	4.29	50000	63	5.00
2000	316	4.29	75000	51	5.00
2500	288	4.29	100000	28	5.00
5000	200	4.29			

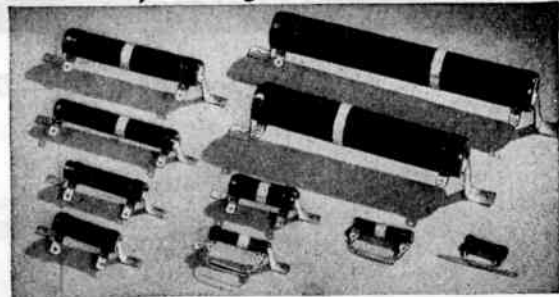
Mounting brackets and one band are furnished with all adjustable types.

# LECTROHM Enameled Vitreous RESISTORS

Quality—Accuracy—Dependability—Long Life

## WIRE WOUND—FIXED TYPES

LECTROHM Resistors are manufactured from the highest quality materials obtainable and are rated according to R.M.A. standards. LECTROHM Resistors are rugged—dependable—accurate—quality components that will give long trouble-free service. (Mounting brackets available for 20, 50, 80, 100, 160 and 200 watt units.)



**TYPE 1¼L—5-WATT**

DIMENSIONS..... ¼" x ½" x 1¼"  
TERMINALS..... Pig Tail  
MAXIMUM RESISTANCE..... 10,000 ohms  
No Mounting Brackets

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	2240	\$0.52	300	129	\$0.52
2	1580	.52	350	119	.52
3	1290	.52	400	111	.52
4	1110	.52	500	100	.52
5	1000	.52	600	91	.52
10	707	.52	700	84	.52
15	575	.52	750	81	.52
20	500	.52	800	79	.52
25	447	.52	900	74	.52
30	408	.52	1000	70	.52
35	374	.52	1100	65	.52
40	346	.52	1200	60	.52
50	316	.52	1250	59	.52
75	258	.52	1500	54	.52
100	222	.52	1750	50	.52
125	200	.52	2000	44	.52
150	182	.52	2500	40	.52
200	158	.52	3000	36	.52
225	149	.52	4000	31	.52
250	141	.52	5000	28	.52

**TYPE 2R—20-WATT**

DIMENSIONS..... ½" x ½" x 2"  
TERMINALS..... Solder Lug  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 2½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	2000	\$0.91	1100	134	\$0.91
10	1411	.91	1250	126	.91
15	1153	.91	1500	116	.91
20	1000	.91	2000	100	.91
25	894	.91	2500	89	.91
40	707	.91	3000	81	.91
50	653	.91	4000	79	.91
60	574	.91	5000	63	.91
75	517	.91	6000	57	.91
100	448	.91	7000	53	.91
125	400	.91	7500	51	.91
150	365	.91	8000	50	.91
200	316	.91	10000	43	.91
250	283	.91	12500	39	.91
300	258	.91	15000	36	.91
350	238	.91	20000	24	1.11
400	223	.91	25000	21	1.11
500	200	.91	30000	21	1.11
600	182	.91	35000	18	1.11
700	169	.91	40000	17	1.11
750	163	.91	45000	13	1.11
800	158	.91	50000	11	1.11
1000	141	.91			

**TYPE 6½K—100-WATT**

DIMENSIONS..... 1½" x ¾" x 6½"  
TERMINALS..... Solder Lugs  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 7½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
25	2000	\$2.15	3000	180	\$2.15
50	1414	2.15	5000	140	2.15
75	1153	2.15	7500	115	2.54
100	1100	2.15	10000	100	2.54
150	815	2.15	15000	80	2.54
250	632	2.15	20000	70	2.54
500	417	2.15	25000	63	2.54
750	365	2.15	30000	58	2.86
1000	315	2.15	40000	50	2.86
1250	280	2.15	50000	44	2.86
1500	250	2.15	60000	41	3.25
2000	220	2.15	75000	36	3.25
2500	200	2.15	100,000	31	3.58

**TYPE 1¼—10-WATT**

DIMENSIONS..... ½" x ½" x 1¼"  
TERMINALS..... Pig Tail  
MAXIMUM RESISTANCE..... 40,000 ohms  
No Mounting Brackets

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
1	3150	\$0.59	1500	79	\$0.59
2	2230	.59	1750	74	.59
3	1825	.59	2000	69	.59
5	1415	.59	2250	64	.59
7.5	1155	.59	2500	61	.59
10	1000	.59	3000	56	.59
15	815	.59	3500	51	.59
20	707	.59	4000	47	.59
25	630	.59	4500	44	.59
50	447	.59	5000	40	.59
75	365	.59	6000	36	.59
100	315	.59	7000	33	.59
150	258	.59	7500	32	.59
200	228	.59	8000	31	.59
250	200	.59	8500	30	.59
300	182	.59	10000	24	.59
350	169	.59	12000	20	.65
400	158	.59	12500	20	.65
500	141	.59	15000	18	.65
600	129	.59	17500	17	.65
700	119	.59	18000	16	.65
750	115	.59	20000	15	.65
800	111	.59	22500	15	.65
900	105	.59	25000	14	.65
1000	100	.59	30000	8	.65
200	91	.59	40000	7	.65
250	89	.59			

**TYPE 4½M—50-WATT**

DIMENSIONS..... ¾" x ½" x 4½"  
TERMINALS..... Solder Lugs  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 5½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	3165	\$1.56	6000	85	\$1.82
10	2230	1.56	7000	78	1.82
25	1390	1.56	7500	77	1.82
50	1000	1.56	8000	75	1.82
100	700	1.56	10000	66	1.82
200	500	1.56	12000	63	1.82
250	440	1.56	12500	60	1.82
500	300	1.56	15000	56	1.82
750	250	1.56	20000	48	1.82
1000	215	1.56	25000	43	1.82
1500	175	1.56	30000	39	2.06
2000	155	1.56	40000	34	2.06
2500	135	1.56	50000	30	2.06
3000	129	1.56	60000	28	2.06
4000	105	1.56	75000	25	2.06
5000	95	1.56	100000	21	2.06

**TYPE 3½K—160-WATT**

DIMENSIONS..... 1½" x ¾" x 8½"  
TERMINALS..... Solder Lugs  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 8½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	5680	\$2.86	4500	185	\$2.86
10	4000	2.86	5000	180	2.86
25	2530	2.86	7500	145	2.86
50	1798	2.86	10000	125	2.86
75	1480	2.86	15000	105	3.45
100	1260	2.86	20000	90	3.45
200	900	2.86	25000	80	3.45
500	500	2.86	30000	67	3.45
1000	400	2.86	35000	57	3.45
1500	330	2.86	40000	50	3.45
2000	280	2.86	50000	40	3.45
2500	250	2.86	60000	33	3.90
3000	230	2.86	70000	28	3.90
3500	215	2.86	80000	25	3.90
4000	200	2.86	100000	20	3.90

**TYPE 6½M—80-WATT**

DIMENSIONS..... ¾" x ½" x 8½"  
TERMINALS..... Solder Lugs  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 7½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	4000	\$2.04	5000	122	\$2.04
10	2730	2.04	6000	112	2.41
25	1730	2.04	7500	100	2.41
50	1220	2.04	8000	98	2.41
100	885	2.04	10000	86	2.41
200	612	2.04	15000	70	2.41
250	545	2.04	20000	61	2.41
500	387	2.04	25000	55	2.41
750	316	2.04	30000	50	2.72
1000	274	2.04	50000	43	2.72
1500	223	2.04	60000	39	2.72
2000	193	2.04	60000	35	3.09
2500	173	2.04	75000	31	3.09
3000	158	2.04	100000	27	3.40
4000	137	2.04			

**TYPE 10½K—200-WATT**

DIMENSIONS..... 1½" x ¾" x 10½"  
TERMINALS..... Solder Lugs  
MAXIMUM RESISTANCE..... 100,000 ohms  
MOUNTING BRACKET..... Centers 11½"

Res. Ohms	Max. M.A.	List Price	Res. Ohms	Max. M.A.	List Price
5	6310	\$3.58	4500	210	\$3.58
10	4470	3.58	5000	200	3.58
25	2830	3.58	7500	165	3.58
50	2000	3.58	10000	140	3.58
75	1635	3.58	15000	115	4.29
100	1400	3.58	20000	100	4.29
250	900	3.58	25000	90	4.29
500	630	3.58	30000	82	4.29
1000	450	3.58	35000	71	4.29
1500	365	3.58	40000	62	4.29
2000	315	3.58	50000	50	4.29
2500	280	3.58	60000	42	4.29
3000	260	3.58	75000	33	4.29
3500	240	3.58	100000	25	4.29
4000	225	3.58			

## LECTROHM R. F. PLATE CHOKES

(1000 Milliamperes.)



Type	RFC-1	RFC-2	RFC-3	RFC-4
Amateur				20, 40
Band Meters	5	10 & 20	20 & 40	80 & 160
Microhenries	5.4	35	95	230
D. C. Ohms	0.85	2	5	9
Lgth. Overall	1½"	3"	6"	6½"
Diameter	¼"	½"	¾"	1"
List Price	\$0.33	\$1.04	\$1.56	\$2.16

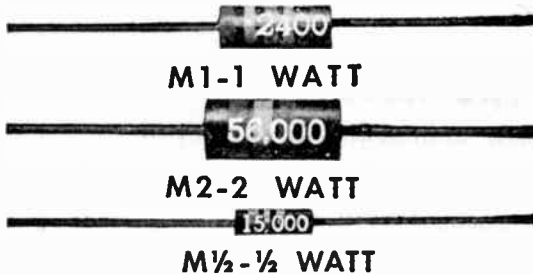
## LECTROHM INSULATED WIRE-WOUND RESISTORS—1 WATT

Ohms	Max. Current Mills.	Ohms	Max. Current Mills.	Ohms	Max. Current Mills.	Ohms	Max. Current Mills.
100	100	750	36				
125	89	800	35				
150	81	900	33				
175	76	1,000	31				
200	70	1,100	30				
250	63	1,200	29				
300	57	1,250	28				
350	53	1,500	25				
400	50	1,750	23				
500	44	2,000	22				
600	40	2,250	21				
700	37						
List Price, Each							\$0.33



## "CARBOMITE" M-TYPE RESISTORS

(Actual size as illustrated)



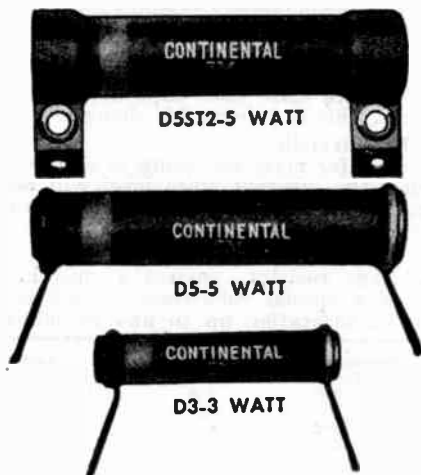
- Meet JAN-R-11 Army-Navy Specification
- Low Noise Level; Low Voltage Coefficient
- Stamped With Value
- Extra Small Size
- High Insulation 1000 volt Breakdown

Continental's New "CARBOMITE" bakelite insulated carbon composition resistors are now the standard of Electronic components used in the Radio and Electronic Industries. They meet all specifications of the joint Army-Navy-Jan-R-11 including the toughest of all tests the "Salt water immersion cycling." The "CARBOMITE" M type resistor consists of a solid molded carbon core, outer molded bakelite insulated shell and molded in leads. These resistors being well insulated can be mounted side by side or against any metal surface without shorting or grounding. They are recommended where space limits and insulating quality require a rugged, reliable and small resistor capable of withstanding severe service. The lead wires are straight and are tinned with a tin composition heavy enough to give instant soldering with the touch of the heated soldering iron tip. The resistor values are easily identified by the bright non-rubbing off color code bands and the white ink stamped numbers of the value on the body of the resistor.

The M2-2 watt, M1-1 watt and the M 1/2 - 1/2 watt are made in all the standard preferred RMA values as listed in the table below and are packed in quantities of 10 or 50 of each value to the box. Order in these quantities or multiples thereof.

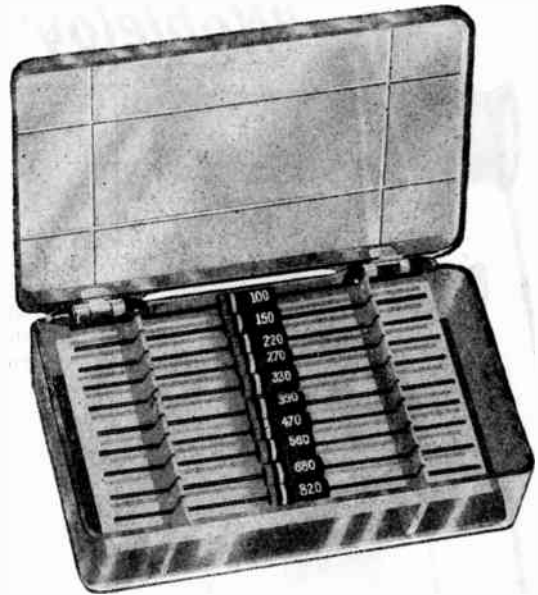
Type	Size	List Price	Tolerance
M 1/2	3/8" x 3/8" Dia.	\$0.33	5% 10%
M1	1/2" x 3/8" Dia.	.50	.25
M2	1/2" x 1/2" Dia.	.66	.33

## CONTINENTAL D-TYPE



## "POCKET-PAC" RESISTOR KITS

- De Luxe Clear Plastic Boxes
- Color Code in Each Kit
- Strongly Hinged Covers
- Values Stamped on Each Resistor



These "Pocket-Pac" Kit-Boxes are made of clear durable plastic. The contents can be easily seen thru the walls of the box. A Color Code Indicator and the Box are furnished free with each Kit.

### FORTY RESISTOR "POCKET-PAC" KIT VALUES

Ohms	Ohms	Ohms	Megohms	Megohms
100	1000	10,000	0.1	1.0
150	1500	15,000	.15	
220	2200	22,000	.22	2.2
270	2700	27,000	.27	
330	3300	33,000	.33	
470	4700	47,000	.47	4.7
560	5600	56,000	.56	
680	6800	68,000	.68	
820	8200	82,000	.82	10.0

"Pocket-Pac" Code No.	Quantity and Type	Box Size	List Price
40A	40 M 1/2 - 1/2 watt	4 1/2" x 2 3/4" x 1"	\$6.80
40B	40 M1 - 1 watt	4 1/2" x 2 3/4" x 1"	10.00
40C	40 M2 - 2 watt	7" x 3 1/2" x 1 1/4"	13.20
80D	40 M 1/2 plus 40 M1	7" x 3 1/2" x 1 1/4"	16.80
80E	2 ea. 40 values M 1/2	7" x 3 1/2" x 1 1/4"	13.60
80F	2 ea. 40 values M1	7" x 3 1/2" x 1 1/4"	20.00

- Heavy Duty Carbon
- Operate safely on overloads
- Non-inductive

The D-Type resistor with radial leads is made with solid molded carbon rods, copper sprayed on the ends to which are soldered No. 18 copper tinned leads. The soldered contact construction insures a noise-free and stable resistor. They are known as the heavy duty type units because of their size—having a larger radiating area they operate safely on overloads. A baked-on insulation is a protection against shorts to subpanel and wiring.

Type	Wattage	Size	List Price	Tolerance
D 3	3 Watt	2" x 3/8"	±5% \$0.60	±10% \$0.40
D 4	4 Watt	2 1/2" x 1/2"	.75	.50
D 5	5 Watt	3" x 3/8"	.80	.60
D 5S2*	5 Watt	3" x 1/2"	1.25	1.00

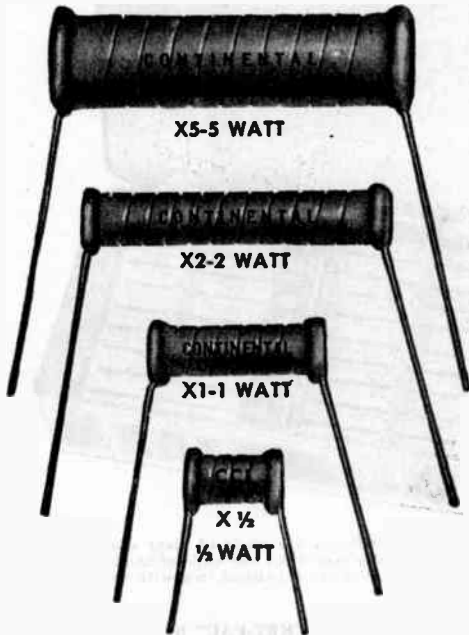
\* D5S2 units have heavy copper eyeletted and soldered strap terminals 3/8" wide with holes of 2 1/4" spacing. The outer holes can be used with either 6-32 screw mounting or solder wire loops, while the inner holes are for 8-32 screw mounting. The outer section of the terminal can be cut off or bent to any angle desired.





## "Nobleloy" X-Type Resistors

Trade Mark Reg.



- A new Continental Development!
- Not Wire Wound
- Not carbon!
- Stability of Wire Wound and Equivalent

After several years of research work CONTINENTAL engineers have developed a new resistor involving the metal film principle, having the accuracy of a wire wound unit. Absolutely no carbon whatever is used in the fabrication of these resistors. The metallic resistance film is formed on the surface of a low loss ceramic tube using a patented pyrochemic process.

The metal film thus formed is hermetically sealed by a layer of vitreous enamel specially developed and patented by CONTINENTAL. The ceramic tube with its associated film is then spiraled to give a long resistance path and to accurately calibrate the unit to value.

Since the ceramic tubes are hollow they allow a larger surface for heat radiation, thus permitting the resistor to withstand overloads of 200% or better.

The copper-tinned lead terminals are soldered to extremely low resistance metal contact films which in turn are integral with the resistance film, thereby reducing contact resistance to a minimum. This type of construction produces a resistor unit having not only excellent resistance stability but also a negligible noise characteristic.

### ELECTRICAL CHARACTERISTICS OF CONTINENTAL "NOBLELOY X" TYPE RESISTORS

#### Voltage

The recommended voltage rating of Continental "NOBLELOY X" type resistors is the maximum r.m.s. voltage which the resistor is expected to withstand in continuous use and is determined from the formula:

$$E = \sqrt{WR} \text{ Where } E = \text{rated D.C. or r.m.s. A.C. Voltage, } W = \text{watts rating, } R = \text{resistance.}$$

In no case shall the D.C. or r.m.s. A.C. voltage be greater than the maximum voltage shown in the table.

#### Load Characteristics

Irrespective of value, Continental "NOBLELOY X" type resistors will not change more than 5.0% when the load is increased from 2% of rated wattage to 200% of rated wattage, and on cooling to room temperature returns to the original value. This is practically the temperature coefficient effect.

#### Voltage Characteristics

Voltage coefficient does not exceed  $\frac{1}{16}$  of 1%.

#### Normal Load Life Characteristics (All Values)

The permanent change in resistance will not be more than 1.0% when the resistor is subjected to a normal life test of 1000 hours.

#### Overload Life Characteristics (All Values)

The permanent change in resistance will not be more than 2.0% when the resistor is subject to 200% of rated wattage for a period of 1000 hours.

#### Temperature Coefficient (All Values)

The temperature coefficient of resistance will not exceed 0.0005 (.05 per degree Centigrade) Negative.

#### Humidity Characteristics (All Values 1.0 Ohm to 15 Megohms)

Continental "NOBLELOY X" type resistors will not change more than 1.5% when conditioned in an atmosphere of 100% relative humidity at 40°C. ambient, for a period of 1000 hours.

#### Shelf Life

When stored under normal conditions, the resistance will not change more than 0.1% during a period of 2000 hours. This is a negligible change.

#### Noise Characteristic

When tested for noise according to standard R.M.A. procedure, the inherent noise level will not exceed  $\frac{1}{4}$  microvolt per volt, irrespective of resistance value. This level is equal to wire winds.

#### Finish

All "X" type resistors possess a smooth, uniform coating of a special rubberized enamel capable of resisting deterioration up to and including 400°F.

Type	Wattage	Size	Values	Recommended Voltage	Max. Voltage	List Prices	
						1%	5%
X-1/2	1/2 Watt	3/8" x 5/8"	1/2 ohm to 5 megohm	500	700	\$1.00	\$ .85
X-1	1 Watt	3/8" x 1"	1 ohm to 10 megohm	700	1000	1.00	.85
X-2	2 Watt	3/8" x 1 1/4"	2 ohm to 20 megohm	1000	1500	1.20	1.05
X-5	5 Watt	1/2" x 2"	3 ohm to 30 megohm	1250	2000	1.40	1.25

No. 18 tinned copper leads 1 1/2" long.

# SUPPRESSORS



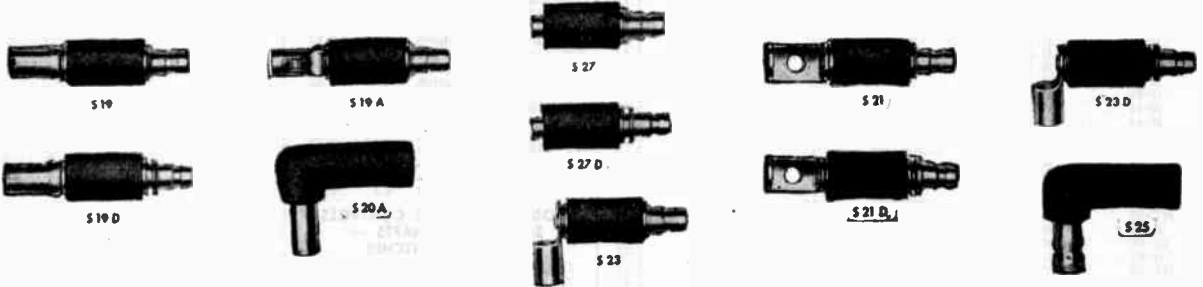
# SUPPRESSORS

**ALL SPARK PLUG SUPPRESSORS AND DISTRIBUTOR SUPPRESSORS EACH LIST PRICE \$0.30**

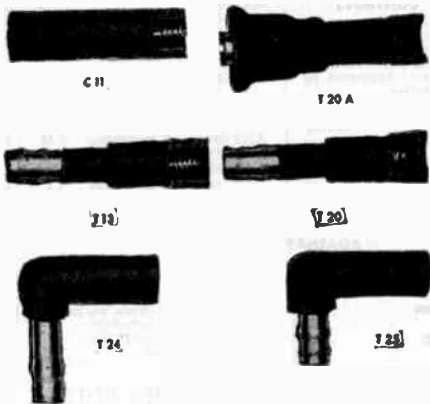
CONTINENTAL SUPPRESSORS have been subjected to years of laboratory development and actual road service. They effectively remove noise interference from spark discharge at the plugs and high-tension distributor—yet do not in any way affect the motor car ignition system.

They have mechanical strength to stand the most severe service. The resistance value of 10,000 ohms has been scientifically determined. Sparking across the terminals is eliminated by careful shaping of the electrodes and cases.

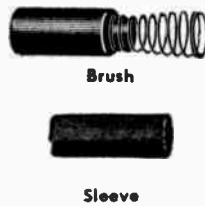
## SPARK PLUG SUPPRESSORS



## DISTRIBUTOR SUPPRESSORS



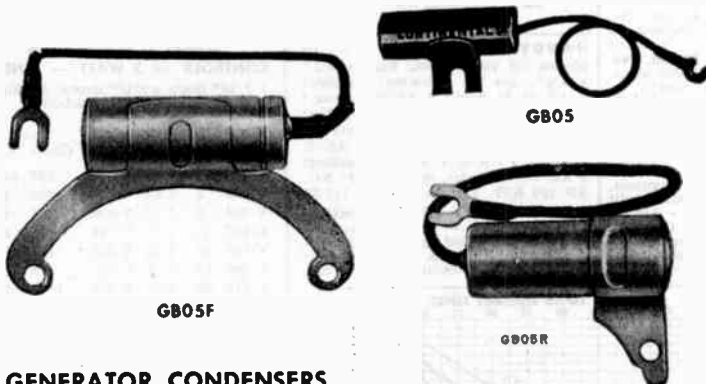
## FORD DISTRIBUTOR SUPPRESSOR



T-17: Brush and Sleeve Supplied Together  
 Distributor Type Brush Suppressor of the right resistance to suppress interference from the spark at the rotor.  
 Universal Type: the brush can be inserted in the bakelite sleeve to fit models using the larger size brush.

## SUPPRESSORS

Type No.	List Price Each
S-19, S-19D,	\$0.30
S-21, S-21D,	.30
S-23, S-23D,	.30
S-27, S-27D,	.30
S-25, S-19A,	.30
C-11, T-24,	.30
T-20, T-13,	.30
T-17, T-20A,	.30

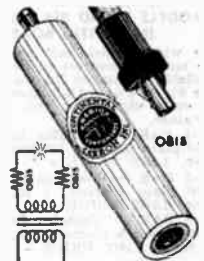


## GENERATOR CONDENSERS

Type	Application	Capacity	Size	List Price
GB05	Generator and coil	.5 mfd.	2 3/8" x 3/4"	\$0.75
GB05F	Ford V-8 coil 1936 Models	.5 mfd.	2 3/8" x 3/4"	1.00
GB05R	{ Ford Generator and coil Latest Models	.5 mfd.	2 3/8" x 3/4"	1.00

## OIL BURNER SUPPRESSOR

Filternoys Suppressor OB15, carbon element type, intended for use only with the high tension spark ignition of oil or gas burning heating systems. Must be connected in series with each line to the spark gap. Size of the suppressor 3 1/2" x 3/4" diameter. Universal connections at both ends for solderless contact.



OB15.....List Price \$1.80

### BLUE SHAFT RADIOHMS

A new line of modern carbon type controls,  $\frac{1}{8}$ " diameter. Distinctive blue shafts. Switch types are factory assembled and tested, for smoothest action and instant usefulness. Rating,  $\frac{1}{2}$  watt. Standard shafts, 3" universal fluted full length mill. Type BSK units have special  $2\frac{1}{2}$ " split knurl shafts. Switches are universal DPST, easily wired for SPST and 3-wire usage.

Cat. No.	Cat. No. Switch Type	Ohms Max. Resis.	Taper	List Price Plain	List Price Switch Type
B-4	B-4-S	500	C1	\$1.25	\$1.75
B-5	B-5-S	1,000	C1	1.25	1.75
B-6	B-6-S	2,000	C1	1.25	1.75
B-7	B-7-S	2,500	C1	1.25	1.75
B-8	B-8-S	3,000	C1	1.25	1.75
B-10	B-10-S	5,000	C1	1.25	1.75
B-11	B-11-S	5,000	C2	1.25	1.75
B-12	B-12-S	6,000	C5	1.25	1.75
B-14	B-14-S	10,000	C1	1.25	1.75
B-15	B-15-S	10,000	C2	1.25	1.75
B-16	B-16-S	10,000	C6	1.25	1.75
B-20	B-20-S	15,000	C8	1.25	1.75
B-22	B-22-S	20,000	C1	1.25	1.75
B-24	B-24-S	30,000	C6	1.25	1.75
B-26	B-26-S	25,000	C1	1.25	1.75
B-27	B-27-S	25,000	C5	1.25	1.75
B-28	B-28-S	25,000	C6	1.25	1.75
B-31	B-31-S	50,000	C1	1.25	1.75
B-32	B-32-S	50,000	C2	1.25	1.75
B-36	B-36-S	75,000	C1	1.25	1.75
B-40	B-40-S	100,000	C1	1.25	1.75
B-41	B-41-S	100,000	C2	1.25	1.75
B-44	B-44-S	150,000	C2	1.25	1.75
B-46	B-46-S	200,000	C1	1.25	1.75
B-50	B-50-S	250,000	C1	1.25	1.75
B-51	B-51-S	250,000	C2	1.25	1.75
B-52	B-52-S	250,000	C5	1.25	1.75
BT-53	BT-53-S	250,000	C11	1.85	2.35
BT-55	BT-55-S	250,000	C13	1.85	2.35
BT-57	BT-57-S	350,000	C12	1.85	2.35
B-59	B-59-S	500,000	C1	1.25	1.75
B-60	B-60-S	500,000	C2	1.00	1.50
B-61	B-61-S	500,000	C1	1.25	1.75
BT-65	BT-65-S	500,000	C11	1.85	2.35
BT-66	BT-66-S	500,000	C12	1.85	2.35
BT-67	BT-67-S	500,000	C13	1.85	2.35
B-68	B-68-S	1 Megohm	C5	1.25	1.75
B-69	B-69-S	1 Megohm	C1	1.25	1.75
B-70	B-70-S	1 Megohm	C2	1.00	1.50
BT-71	BT-71-S	1 Megohm	C11	1.85	2.35
BT-72	BT-72-S	1 Megohm	C12	1.85	2.35
BT-73	BT-73-S	1 Megohm	C13	1.85	2.35
BT-74	BT-74-S	1 Megohm	C18	1.85	2.35
B-75	B-75-S	2 Megohms	C1	1.25	1.75
B-76	B-76-S	2 Megohms	C2	1.25	1.75
B-77	B-77-S	2 Megohms	C5	1.25	1.75
BT-78	BT-78-S	2 Megohms	C11	1.85	2.35
BT-79	BT-79-S	2 Megohms	C12	1.85	2.35
BT-80	BT-80-S	2 Megohms	C13	1.85	2.35
BT-81	BT-81-S	2 Megohms	C15	1.85	2.35
BT-82	BT-82-S	2 Megohms	C18	1.85	2.35
B-83	B-83-S	2.5 Megohms	C1	1.25	1.75
B-84	B-84-S	3 Megohms	C1	1.25	1.75
B-85	B-85-S	3 Megohms	C2	1.25	1.75
B-86	B-86-S	4 Megohms	C1	1.25	1.75
B-87	B-87-S	5 Megohms	C1	1.25	1.75
B-98	B-98-S	10 Megohms	C1	1.25	1.75

### MODEL BSK — with Split Knurl Shafts, $2\frac{1}{2}$ " long

BSK-60	BSK-60-S	500,000	C1	1.10	1.60
BSK-70	BSK-70-S	1 Megohm	C2	1.10	1.60
BTSK-66	BTSK-66-S	500,000	C12	1.85	2.35
BTSK-72	BTSK-72-S	1 Megohm	C12	1.85	2.35

### MODEL BB TWIN RADIOHMS

Two B Radios mounted in tandem on a single shaft which rotates both sections. No switch types. Rating  $\frac{1}{2}$  watt. Shaft, 3" universal fluted full length mill.

Cat. No.	Ohms Max. Resis.	Taper	List Price
BB-100	10,000	C4	\$2.50
BB-101	10,000	C2	2.50
BB-102	100,000	C1	2.50
BB-103	250,000	C2	2.50
BB-104	500,000	C2	2.50

### HANDY PLASTI-PAKS MODELS B AND BSK CONTROLS IN PLASTIC BOXES

The widely used half megohm and one megohm controls of C2 taper are available in hinged lid plastic boxes, size  $8\frac{1}{2}$  x  $4\frac{1}{4}$  x  $1\frac{1}{4}$ " deep. There is no extra charge for this convenient container.

BP-1 PAK — Contains 12 Cat. No. B-60 plain controls, 500,000 ohms; C2 taper. LIST PRICE - - - \$12.00.

BP-2 PAK — Contains 12 Cat. No. B-70 plain controls, 1 megohm, C2 taper. LIST PRICE - - - \$12.00.

BP-3 PAK — Contains 12 Cat. No. B-60-S switch controls, 500,000 ohms; C2 taper. LIST PRICE - - - \$18.00.

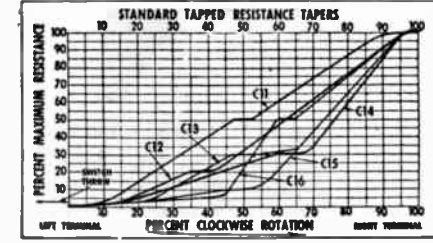
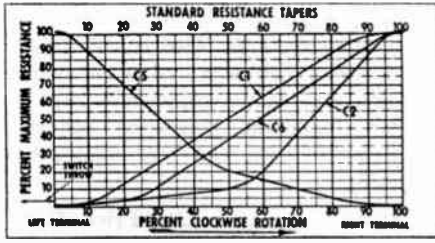
BP-4 PAK — Contains 12 Cat. No. B-70-S switch controls, 1 megohm, C2 taper. LIST PRICE - - - \$18.00.

BP-5 PAK — Contains 12 Cat. No. BSK-60 plain controls, 500,000 ohms, C2 taper, with split knurl shafts. LIST PRICE - - - \$18.20.

BP-6 PAK — Contains 12 Cat. No. BSK-70 plain controls, 1 megohm, C2 taper, with knurl shafts. LIST PRICE - - - \$18.20.

BP-7 PAK — Contains 12 Cat. No. BSK-60-S Switch Type Controls, 500,000 ohms, C2 taper with split knurl shafts. LIST PRICE - - - \$18.20.

BP-8 PAK — Contains 12 Cat. No. BSK-70-S Switch Type Controls, 1 megohm, C2 taper, with split knurl shafts. LIST PRICE - - - \$18.20.



### MODEL N RADIOHMS STANDARD 1 1/8" SINGLE CONTROLS

Popular, medium size control of the carbon type. Diameter 1-3/32 inch. Plain, no switch construction. Switches are available separately and can be attached easily. Rating  $\frac{1}{2}$  watt. Standard shafts 3" long, universal fluted full length mill.

Cat. No.	Ohms Max. Resis.	Taper	List Price
N-158	1000	C1	\$1.25
N-108	5000	C1	1.25
N-107	10000	C1	1.25
N-112	20000	C6	1.25
N-113	25000	C1	1.25
N-114	50000	C1	1.25
N-115	50000	C2	1.25
N-116	100000	C1	1.25
N-117	100000	C2	1.25
N-102	350000	C2	1.25
N-118	500000	C1	1.25
N-103	500000	C2	1.00
NT-120	500000	C13	1.85
NT-149	500000	C11	1.85
N-104	1 Megohm	C2	1.00
NT-150	1 Megohm	C12	1.85
NT-121	1 Megohm	C13	1.85
N-155	2 Megohms	C2	1.25
NT-151	2 Megohms	C15	1.85
NT-152	2 Megohms	C12	1.85
NT-122	2 Megohms	C13	1.85
NT-153	2 Megohms	C11	1.85
N-177	5 Megohms	C1	1.25
N-178	10 Megohms	C1	1.25

### MODEL NK SINGLE CONTROLS SPLIT KNURL SHAFTS — WITHOUT SWITCHES

Cat. No.	Ohms Max. Resis.	Taper	List Price
NK-140	500,000	C2	\$1.10
NK-141	1 Megohm	C2	1.10

### SWITCHES FOR MODELS N, NK AND AN CONTROLS

These switch units replace covers on controls and when attached are both firmly seated and positive in action. RATING — 3 amperes, 125 volts a.c.; 1 ampere, 250 volts a.c. Approved by Underwriters' Laboratories.

Cat. No.	Switch Action	List Price
K-155	Single pole, single throw	\$.50
K-156	Single pole, double throw	.65
K-157	Double pole, single throw	.65
K-158	Four point	.65
K-159	Single pole, single throw, dummy lug	.65

### ADASHAFT RADIOHMS BUY CONTROLS WITHOUT SHAFTS — ADD A SHAFT

Built in popular Model N construction, the basic control unit is furnished without a shaft. Select the required shaft from wide assortment, as listed. This new idea in controls offers flexibility and economy. By a unique mechanical arrangement, shafts can be almost instantly locked into the control. Adashaft controls can be converted to the switch type by adding switches as listed in column to the left. Rating,  $\frac{1}{2}$  watt. BE SURE TO ORDER SHAFTS SEPARATELY.

Cat. No.	Ohms Resis.	Taper	List Price
AN-5	1000	C1	\$1.00
AN-6	5000	C1	1.10
AN-7	2500	C1	1.10
AN-10	5000	C1	1.10
AN-11	5000	C2	1.10
AN-12	5000	C5	1.10
AN-13	6500	C1	1.10
AN-14	10,000	C1	1.10
AN-22	20,000	C1	1.10
AN-23	20,000	C5	1.10
AN-26	25,000	C1	1.10
AN-27	25,000	C5	1.10
AN-31	50,000	C1	1.10
AN-32	50,000	C2	1.10
AN-40	100,000	C1	1.10
AN-41	100,000	C2	1.10
AN-50	250,000	C1	1.10
AN-51	250,000	C2	1.10
AN-52	250,000	C5	1.10
AN-59	500,000	C1	1.10
AN-60	500,000	C2	.95
AN-61	500,000	C5	1.10
ANT-66	500,000	C12	1.70
AN-68	1 megohm	C5	1.10
AN-69	1 megohm	C1	1.10
AN-70	1 megohm	C2	.95
ANT-73	1 megohm	C13	1.70
AN-75	2 megohms	C1	1.10
AN-76	2 megohms	C2	1.10
AN-77	2 megohms	C5	1.10
ANT-78	2 megohms	C13	1.70
ANT-80	2 megohms	C18	1.70
AN-83	2.5 megohms	C1	1.10
AN-84	3 megohms	C1	1.10
AN-86	4 megohms	C1	1.10
AN-87	5 megohms	C1	1.10
AN-98	10 megohms	C1	1.10

Cat. No.	Description	List Price
AK-1	Fingertip Knurl with screwdriver slot, length $\frac{1}{8}$ " from bushing	\$.15
AK-2	1-9/16" with .078" Slot	.30
AK-3	3" Universal Fluted Mill	.15
AK-4	3 1/2" Split Knurl	.25
AK-5	3" Auto Type	.55
AK-6	6" Auto Type	.65
AK-10	10" With Flat Mill .216x4-5/16"	.30
AK-16	Coupler—adjustable for $\frac{1}{4}$ " and $\frac{3}{8}$ " or $\frac{1}{2}$ " and $3/16"$	.40
AK-18	Coupler—Insulating Auto Type Slotted	.30
AK-19	Insulating Nylon, 2-1/16" from bushing, with screwdriver slot.	.55

### HANDY ADASHAFT KIT — In hinged lid plastic box, 8 1/4" x 4 1/4" x 1 1/4", are the following: Controls: 6 AN-60 $\frac{1}{2}$ meg.; 3 AN-70 1 meg.; 1 ANT-66 $\frac{1}{2}$ meg. tapped. Switches: 4 K-155 SPST; 1 K-157 DPST. Shafts: 7 AK-4, 3 AK-3, 2 AK-1, 1 AK-2, 1 AK-5, 1 AK-19, Couplers: 2 AK-16. To order, specify CAT. NO. AN-100 KIT. List Price - - - \$17.50



### CENTRALAB TV REPLACEMENTS

Custom Controls — for exact replacements — are listed in Centralab Special Control Bulletin. Also available: Centralab TV Control Guide — 25c.

### MODEL V WIREWOUND CONTROLS — 3 WATT — LINEAR

1-7/16" diam. x 9/16" depth. 3" fluted mill shafts. Switches available.

Cat. No.	Ohms List	Cat. No.	Ohms List
V-100	2 \$1.25	V-121	100 \$1.25
V-102	4 1.25	V-123	200 1.25
V-104	6 1.25	V-125	300 1.25
V-106	8 1.25	V-126	400 1.25
V-108	10 1.25	V-127	500 1.25
V-109	15 1.25	V-128	750 1.25
V-110	20 1.25	V-129	1000 1.25
V-111	25 1.25	V-131	2000 1.25
V-112	30 1.25	V-133	3000 1.25
V-114	40 1.25	V-134	4000 1.25
V-116	50 1.25	V-135	5000 1.25
V-117	60 1.25	V-136	7500 1.25
V-118	75 1.25	V-137	10,000 1.25

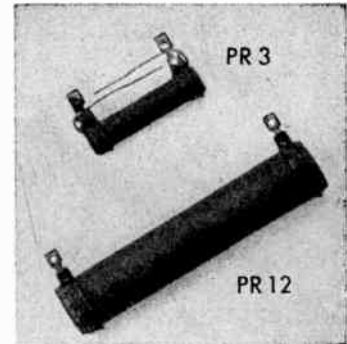
Cat. No.	MODEL V SWITCHES Action	List Price
K-10	Single pole, single throw	\$.60
K-11	Single pole, double throw	.75
K-12	Double pole, single throw	.75

# WIRT

## WIRE WOUND FIXED RESISTORS

### WIRE WOUND FIXED RESISTORS

To satisfy the most exacting needs of the Radio and Electronic Industries, Wirt Fixed Wire-wound Resistors are regularly furnished in PHENOCOTE protective coatings, developed and steadily improved over a period of many years in the Wirt Laboratories. The resistor wire is space wound on low loss ceramic tubes. The PHENOCOTE covering is an exclusive organic cement coating offering maximum protection to the resistance winding against the detrimental effects of moisture, humidity and electrolysis. Absolutely inert chemically, it will not effect the most delicate windings. It is particularly recommended for fine wire sizes and all applications where the maximum temperature of the unit will not exceed 300° F. These Resistors are universally used in the Radio, Electronic, Instrument, Public Address and Test Equipment fields.



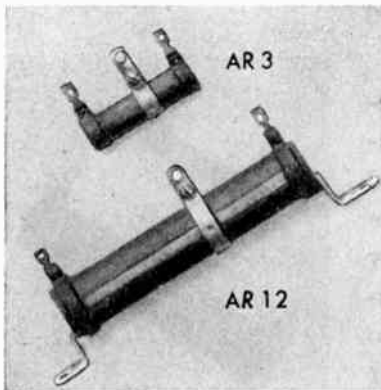
### TABLE OF SPECIFICATIONS OF FIXED RESISTORS

Cat. No.	Watts	Sizes Phys.	Resistance Limits (Ohms)	List Price (Ea.)	Accessories Terminals	Mounting Brackets	Mounting Centers	Packing
PR 1	5	3/8" x 1"	1 to 10000	\$0.53	Soldering Lugs & Wire Leads	None	.....	10 to a Box
PR 3	10	3/8" x 1 1/4"	1 to 10000 11000 to 25000	.59 .65	Soldering Lugs & Wire Leads	None	.....	10 to a box
PR 4	20	1/2" x 2"	5 to 15000 16000 to 50000 51000 to 100000	.91 1.11 1.43	Soldering Lugs & Wire Leads	None	.....	10 to a box
PR 12	50	3/4" x 4"	5 to 5000 5100 to 25000 26000 to 100000	1.56 1.82 2.08	Soldering Lugs	2	5"	Individual
PR 19	100	1 1/8" x 6 1/2"	5 to 5000 5100 to 25000 26000 to 50000 51000 to 75000 76000 to 100000	2.15 2.54 2.86 3.25 3.58	Soldering Lugs	2	7"	Individual
PR 22	160	1 1/2" x 8 1/2"	5 to 10000 11000 to 50000 51000 to 100000	2.86 3.43 3.86	Soldering Lugs	2	9"	Individual
PR 23	200	1 3/4" x 10 1/2"	5 to 10000 11000 to 100000	3.58 4.29	Soldering Lugs	2	11"	Individual

When ordering state: Quantity, Catalogue Number and Resistance Value.

# WIRT

## WIRE WOUND ADJUSTABLE RESISTORS



### WIRE WOUND ADJUSTABLE RESISTORS

WIRT Adjustable Resistors are space wound on low loss ceramic tubes to which the resistance wire is bonded, resulting in dependability and long life. Protection of the windings is afforded by the PHENOCOTE covering which is described fully on the preceeding page. One adjustable Slider Band, screw driver type, is furnished as standard. Bakelite knob type bands can be furnished on special order at slightly higher prices as shown below.

These bands are made with small contact buttons located on the inside of the band so that a number of taps may be made without shorting out excessive resistance.

### TABLE OF SPECIFICATIONS OF ADJUSTABLE RESISTORS

Cat. No.	Watts	Sizes Phys.	Resistance Limits (Ohms)	List Price (Ea.)	Accessories			Mounting Centers	Packing
					Terminals	Brackets Mounting	Slider Bands		
AR 3	10	3/8" x 1 3/4"	1 to 10000	\$0.98	Soldering Lugs	None	1	.....	Individual
AR 7	25	3/4" x 2"	1 to 5000	1.24	Soldering Lugs	2	1	3"	Individual
			6000 to 15000	1.43					
			20000 to 25000	1.56					
AR 12	50	3/4" x 4"	5 to 5000	1.95	Soldering Lugs	2	1	5"	Individual
			7000 to 25000	2.15					
			30000 to 50000	2.47					
			60000 to 100000	2.86					
AR 15	75	3/4" x 6"	10 to 5000	2.54	Soldering Lugs	2	1	7"	Individual
			7500 to 25000	2.86					
			30000 to 50000	3.25					
			60000 to 100000	3.58					
AR 19	100	1 1/8" x 6 1/2"	5 to 10000	2.86	Soldering Lugs	2	1	7"	Individual
			15000 to 50000	3.25					
			75000 to 100000	3.90					
AR 22	160	1 1/8" x 8 1/2"	5 to 10000	3.25	Soldering Lugs	2	1	9"	Individual
			15000 to 50000	4.15					
			60000 to 100000	4.65					
AR 23	200	1 1/8" x 10 1/2"	5 to 10000	4.29	Soldering Lugs	2	1	11"	Individual
			15000 to 100000	5.01					

Extra Adjustable Slider Bands are obtainable and priced as follows:

Wattage Size	Screw Driver Type	Bakelite Knob Type
10, 25, 50, 75	\$0.26	List Price Each \$0.39
100, 160, 200	.33	List Price Each .50

When ordering state: Quantity, Catalogue Number and Resistance Value.

# WIRT

## MINIATURE RHEOSTATS and POTENTIOMETERS

### MINIATURE RHEOSTATS AND POTENTIOMETERS

**General:** WIRT Metal Housed Rheostats and Potentiometers are rugged and compact affording high quality and dependability in operation. Due to size and construction these controls are moderately priced. Housings are made of tin-plated steel. Highest quality resistance wire is space wound on specially treated laminated phenolic strips. The Phosphor Bronze contact-arm is grounded to the metal casing and all terminals are silver plated. Switches cannot be furnished. These Rheostats and Potentiometers are adaptable to a wide variety of uses in the Radio Instrument, Electronic and Test Equipment fields. The types available are listed below:

**Cat. No. WC801**—Two Terminal Rheostat, 2 Watt rating. Resistance Range: 5 ohms to 10,000 ohms with linear winding and standard tolerance of  $\pm 15\%$ . Diameter is  $1\frac{1}{8}$ " and thickness  $\frac{1}{2}$ ". Shaft is Cadmium plated steel, grounded to housing.  $5/32$ " from end of bushing and slotted for screw driver adjustment. Brass mounting bushings,  $\frac{3}{8}$ "- $32 \times \frac{1}{4}$ " long are standard. Each control is equipped with one  $9/16$ " hex mounting nut. List Price..... \$0.90 Each

**Cat. No. WC802**—Three Terminal Potentiometer. 2 Watt rating. Resistance Range: 5 ohms to 10,000 ohms with linear winding and standard tolerance  $\pm 15\%$ . All other specifications are the same as these listed under the WC801 control shown above. List Price.....\$1.25 Each

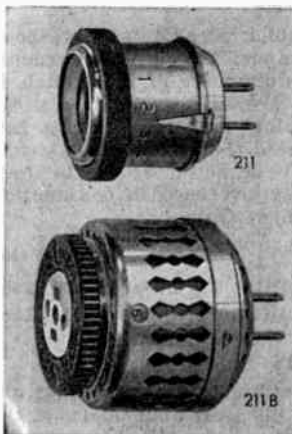
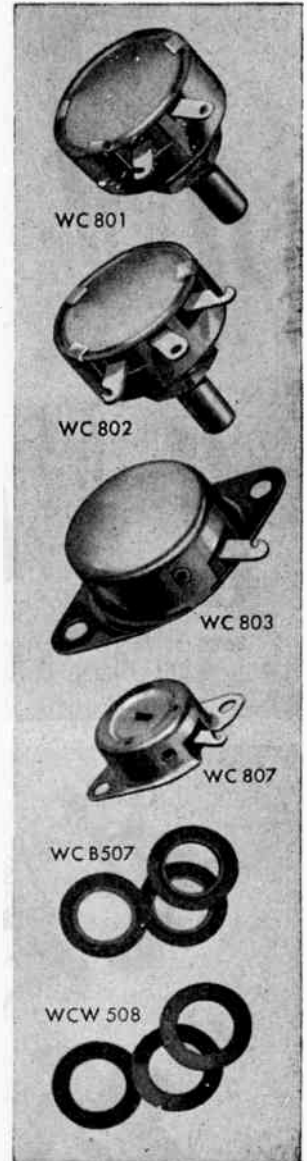
**Cat. No. WC803**—Sensitivity Control, 2 Watt rating. Resistance Range: 5 ohms to 12,000 ohms with linear winding and standard tolerance of  $\pm 15\%$ . Diameter is  $1\frac{1}{8}$ " and thickness is  $\frac{1}{2}$ ". A slot is provided in the Rotor mechanism allowing for screw driver adjustment from front only. List Price.....\$0.50 Each

**Cat. No. WC804**—Sensitivity Control. Identical with WC803 Control, except provided with an opening in back of control to permit screw driver adjustment from either front or back. List Price .....\$0.55 Each

**Cat. No. WC807**—Miniature Sensitivity Control, 1.5 Watt rating. Resistance Range: 5 ohms to 3000 ohms with uniform winding and standard tolerance of  $\pm 15\%$ . A slot is provided in the Rotor mechanism allowing for screw driver adjustment from either front or back. List Price.....\$0.50 Each

**Cat. No. WCB507**—Insulating Bushing for  $\frac{3}{8}$ " Brass bushing and used with Cat. Nos. WC801 and WC802 Controls. List Price..... \$0.95 Each

**Cat. No. WCW508**—Insulating Washer for  $\frac{3}{8}$ " Brass bushing and used with Cat. Nos. WC801 and WC802 Controls. List Price.....\$0.075 Each



### VARIABLE VOLTAGE REGULATOR

**Cat. No. 211** — Variable Voltage Regulator is wound with high quality alloy wire on an insulated metal core with the winding encased in Di-El-Itc. It can be used as a Radio Voltage Regulator where the Receiver draws not more than 65 watts. For industrial use it can be wound up to 600 ohms maximum and will dissipate up to 8 watts. It is adjustable to 5 positions. List Price .....\$3.00 Each

**Cat. No. 211-B**—Regulator has air-cooling features which promote rapid heat dissipation. When used as a Radio Voltage Regulator the Receiver must not draw more than 150 watts. In industrial use for control of voltage and to regulate speed or heat it can be wound with a maximum resistance of 300 ohms and can dissipate up to 20 watts with maximum resistance setting. It is adjustable to 8 positions. List.....\$5.00 Each

### UTILITY CABINET

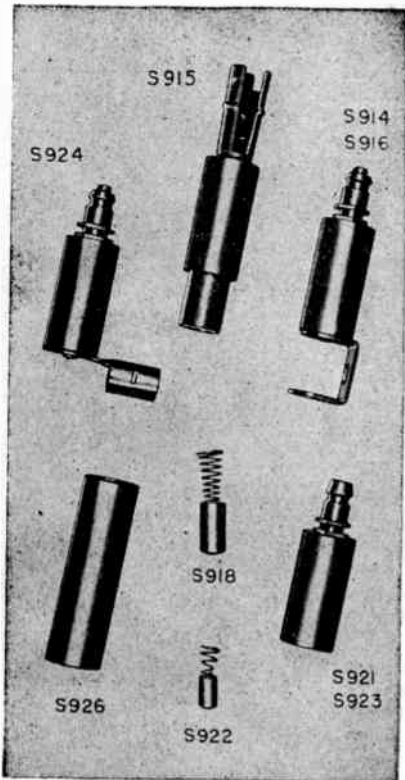
**Cat. No. UC**—Utility Cabinet is constructed of bass wood with corners dadoed and glued for strength; varnished and rubbed to give a beautiful finish. It has six drawers, each one having three removable partitions. The upper five drawers are 1" deep and the lower one is  $1\frac{1}{2}$ " deep. Overall dimensions of the cabinet are 7" wide by  $5\frac{1}{2}$ " deep by 9" high. Drawer guides, bottom and partitions are made of three ply laminated wood to prevent warping. Knobs are of wood and securely fastened. It is ideal for the storage of such parts as resistors, condensers, bolts, nuts, washers, small tools, etc. List.....\$8.00 Each



# WIRT

## SUPPRESSORS and SWITCHES

### AUTO RADIO IGNITION SUPPRESSORS



Wirt Suppressors are made with moulded black bakelite housings. All metal parts are made of rugged unfinished brass. Terminals are securely fastened to casings and sealed with special moisture and heat resisting dielectric cement. Resistor pills are sprayed with zinc and then double impregnated with a special moisture-proofing compound. Resistance value of all standard types is 10000 ohms  $\pm 20\%$ ; for FV8 types 50000 ohms  $\pm 20\%$ . The distributed capacity is less than 1.5 mmf. Resistance values will not change more than 7% after being submerged in water for 100 hours. Test by sparking 1800 times per minute at 10,000 volts for 100 hours produces resistance change of not more than 3%. Wirt Suppressors are impervious to heat, oil, moisture and mild acids, and will not change in resistance more than 10% in 50,000 miles of operation.

Cat. No.	Type	List Price
S914	Bracket—Standard	\$0.30 Each
S916	Bracket—For FV-8	.30 Each
S915	Distributor—Slip Fitting	.30 Each
S918	FV-8 Brush—Years 1933-34-35	.30 Each
S922	FV-8 Brush—Years 1936 to 1940	.30 Each
S921	Universal Screw—Standard	.30 Each
S923	Universal Screw—For FV-8	.30 Each
S924	Snap-on Plug	.30 Each
S926	Cable—Screw Fitting	.30 Each

### WIRT ROTARY AND SLIDE SWITCHES

#### Rotary Switches

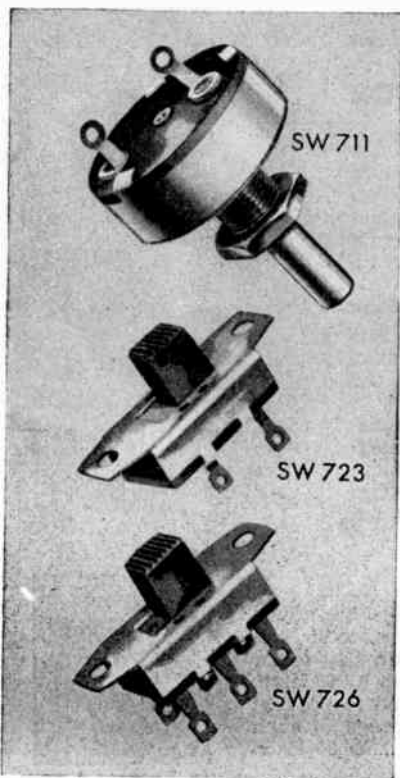
**General:** Wirt Rotary Switches are of the quick break type, have positive contact, are rugged and neat in appearance. They are constructed with tin plated steel housings. The outside diameter of the switch is  $1\frac{1}{8}$ " and thickness  $\frac{1}{2}$ ". Standard bushings are of brass,  $\frac{3}{8}$ "- $\frac{32}{64}$  x  $\frac{3}{8}$ " long. Steel shafts are  $\frac{5}{16}$ " from end of bushing, and made with a flat. Wiping contacts and terminals are silver plated. Terminals are securely fastened in place. Activating spring is positive in action. One  $\frac{9}{16}$ " hex. nut is furnished. These switches are successfully used in conjunction with Radio, Phonograph, Signal and Instrument Circuits.

Cat. No.	Type	List Price
SW711	—SPST Rotary Switch, 3A-125V-AC-DC 2 Terminals	\$0.90 Each
SW711A	—SPDT Rotary Switch, 3A-125V-AC-DC 3 Terminals	1.00 Each

#### Slide Switches

**General:** All Wirt Slide Switches are compact and sturdy. Housings are made of steel and are cadmium plated. The physical dimensions of the switches have been standardized, width  $\frac{35}{64}$ ", length  $1\frac{13}{32}$ " and mounting centers  $1\frac{1}{8}$ ". Standard buttons are of black bakelite. All contacts and terminals are silver plated. Switches SW723 and SW725 are supplied with a dot which indicates the "On" position. These switches are used in the Radio, Signal, Phonograph and Instrument industries.

Cat. No.	Type	List Price
SW723	—SPST Slide Switch, .75A-125V-AC-DC, 2 Terminals	\$0.31 Each
SW724	—SPDT Slide Switch, .75A-125V-AC-DC, 3 Terminals	.37 Each
SW725	—DPST Slide Switch, .50A-125V-AC-DC, 4 Terminals	.44 Each
SW726	—DPDT Slide Switch, .50A-125V-AC-DC, 6 Terminals	.55 Each





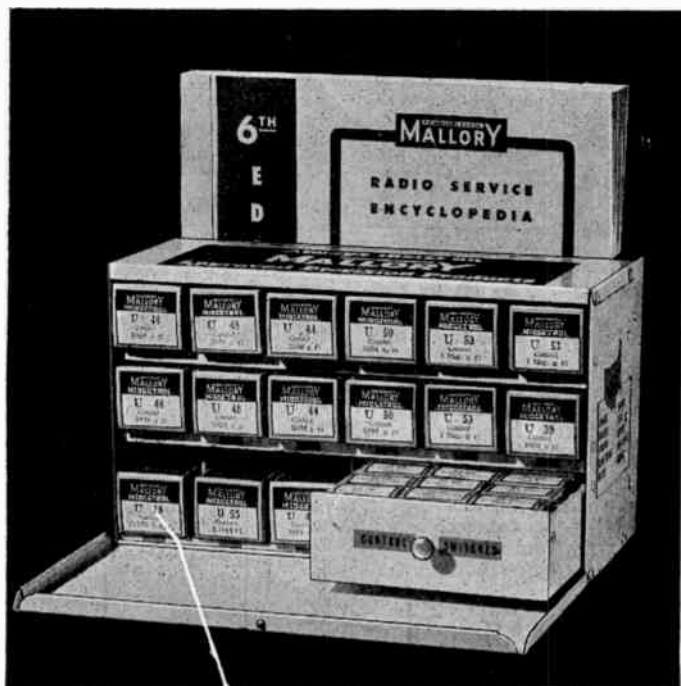


# MALLORY CONTROLS AND RESISTORS • LIST PRICES

★ Complete descriptions of these parts will be found on the following pages.

Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price	Mallory Cat. No.	List Price
<b>Mallory Page 11</b>		<b>Mallory Page 13</b>		<b>Mallory Page 14</b>		<b>Mallory Page 16</b>			
<b>Attachable Switches 1½" Dia. Controls</b>		<b>4 Watt - Wire-Wound Potentiometers and Rheostats</b>		<b>Adjustable Mounting Brackets</b>		<b>10 Watt - Fixed Vitreous Enamel Resistors</b>		<b>10HJ7500 to 10HJ10000 \$2.34</b>	
6-9	\$0.90	M1P	\$1.25	RB248	\$0.25	1HJ1 to 1HJ1000	\$0.58	10HJ15000 to 10HJ20000	2.56
6T	.75	M3P	1.25	RB249	.25	1HJ1100 to 1HJ5000	.63	10HJ25000 to 10HJ40000	2.76
7	.75	M6P	1.25	<b>Hexagon Shoulder Nuts</b>		1HJ6000 to 1HJ10000	.72	10HJ50000	2.90
8	.75	M10P	1.25			1HJ11000 to 1HJ20000	.80	10HJ75000	3.09
13	.75	M15P	1.25			1HJ22500 to 1HJ50000	.86	10HJ100000	3.26
14	.75	M20P	1.25					<b>80 Watt - Adjustable Vitreous Enamel Resistors</b>	
<b>Mallory Page 12</b>								8AV10 to 8AV10000 \$2.34	
<b>1 Watt - Carbon - Potentiometers</b>								8AV1500 to 8AV5000 2.42	
B5MP	\$1.25	M25P	1.25					8AV7500 to 8AV10000 2.56	
B10MP	1.25	M30P	1.25	<b>Mallory Page 15</b>				8AV15000 to 8AV20000 2.71	
B25MP	1.25	M40P	1.25	<b>Universal Extension Shafts</b>		<b>20 Watt - Fixed Vitreous Enamel Resistors</b>		8AV25000 to 8AV40000 2.98	
B50MP	1.25	M50P	1.25			2HJ5 to 2HJ1000 \$0.75		8AV50000 to 8AV60000 3.06	
B100MP	1.25	M60P	1.25			2HJ1250 to 2HJ5000 .78		8AV75000 to 8AV80000 3.34	
B250MP	1.25	M75P	1.25			2HJ6000 to 2HJ10000 .88		8AV100000	
B500MP	1.25	M100P	1.25			2HJ12500 to 2HJ20000 .94			
B1000MP	1.25	M200P	1.25			2HJ25000 to 2HJ40000 1.08			
		M400P	1.25			2HJ50000 to 2HJ75000 1.48			
		M500P	1.25					<b>10 Watt - Adjustable Vitreous Enamel Resistors</b>	
		M600P	1.25					1AV1 to 1AV1000 \$1.21	
		M1MP	1.40					1AV1250 to 1AV5000 1.28	
		M2MP	1.40					1AV6000 to 1AV10000 1.36	
		M3MP	1.40						
		M4MP	1.40					<b>25 Watt - Adjustable Vitreous Enamel Resistors</b>	
		M5MP	1.40					2AV1 to 2AV1000 \$1.59	
		M10MP	1.65					2AV1250 to 2AV5000 1.61	
		M15MP	1.65					2AV6000 to 2AV10000 1.73	
		M20MP	1.65					2AV12000 to 2AV20000 1.78	
		M25MP	1.65					2AV25000 1.92	
		M50MP	1.95						
		M70MP	1.95					<b>50 Watt - Adjustable Vitreous Enamel Resistors</b>	
		M05R	1.00					5AV5 to 5AV1000 \$2.06	
		M1R	1.00					5AV1500 to 5AV5000 2.11	
		M2R	1.00						
		M3R	1.00						
		M4R	1.00						
		M6R	1.00						
		M10R	1.00						
		M15R	1.00						
		M20R	1.00						
		M25R	1.00						
		M30R	1.00						
		M40R	1.00						
		M50R	1.00						
		M60R	1.00						
		M75R	1.00						
		M100R	1.00						
		<b>7 Watt - Wire-Wound Potentiometers</b>							
		E5MP	\$3.00						
		E10MP	3.00						
		E20MP	3.00						
		E25MP	3.25						
		E50MP	3.25						
		E75MP	3.25						
		E100MP	3.25						
		E125MP	3.25						
		E150MP	3.25						
		<b>Mallory Page 14</b>							
		<b>Shafts - Couplers - Bushings</b>							
		EC240	\$0.30						
		EC256	.30						
		EC257	.30						
		EB247	.25						
		UB241	.95 for 10						
		<b>Wrench for Volume Control Nuts</b>							
		178	\$0.25						
		<b>Mallory Page 16</b>							
		<b>5-Watt - Fixed Vitreous Enamel Resistors</b>							
		HHJ1 to HHJ1000	\$0.53						
		HHJ1100 to HHJ5000	.58						
		<b>Mallory Page 16</b>							
		<b>100 Watt - Fixed Vitreous Enamel Resistors</b>							
		10HJ25 to 10HJ1000	\$2.12						
		10HJ1500 to 10HJ5000	2.17						
		<b>Mallory Page 16</b>							
		<b>50 Watt - Adjustable Vitreous Enamel Resistors</b>							
		5AV5 to 5AV1000	\$2.06						
		5AV1500 to 5AV5000	2.11						
		<b>Mallory Page 16</b>							
		<b>Extra Adjustable Clips</b>							
		No. 1V	\$0.37						
		No. 3V	.37						
		No. 6V	.47						
<b>2 Watt - Wire-Wound - Potentiometers</b>									
C8P	\$1.25								
C10P	1.25								
C15P	1.25								
C20P	1.25								
C30P	1.25								
C40P	1.25								
C50P	1.25								
C100P	1.25								
C200P	1.25								
C400P	1.25								
C1MP	1.40								
C3MP	1.40								
C5MP	1.65								
C6MP	1.65								
C10MP	1.65								
C15MP	1.65								
C6R	1.00								
C10R	1.00								
C15R	1.00								
C20R	1.00								
C30R	1.00								
C40R	1.00								
C50R	1.00								
C60R	1.00								
C100R	1.00								

# MALLORY CONTROL DEALS



**You Get This Cabinet at no Extra Cost When You Purchase the Controls and Switches at Your Regular Discount**

● Treat yourself to a neat, heavy-duty stock cabinet, and simplify your inventory at the same time, with a Mallory Control Deal! Here's how:

You buy a carefully selected assortment of 15 fast-moving controls and 9 popular AC switches *all at your regular price*. Then, you get the handsome steel cabinet shown above *at no extra cost to you!* This cabinet contains 15 compartments for your controls, and a roomy drawer to hold your switches, extension shafts, idler pulleys and other accessories. A special built-in rack holds your Mallory Radio Service Encyclopedia which is purchased separately. And a hinged lid snaps shut to hold the controls in place during service calls.

When you use a Mallory Control Deal you get maximum coverage with minimum stock. In more than 9 out of 10 service jobs you will have *on hand* the control you need. And you can see at a glance which controls you immediately need to re-order.

Best of all—the revolutionary new Mallory Midgetrol is now available in a Mallory Control Deal. And a Mallory Midgetrol improves performance in *any set* where a 1½" control was originally used. With your Mallory Midgetrol Deal you get, in addition to the cabinet, extra spring clips, extra U-clips, extra idler pulleys and extra extension shafts. Get started today with the Mallory Midgetrol. Order your deal today!

## FAST-MOVING SELECTIONS OF MALLORY MIDGETROLS\* AND MALLORY 1½" CONTROLS

\*TRADE MARK

### MALLORY MIDGETROL SELECTION

(Order by Catalog Number U-1485)

4 U-48	1 U-55	2 UP-10
3 U-53	1 U-39	5 Extra Spring Clips
2 U-50	1 U-41	5 Extra U Clips
2 U-44	9 US-26	1 Web Removing Tool
1 U-18	4 UE-50	

### MALLORY MR SELECTION

(Order by Catalog Number R-1485)

4 MR-48	1 MR-18	5 M-26
3 MR-53	1 MR-55	3 M-27
2 MR-50	1 MR-39	1 M-28
2 MR-44	1 MR-41	

### MALLORY UM SELECTION

(Order by Catalog Number M-1485)

4 UM-154	1 UM-118	2 M-27
3 UM-161	1 UM-163	1 M-28
2 UM-147	1 UM-142	5 SS-25
2 UM-156	3 M-26	1 SS-14
1 UM-140		

**You will use your MALLORY CONTROL DEALS for all of these Radio Sets**

Admiral  
Air King  
Airline  
Allied  
Atwater Kent  
Belmont  
Brunswick-Mersman  
Cadillac

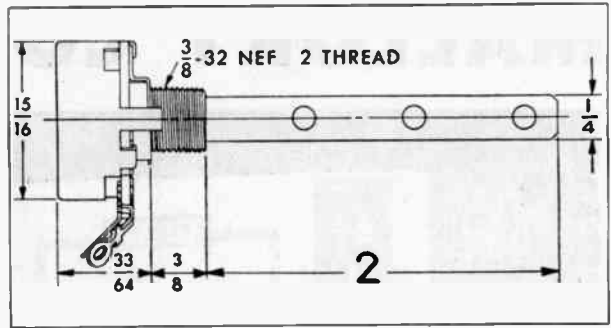
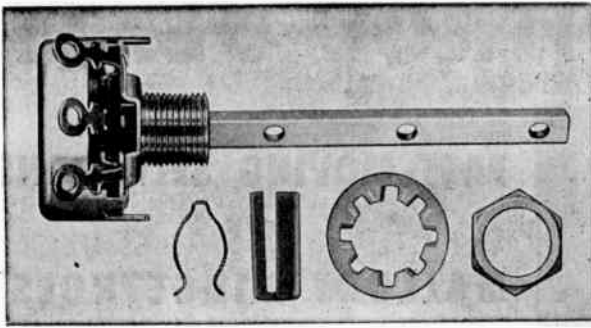
Capehart  
Chevrolet  
Colonial  
Continental  
Crosley  
Delco  
Detroit  
Dewald

Emerson  
Fada  
Fairbanks-Morse  
Halicrafter  
Motorola  
Patterson  
Philco  
Pilot

R.C.A.  
Scott  
Sears-Roebuck  
Sentinel  
Sonora  
Spiegel  
Stewart-Warner  
Stromberg-Carlson

Trav-ler  
Truetone  
United American Bosch  
Warwick  
Westinghouse  
Wilcox-Gay  
Zenith  
Zephyr

Mallory Page 3 (See Mallory Page 1 for List Prices)



# THE MALLY MIDGETROL\*

**APPLICATION:** For volume and tone control in audio circuits. Tapped controls provide tone compensation when required. Special controls are for use as recommended in the Mally Radio Service Encyclopedia.

**DESCRIPTION:** A very small diameter control ( $1\frac{5}{16}$ ) to service radio sets requiring small parts. Available in full line of resistances, tapers, and taps. Special resistance element gives ample safety factor for current-carrying ability. New type contact makes control smoothest and quietest on market by laboratory tests.

**SHAFT DESCRIPTION:** New Type flat shaft easily cut to any required length with a pair of side snips. Clips furnished with each control permits its use with all three knob types—Set Screw, Push-On, and Knurled.

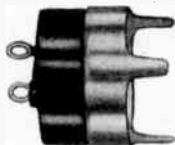
**ACCESSORIES:** One hex nut, one lock washer, one U-clip and one spring steel clip furnished with each control. Idler pulleys, extension shafts and AC switches are available when needed as listed hereon.

**PACKAGING:** One control plus accessories and complete instructions in each display carton.

Catalog Number	Resistance	Taper*
U-12	5M	1
U-14	5M	4
U-18	10M	1
U-19	10M	2
U-20	10M	4
U-21	15M	1
U-22	15M	2
U-24	20M	1
U-26	20M	4
U-28	25M	2
U-29	25M	4
U-33	50M	1
U-34	50M	2
U-35	50M	4
U-36	75M	1
U-39	100M	1
U-40	100M	2
U-41	100M	4
U-42	150M	1
U-43	200M	4
U-44	250M	1
U-45	250M	2
U-46	250M	4
U-48	500M	1
U-50	500M	4
U-51	750M	1
U-53	1 Meg.	1
U-54	1 Meg.	4
U-55	2 Meg.	1
U-56	2 Meg.	4
U-57	3 Meg.	1
U-59	3 Meg.	4
U-65	5 Meg.	1

\*See Taper Chart on Page 26.

## Attachable Mally Midgetrol Switches



Entirely designed and manufactured by Mally especially for use with Mally Midgetrols. Can easily and quickly be attached without disassembling control.

Catalog Number	Description
US-26	Single pole—single throw
US-26T	Single pole—single throw Has dummy terminal
US-27	Double pole—single throw
US-28	Single pole—double throw
US-23	Four pole—single throw, shorting

Can easily and quickly be attached without disassembling control.

## Accessories

**UE-50 Shaft**—Extends shaft length on each Mally Midgetrol an additional 4" with each extension. Two self-tapping screws furnished with each extension.

**UA-1 U-Clip**—To adapt flat shaft to set-screw and push-on knobs.

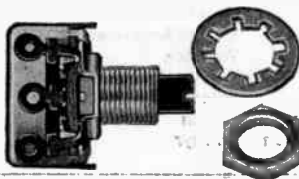
**UP-10 Pulley**—Fits over the Mally Midgetrol flat shaft to permit its use as an idler for the dial cord where necessary.

**UA-2 Spring Clip**—To adapt flat shaft to knurled knobs.

You can further increase the flexibility of your Mally Midgetrols by using the Universal Extension Shafts and Couplers shown on Mally pages 14 and 15.

Catalog Number	Resistance	Tap At
UT-420	250M	50M
UT-425	350M	70M
UT-427	500M	100M
UT-429	500M	50M
UT-431	500M	225M
UT-443	1 Meg.	450M
UT-450	2 Meg.	125M
UT-448	2 Meg.	250M
UT-454	2 Meg.	400M
UT-451	2 Meg.	900M

## MALLY MIDGETROLS FOR SPECIAL APPLICATIONS



● Special Mally Midgetrols for use as exact replacements. These Midgetrols meet exact physical and electrical requirements for special applications. Except for the shaft, these Midgetrols are of the same basic construction as the standard Midgetrol. A fixed, knurled, and slotted bakelite shaft protrudes  $\frac{1}{4}$ " beyond the bushing. The AC switches listed above will fit these Midgetrols.

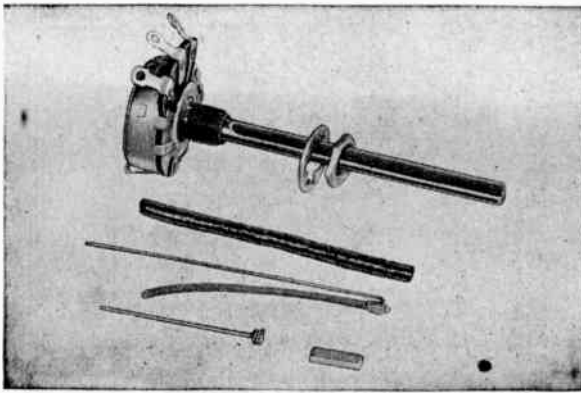
Type SUD-1253 is an exact replacement for use in Zenith radio model 28F20, having a concentric shaft with knurled and slotted end. Furnished complete with AC switch.

Cat. No.	Resistance	Taper*
SU-29	25M	4
SU-41	100M	4
SU-50	500M	4
SU-67	5 Meg.	4

\*See taper chart on page 26.

Cat. No.	Resistance	
	Front	Rear
SUD-1253	5M	1 Meg.

# MALLORY CARBON CONTROLS



## 1 1/2" Dia. • Fixed Shaft Controls

**APPLICATION**—For volume or tone control in audio circuits.

**DESCRIPTION**—1 1/2" carbon control, available in a wide range of resistances and tapers. Has an excellent safety factor in current-carrying capacity. Uses Mallory's special resistance element insuring a long, quiet life.

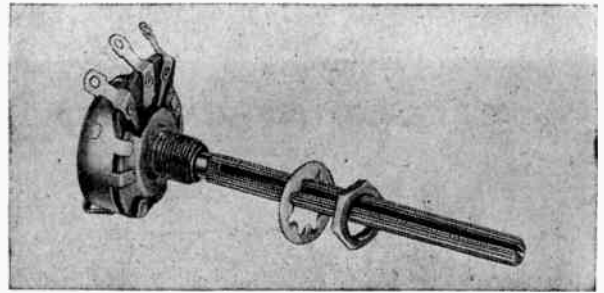
**SHAFT DESCRIPTION**—An accurately finished channel shaft is permanently attached; measures 3" from lock ring.

**ACCESSORIES**—One hex nut, one lock washer, and one shim is furnished with each control. An external adjustable resistor is furnished where required, as indicated below. AC switches are available as a special item. (See page 26).

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance	Taper	Catalog Number	Ohms Resistance	Taper
MR14	5M	4	MR39	100M	1
MR18	10M	1	MR40	100M	2
MR19	10M	2	MR41	100M	4
MR20	10M	4	MR42	150M	1
MR21	15M	1	MR44	250M	1
MR22	15M	2	MR45	250M	2
MR24	20M	1	MR48	500M	1
MR28	25M	2	MR50	500M	4
MR29	25M	4	MR51	750M	1
MR33	50M	1	MR53	1 Meg.	1
MR34	50M	2	MR55	2 Meg.	1
MR35	50M	4	MR57	3 Meg.	1
MR36	75M	1			
MR37	75M	2			

‡External adjustable resistor included



## 1 1/2" Dia. • Fixed Knurled Shaft Controls

**APPLICATION**—For volume or tone control in audio circuits.

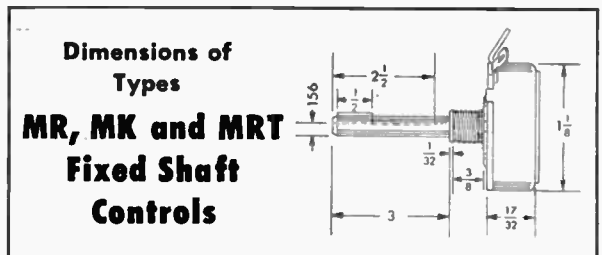
**DESCRIPTION**—1 1/2" carbon control using same element as type MR.

**SHAFT DESCRIPTION**—Furnished with a 3" accurately finished, permanently attached knurled shaft for use in replacing original controls of this shaft construction.

**ACCESSORIES**—One hex nut and one lock washer furnished with each control. AC switches available as a special item. (See page 26).

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance	Taper
MK400	250M	1
MK401	500M	1
MK402	1 Meg.	1
MK403	2 Meg.	1



★ ★ ★

## 1 1/2" Dia. • Fixed Shaft • Single Tapped Controls

**APPLICATION**—For control of volume with tone compensation in audio circuits.

**DESCRIPTION**—1 1/2" carbon controls with a single tap. Available in a wide range of resistances. Taps are accurately located. Uses Mallory's special resistance element insuring quiet, long life and an excellent safety factor in current-carrying capacity.

**SHAFT DESCRIPTION**—An accurately finished channel shaft is permanently attached; measures 3" from lock ring.

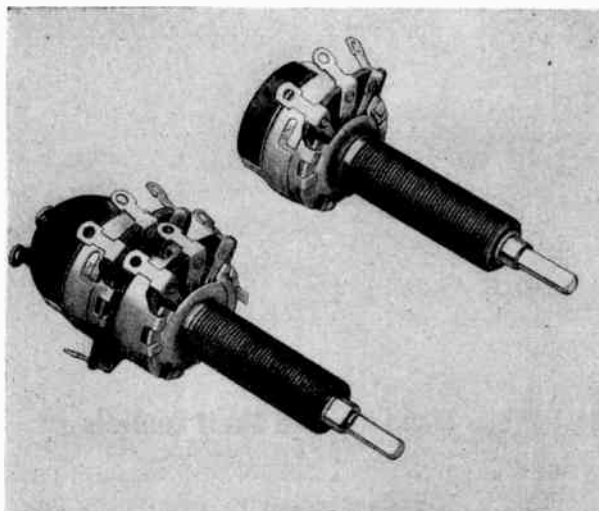
**ACCESSORIES**—One hex nut, one lock washer and one shim furnished with each control. AC switches available as a special item. (See page 26.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Overall Resistance	Tap Resistance	Catalog Number	Overall Resistance	Tap Resistance
MRT420	250M	50M	MRT460	1 Meg.	500M
MRT425	350M	70M	MRT445	2 Meg.	5M
MRT428	500M	5M	MRT446	2 Meg.	15M
MRT426	500M	15M	MRT447	2 Meg.	80M
MRT427	500M	100M	MRT450	2 Meg.	125M
MRT430	500M	150M	MRT448	2 Meg.	250M
MRT431	500M	225M	MRT454	2 Meg.	400M
MRT436	1 Meg.	125M	MRT449	2 Meg.	600M
MRT440	1 Meg.	200M	MRT451	2 Meg.	900M
MRT438	1 Meg.	300M			
MRT443	1 Meg.	450M			

Mallory Page 5 (See Mallory Page 1 for List Prices)

# MALLORY CARBON CONTROLS



(Illustrated: SMD508 Left—SM313 Right)

## 1 1/8" Dia. • Fixed Shaft • Special Application • Single & Dual Controls

**APPLICATION**—Special single and dual controls to be used as recommended in the Mallory Radio Service Encyclopedia.

**DESCRIPTION**—Type SM are single and type SMD are dual 1 1/8" diameter carbon controls. Both types are made in a wide range of resistances and tapers and with taps for special applications. The controls and their shafts are designed to exactly replace the original equipment control. Switches are provided as indicated.

**SHAFT DESCRIPTION**—Type SM have fixed shafts while type SMD have fixed concentric shafts except SMD509. Each shaft varies according to the requirements of the control and its recommended application.

**ACCESSORIES**—None.

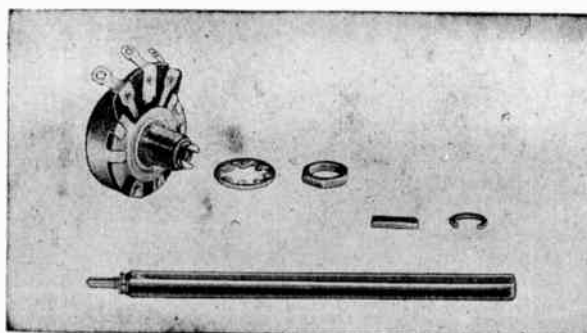
**PACKAGING**—One control per display carton.

Catalog Number	Ohms Resistance	Tap at
SM300†	350M	75M
SM301†	2 Meg.	500M
SM302†	500M	No Tap
SM303*	6Meg.	No Tap
SM304†	1 Meg.	200M
SM305†	1 Meg.	875M
SM306†	1 Meg.	550M
SM307*	2 Meg.	250M
SM308	1 Meg.	200M
SM309†	2 Meg.	600M
SM310	2 Meg.	125M
SM311†	1 Meg.	300M
SM312†	250M	No Tap
SM313†	250M	No Tap
SM316	350M	35M
SM317†	2.25 Meg.	500M & 1 Meg.

Catalog Number	Res. Front	Res. Rear	Tap At
SMD500†	2 Meg.	2 Meg.	No Tap
SMD501†	2 Meg.	1 Meg.	Front 500M
SMD502†	250M	1 Meg.	Rear 250M
SMD503†	2 Meg.	1 Meg.	Front 500M
SMD504†	250M	500M	Front 50M
SMD505†	250M	1 Meg.	Rear 300M
SMD506†	500M	1 Meg.	Rear 200M
SMD507†	500M	350M	Rear 70M
SMD508†	30M	1 Meg.	Rear 450M
SMD509†	2 Meg.	500M	Front 900M
SMD510†	1 Meg.	500M	Front 300M
SMD511†	1 Meg.	350M	Rear 70M
SMD512†	1 Meg.	350M	Rear 70M

†Includes SPST switch permanently attached to control.

\*AC Switch available as special item. (See page 26).



## 1 1/8" Dia. • Plug-In Shaft Controls

**APPLICATION**—For volume or tone control in audio circuits.

**DESCRIPTION**—1 1/8" carbon control, available in a wide range of resistances and tapers. Has an excellent safety factor in current-carrying capacity accomplished by the use of Mallory's special resistance element, which also insures a long, quiet life.

**SHAFT DESCRIPTION**—The control is provided with a socket which will take 30 different types of shafts insuring maximum flexibility of stock. One SS-1 4" channel shaft furnished with each UM control. (See page 26 for other universal and special plug-in shafts available.)

**ACCESSORIES**—One hex nut, one lock washer, one shim, one lock ring, and one SS-1 shaft furnished with each control. An external variable resistance is furnished where required, as indicated below. AC switches available as a special item. (See page 26.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

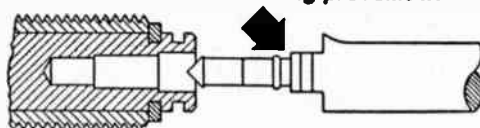
Catalog Number	Ohms Resistance	Taper	Catalog Number	Ohms Resistance	Taper
UM114 ‡	5M	4	UM144	150M	1
UM118 ‡	10M	1	UM147	250M	1
UM119 ‡	10M	2	UM150*		
UM120 ‡	10M	4			
UM121 ‡	15M	1	UM149	250M	4
UM122 ‡	15M	2	UM151	350M	1
UM124 ‡	20M	1	UM154	500M	1
UM128 ‡	25M	2	UM157*		
UM129 ‡	25M	4			
UM133 ‡	50M	1	UM156	500M	4
UM134 ‡	50M	2	UM158	750M	1
UM135 ‡	50M	4	UM161	1 Meg.	1
UM137 ‡	75M	1	UM162*		
UM138 ‡	75M	2	UM160	1 Meg.	2
UM140 ‡	100M	1	UM159	1 Meg.	4
UM143*			UM181 ‡	2 Meg.	Spec.
UM141	100M	2	UM163	2 Meg.	1
UM142	100M	4			
UM180 ‡	100M	Spec.	UM165	3 Meg.	1

\*Clutch type controls—no provision for attachable switch.

‡External adjustable resistor included.

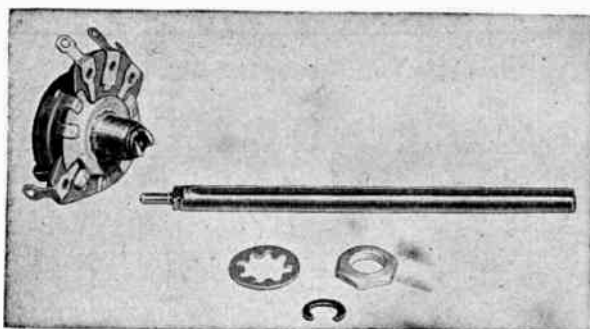
‡Right hand switch action.

**NO WOBBLE—this ring prevents it!**



All Mallory plug-in shafts are now made with a small ring as shown in the drawing above. That's why they can't wobble or work loose—why they fit as securely as a fixed shaft.

# MALLORY CARBON CONTROLS



## 1 1/8" Dia. • Plug-In Shaft • Single Tapped Controls

**APPLICATION**—For use as a volume control with tone compensation in audio circuits.

**DESCRIPTION**—1 1/8" carbon controls with a single tap. Available in a wide range of resistances. Taps are accurately located. Uses Mallory's special resistance element insuring quiet, long life and an excellent safety factor in current-carrying capacity.

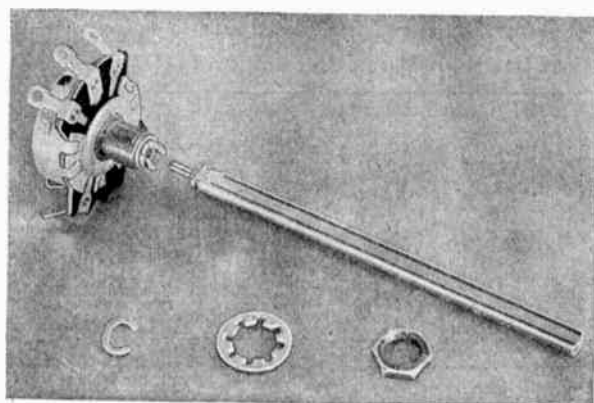
**SHAFT DESCRIPTION**—The control is provided with a socket which will take 30 different types of shafts insuring maximum flexibility of stock. One SS-1 4" channel shaft furnished with each TM control. (See page 26 for other universal and special plug-in shafts available.)

**ACCESSORIES**—One hex nut, one lock washer, one lock ring, one shim, and one SS-1 shaft furnished with each control. AC switches available as a special item. (See page 26.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Overall Resistance	Tap Resistance
TM220	250M	50M
TM221	250M	110M
TM222*		
TM225*	350M	70M
TM228*		
TM228	500M	5M
TM226	500M	15M
TM233	500M	60M
TM224*	500M	100M
TM227		
TM230	500M	150M
TM231	500M	225M
TM232*		
TM234	1 Meg.	65M
TM236	1 Meg.	125M
TM240	1 Meg.	200M
TM241*		
TM238	1 Meg.	300M
TM239*		
TM242*	1 Meg.	450M
TM243		
TM244	1.5 Meg.	200M
TM245	2 Meg.	5M
TM246	2 Meg.	15M
TM247	2 Meg.	60M
TM250	2 Meg.	125M
TM248	2 Meg.	250M
TM254	2 Meg.	400M
TM249	2 Meg.	800M
TM251	2 Meg.	900M
TM252*		
TM259	2 Meg.	1 Meg.
TM257	3 Meg.	900M
TM261	5 Meg.	1 Meg.

\*Clutch type controls—no provision for attachable switch.



## 1 1/8" Dia. • Plug-In Shaft • Double Tapped Controls

**APPLICATION**—For use as a volume control with tone compensation in audio circuits.

**DESCRIPTION**—1 1/8" carbon controls with double taps. The basic resistance element of this control is the same as the element in MR controls. Taps are accurately spaced.

**SHAFT DESCRIPTION**—The control is provided with a socket which will take 30 different types of shafts insuring maximum flexibility of stock. One SS-1 4" channel shaft furnished with each DTM control. (See page 26 for other universal and special plug-in shafts available.)

**ACCESSORIES**—One hex nut, one lock washer, one lock ring, one SS-1 shaft, and one shim furnished with each control. AC switches available as a special item. (See page 26.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Overall Resistance	Tap Resistance	
		Tap 1	Tap 2
DTM282	250M	50M	100M
DTM283	500M	100M	200M
DTM287	1 Meg.	50M	100M
DTM289	1 Meg.	250M	500M
DTM291	1.5 Meg.	225M	500M
DTM293	2 Meg.	5M	500M
DTM295	2.25 Meg.	250M	500M
DTM296	2.25 Meg.	500M	1 Meg.
DTM298	3 Meg.	100M	1.5 Meg.

## SPECIAL! MALLORY LITERATURE DEAL

See Mallory Literature Page  
for full information.

Mallory Page 7 (See Mallory Page 1 for List Prices)

# MALLORY PLUG-IN SHAFTS • ATTACHABLE SWITCHES

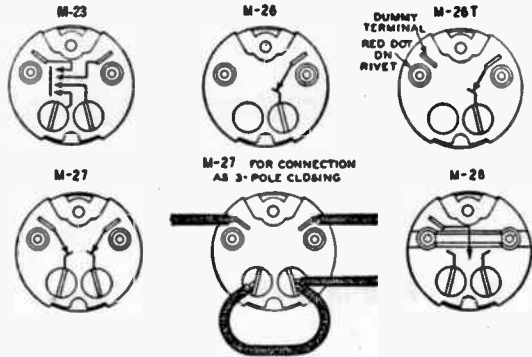
Universal and Special Plug-In Shafts  
for Use with Types UM, TM, and DTM Controls

Catalog Number	Catalog Number	Catalog Number
881	8815	8825
882	8816	8826
883	8817	8827
884	8818	8828
885	8819	8829
886	8820	8830
8810	8821	8831
8811	8822	8832
8812	8823	8833
8814	8824	8834

SS 1 ●● EXACTLY REPLACES ANY 1/4" ROUND SHAFT OR 1/32 OR 5/32 FLATTED SHAFT UP TO 4" LONG	SS 2 ●● RCA, UMS AND ANY 3/16" DIAMETER SHAFT UP TO 4" LONG
SS 3 ●● EXACTLY REPLACES ANY 3/32 SLOTTED SHAFT UP TO 2" LONG	
SS 4 ●● RCA PART NUMBERS 12240, 12385, ETC.	SS 5 ●● PHILCO 39, 37, 36 HOUSEHOLD RECEIVERS
SS 10 ●● MOTOROLA -60, 60, 36 GOLDEN VOICE, ETC.	SS 6 ●● RCA-HUDSON H6, ETC.
SS 11 ●● EXACTLY REPLACES ANY 3/32 SLOTTED SHAFT 2" TO 4" LONG	
SS 12 ●● PHILCO, UMS, ARVIN	SS 14 ●●
SS 15 ●● EXACTLY REPLACES ANY 3/32 SLOTTED SHAFT 4" TO 6" LONG	
SS 16 ●● EXACT FOR BENTINEL, CUT TO LENGTH FOR RCA AND OTHERS	
SS 17 ●● EXACTLY REPLACES ANY SLOTTED "INACUP" SHAFT UP TO 6" LONG	
SS 18 ●● BELMONT, STEWART-BURNER, ETC.	SS 19 ●● ALL 6537-39 MOTOROLAS
SS 20 ●● MOTOROLA MODEL 16G	SS 21 ●● MOTOROLA MODEL 17D
SS 22 ●● MOTOROLA AND MANY OTHERS	SS 23 ●● UNITED AMERICAN BOSCH MODELS 139, 140, 142
SS 24 ●● CHEVROLET MODEL 985425	SS 25 ●● EXACTLY REPLACES STANDARD KNURLED SHAFTS FROM 3/4" TO 6" LONG
SS 26 ●● ZENITH	SS 27 ●● PHILCO
SS 28 ●● MOTOROLA	
SS 29 ●● MOTOROLA	SS 30 ●● MOTOROLA
SS 31 ●● PHILCO	SS 32 ●● PHILCO
SS 34 ●● ZENITH	SS 33 ●● ZENITH

**KEY TO SHAFT CHART**—\*These Plug-In Shafts are designed as exact replacements for applications requiring a given predetermined length with special coupling slots or tongue or an insulated coupler. None of these require any cutting or special adjustment. \*\*These Plug-In Shafts are of universal length and designed for many applications.

## Attachable Switches for 1 1/2" Dia. Controls



For Use With MR, MK, UM, TM, MRT, DTM Controls

Catalog Number	Circuit Arrangement
M-26	Single-Pole—Single-Throw
*M-26T	Single-Pole—Single-Throw
M-27	Double-Pole—Single-Throw
M-28	Single-Pole—Double-Throw
M-23	Four-Pole—Single-Throw, Shorting

\*Has dummy terminal identified by red dot.  
Packaged one per display carton.

## Explanation of Mallory Tapers

● Taper Number 1 is a modified logarithmic left hand taper in the carbon type of control and an approximation to this logarithmic taper in the wire-wound type. This taper should always be used in shunt circuits, as in usual antenna and audio circuits, or where only the center and left hand terminals are used.

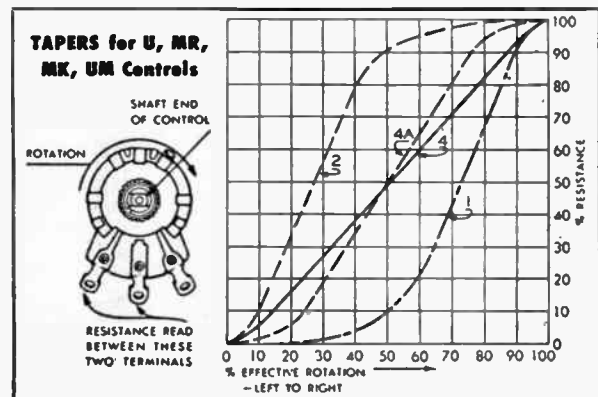
Taper Number 2 is a right hand logarithmic taper in the carbon and an approximation in the wire-wound type. Used in series circuits, as in cathode voltage controls, or where only the center and right hand terminals are used.

Taper Number 3 is a combination left and right hand taper. Has a limited use in circuits where the control must perform both as a shunt and as a series circuit control as in combination antenna shunt plus bias circuits. This is the most common use for such a taper.

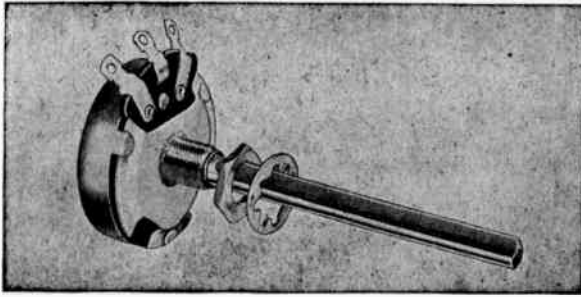
Taper Number 4 is a linear taper. Strictly speaking it is not a "taper" although commonly referred to as such. A linear "taper" is used wherever a control should be such that voltage change is proportional to the degree of rotation.

Taper Number 4A is a modification of the regular linear taper Number 4.

Taper Number 7 is made only in the wire-wound type of control and is a form of left hand taper. This taper is desirable for the antenna shunt plus bias control, wherein greater attenuation is obtained by increasing the bias voltage. The slight left taper then suffices to gradually reduce the signal to zero volume by the shunting action in the antenna circuit.



# MALLORY STANDARD CARBON CONTROLS



## 1 1/2" Dia. • Fixed Shaft • Carbon Controls

**APPLICATION**—For volume or tone control in audio circuits.

**DESCRIPTION**—1 1/2" carbon control made available in a range of resistances and tapers to satisfactorily cover the field. Mallory's exclusive element curing process is used in the manufacture of these controls, as well as in the 1 1/8" dia. line.

**SHAFT DESCRIPTION**—A fixed channel or slotted shaft is provided, measuring 3" from lock ring, except as indicated below.

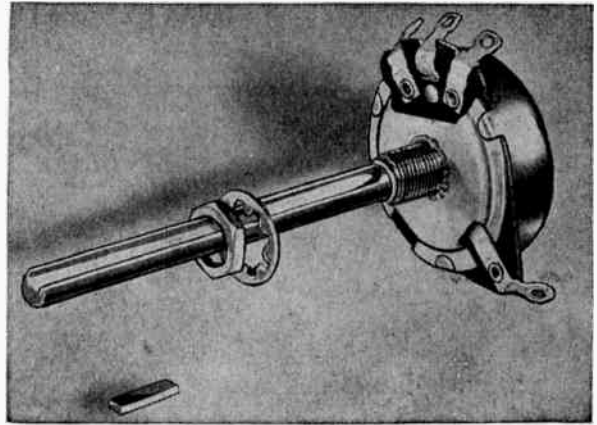
**ACCESSORIES**—One hex nut, one lock washer, and one shim furnished with each control. An external adjustable resistor is furnished where required, as indicated below. AC Switch available as special item. (See page 29.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance	Taper	Catalog Number	Ohms Resistance	Taper
Y5MP	5M	4	Y200MP	200M	4
F12‡	750M	1	M UC511†	250M	1
Y10MP	10M	4			
H12‡	15M	1			
Y‡	20M	1	UC503	750M	1
J‡	25M	2	UC514†	1 Meg.	1
Y25MP	25M	4			
K12	50M	1	UC504	3 Meg.	1
K‡	50M	2	UC505	4 Meg.	1
Z12	75M	1	UC506	5 Meg.	1
Z‡	75M	2	UC507	5 Meg.	2
UC510‡	100M	2			
UC502	150M	1			

‡External adjustable resistor included.

†Has slotted shaft for automobile receivers.



## 1 1/2" Dia. • Fixed Shaft • Single & Double Tapped Controls

**APPLICATION**—For volume control with tone compensation in audio circuits.

**DESCRIPTION**—1 1/2" carbon controls made available in a wide range of resistances, single and double tapped as indicated.

**SHAFT DESCRIPTION**—An accurately finished shaft is permanently attached, measuring 3" from lock ring.

**ACCESSORIES**—One hex nut, one lock washer, and one shim furnished with each control. AC switches available as a special item. (See page 29.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

### Single Tapped

Catalog Number	Overall Resistance	Tap Resistance	Catalog Number	Overall Resistance	Tap Resistance
TRP601	40M	8M	TRP610	1 Meg.	30M
TRP602	60M	4M	TRP608	1 Meg.	200M
TRP617	60M	12M	TRP609††	1 Meg.	500M
TRP623	250M	50M	TRP612	2 Meg.	15M
TRP603	250M	110M	TRP618	2 Meg.	250M
			TRP613	2 Meg.	400M
TRP604	350M	20M	TRP620	2 Meg.	900M
TRP605	350M	70M			
TRP614†			TRP615	3 Meg.	900M
TRP616	500M	60M			
TRP606	500M	100M			

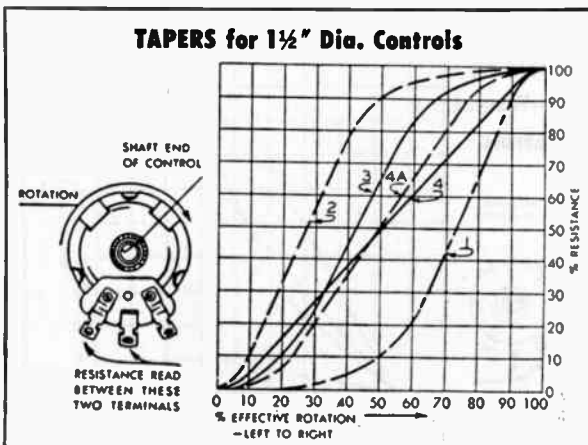
†Has slotted shaft for automobile receivers.

††Special taper for fader service.

### Double Tapped

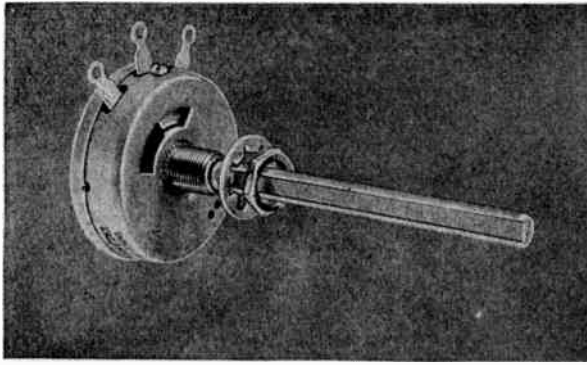
Catalog Number	Overall Resistances	Tap Resistance	
		Tap 1	Tap 2
TRP622	44M	7M	14M
TRP621†	2.25 Meg.	250M	500M
TRP624			

†No provision for switch.





# MALLORY SPECIAL CARBON AND WIRE-WOUND CONTROLS



(SRP262 Illustrated)

## 1½" Dia. · Fixed Shaft · Special Application Controls

**APPLICATION**—For special applications, as recommended in Mallory Radio Service Encyclopedia.

**DESCRIPTION**—1½" carbon or wire-wound controls, as indicated, available in a variety of resistances and constructions to meet the special requirements necessary in replacement, as recommended in Mallory Radio Service Encyclopedia.

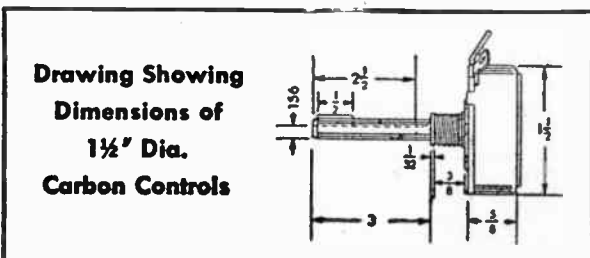
**SHAFT DESCRIPTION**—A special shaft is permanently attached. It is machined to the exact dimensions necessary to meet replacement requirements.

**ACCESSORIES**—One hex nut, and one lock washer furnished with each control.

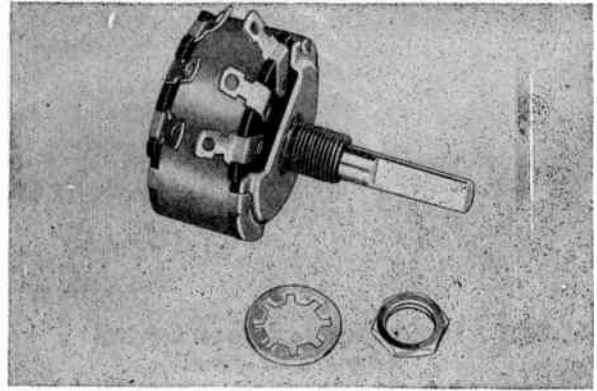
**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance	Type Element
SRP134	4500	W. W.
SRP142	2900	W. W.
SRP152	60	W. W.
SRP153	13M	W. W.
SRP154	50M	Carbon
SRP179	125M	Carbon
SRP185	1500	Carbon
SRP188	32M	Carbon
SRP239	450	W. W. Strip
SRP241	6M	W. W. Strip
SRP245	32M	Carbon
SRP251	350M	Carbon
SRP261	100M	Carbon
SRP262	1500	W. W.
SRP263	32M	Carbon
SRP269	10M	Carbon
SRP282	350M	Carbon
SRP286†	250M	Carbon
SRP289	50M	Carbon
SRP290	1 Meg.	Carbon
SRP900	20M	Carbon
SRP901	10M	Carbon
SRP960	800	W. W.
SRP961	10M	Carbon

†Right hand switch action.



Drawing Showing Dimensions of 1½" Dia. Carbon Controls



(DRP-250 Illustrated)

## Special Dual Controls

**APPLICATION**—For special applications, as recommended in Mallory's Radio Service Encyclopedia.

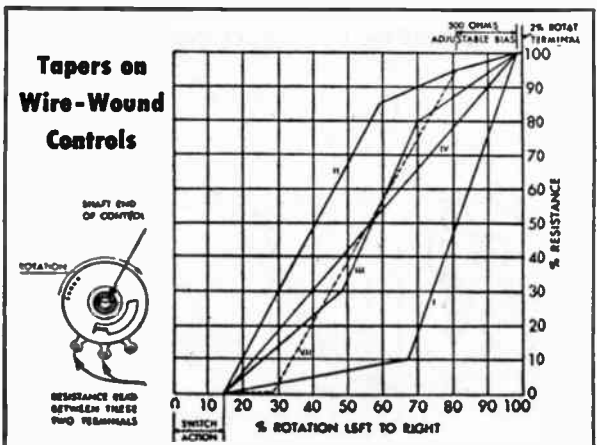
**DESCRIPTION**—Special controls of wire-wound and/or carbon construction available in a range of resistances and types as required by recommendations of Mallory Radio Service Encyclopedia. They are designed to provide exact physical and electrical characteristics of the original control.

**ACCESSORIES**—One hex nut and one lock washer furnished with each control.

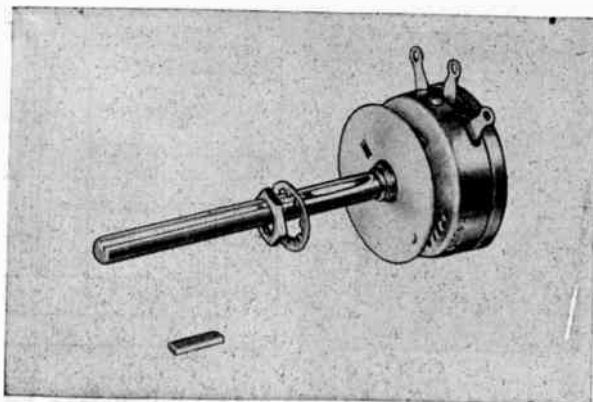
**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance		Type Element	
	Front	Rear	Front	Rear
DRP115	3800	3800	Carbon	Carbon
DRP116	25700	10000	W. W.	W. W.
DRP117	500	2500	W. W.	W. W.
DRP119	3M	10M	W. W.	W. W.
DRP122	645	10M	W. W.	W. W.
DRP169	7500	10M	W. W.	W. W.
DRP221	10M	100M	Carbon	Carbon
DRP232	75M	32M	Carbon	Carbon
DRP240	250M	10M	Carbon	Carbon
DRP244	25M	6M	Carbon	Carbon
DRP250	50M	1M	Carbon	Carbon
DRP302	100M	250M	Carbon	Carbon
DRP304	1 Meg.	3 Meg.	Carbon	Carbon
DRP306*	5M	10M	W. W.	Carbon
DRP311	150M	250M tapped 160M	Carbon	Carbon

\*Includes Switch.



# MALLORY WIRE-WOUND CONTROLS • 1½" ATTACHABLE SWITCHES



## 1½" Dia. • Fixed Shaft • Wire-Wound Controls

**APPLICATION**—Used as bias controls and voltage dividers in bridge circuits and test instruments.

**DESCRIPTION**—Rugged resistance strip and contactor assemblies are completely enclosed in a dust-proof case. Will carry 4 watts of power.

**SHAFT DESCRIPTION**—Furnished with a fixed channel-type shaft, measuring 3" from lock ring.

**ACCESSORIES**—Mallory Dial Plate No. 396 is available for use with these controls. One hex nut, one lock washer, and one shim furnished with each control. An external variable resistor is furnished where required, as indicated below. Has adjustable stop plate for bias feature, as indicated below. AC switches available as a special item. (See this page.)

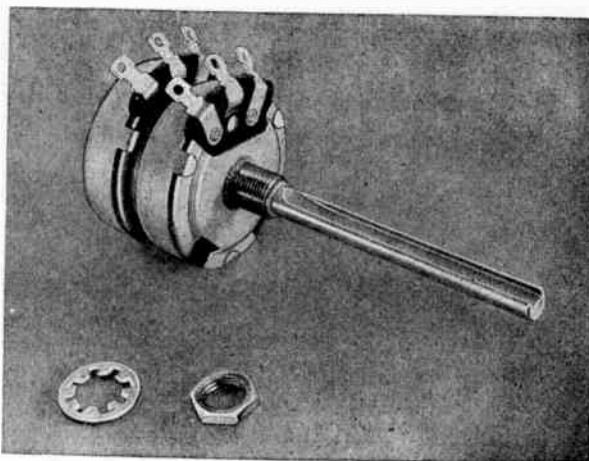
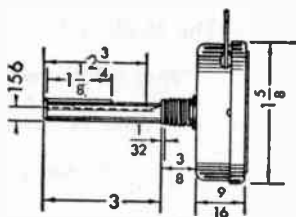
**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Catalog Number	Ohms Resistance	Taper	Catalog Number	Ohms Resistance	Taper
Q	2	4	D12 ‡	3000	1
R	6	4	D ‡	3000	2
S	10	4	A3MP ‡	3000	4
T	20	4	D7 ‡	3000	7
U	30	4	A4MP ‡	4000	4
V	60	4	E ‡	5000	2
W	100	4	A5MP ‡	5000	4
X	200	4	E7 ‡	5000	7
A400P	400	4	F ‡	7500	2
A	500	1	F7 ‡	7500	7
A550P	550	4	G ‡	10000	2
B	1000	1	A10MP ‡	10000	4
UC500	1000	2	G7 ‡	10000	7
A1MP	1000	4	H ‡	15000	2
C12 ‡	2000	1	H7 ‡	15000	7
C ‡	2000	2	A20MP ‡	20000	4
A2MP ‡	2000	4			

‡Have exclusive Mallory adjustable bias feature, providing 500 ohms in 100 ohm steps in all values over 1,000 ohms.

## Dimensions— 1½" Dia. Wire-Wound Controls

**NOTE:** Controls having taper numbers 1, 2 and 7 are intended primarily for replacement in radio receivers. Be sure to check the taper curve and its effect (see chart on page 28) before ordering for other uses.



(Type LL Illustrated)

## Universal Dual Controls

**APPLICATION**—See "General Use" column below.

**DESCRIPTION**—Consists of two 1½" Dia. wire-wound or carbon controls driven by a single shaft.

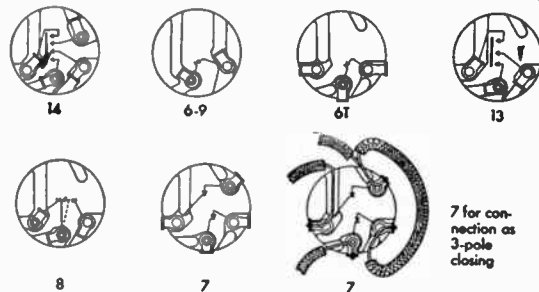
**SHAFT DESCRIPTION**—Furnished with fixed channel shaft; measuring 2½" from lock ring.

**ACCESSORIES**—One hex nut and one lock washer furnished with each control. AC switches available as a special item. (See this page.)

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

Cat. No.	Ohms Resistance		Taper		Type Element		General Use
	Front	Rear	Front	Rear	Front	Rear	
CE	2M	5M	I	I	W. W.	W. W.	Ant. Shunt and Bias
GE	10M	5M	VII	IV	W. W.	W. W.	
GG	10M	10M	VII	IV	W. W.	W. W.	Ant. Shunt Bias or Screen
GK	10M	50M	I	IV	Carbon	Carbon	Ant. Shunt Bias or Screen
LL	100M	100M	I	I	Carbon	Carbon	Audio Shunt in Push Pull
LM	100M	250M	I	I	Carbon	Carbon	Audio Shunt, Tone, Screen or RF Shunt
MM	250M	250M	I	I	Carbon	Carbon	Audio Shunt in Push Pull
NN	500M	500M	I	I	Carbon	Carbon	Audio Shunt in Push Pull

## Attachable Switches (1½" Dia. Controls)

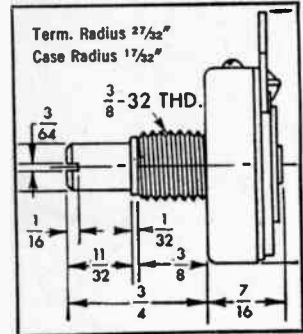
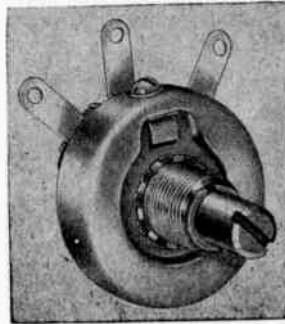
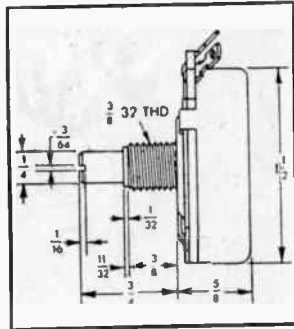
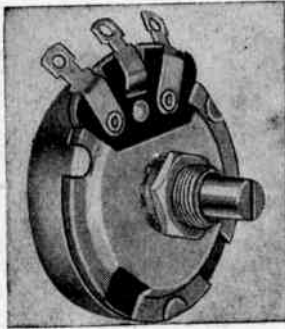


For use with standard Universal Controls, Carbon and Wire-Wound types, TRP Tapped Controls, and Universal Dual Controls.

- Cat. No. 6-9—Single-Pole—Single-Throw
- \*6T—Single-Pole—Single-Throw
- 7—Double-Pole—Single-Throw
- 8—Single-Pole—Double-Throw
- 13—Three-Pole—Single-Throw Shorting
- 14—Four-Pole—Single-Throw Shorting

\*Has dummy terminal identified by copper rivet. Packaged one per display carton.

# MALLORY VARIABLE POTENTIOMETERS • T & L PADS



## 1 Watt • Carbon • Potentiometers

**APPLICATION**—For use in test and other instruments, and special applications.

**DESCRIPTION**—1½" heavy-duty carbon-type control with a nominal one-watt rating. No. 4 linear taper.

**SHAFT DESCRIPTION**—A short shaft is provided with a milled screw-driver slot for easy and quick adjustment. Shaft will also take standard knobs.

**ACCESSORIES**—One hex nut furnished with each control.

**PACKAGING**—One control, plus accessories per display carton.

Catalog Number	Ohms Resistance
B5MP	5,000
B10MP	10,000
B25MP	25,000
B50MP	50,000
B100MP	100,000
B250MP	250,000
B500MP	500,000
B1000MP	1 Meg.

## 2 Watt • Wire-Wound • Potentiometers and Rheostats

**APPLICATION**—For use in test and special instruments, bias control and bridge circuits, etc.

**DESCRIPTION**—1½" diameter small resistor that will dissipate 2 watts over the entire element for continuous operation. No. 4 linear taper. Contact arm is grounded. Total rotation 284°; effective electrical rotation 266°.

**SHAFT DESCRIPTION**—A short shaft with a milled screw-driver slot is provided for quick and easy adjustment. Shaft will also take standard knobs.

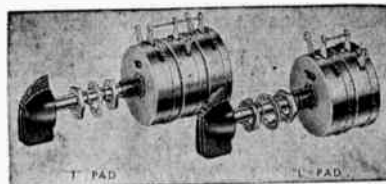
**ACCESSORIES**—Dial Plate No. 393 is available for use with these controls. One hex nut furnished with each control.

**PACKAGING**—One control, plus accessories per display carton.

Potentiometer Catalog Number	Rheostat* Catalog Number	Ohms Resistance	Carrying Capacity in Amps.
C6P	C6R	6	.58
C10P	C10R	10	.45
C15P	C15R	15	.37
C20P	C20R	20	.32
C30P	C30R	30	.26
C40P	C40R	40	.22
C50P	C50R	50	.2
C100P	C100R	100	.14
C200P		200	.1
C400P		400	.07
C1MP		1M	.045
C3MP		3M	.025
C5MP		5M	.02
C6MP		6M	.018
C10MP		10M	.014
C15MP		15M	.011

\*"Open" or "off" position counter-clockwise.

## T and L Pad Attenuators



**APPLICATION**—For controlling the level of low impedance audio circuits and for volume control of microphones, talking picture amplifiers, and many varied sound amplifying and audio distribution systems.

**DESCRIPTION**—A high quality "T" and "L" pad that may be used with audio amplifiers having a peak audio rating of 15 watts. These attenuators have a continuous DC dissipation rating of 4 watts in any position. Bushing ⅜" Dia. by ⅝" long.

**SHAFT DESCRIPTION**—2" long shaft, grooved at popular lengths for easy cutting.

**ACCESSORIES**—No. 366 Bar Knob, No. 395 Dial Plate with matched rotation, one nut and one lock washer furnished with each control.

**PACKAGING**—One control, plus accessories and complete instructions per display carton.

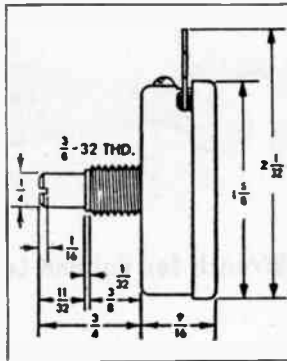
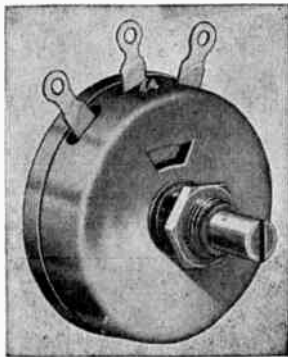
"T" Pad Attenuators Catalog Number	"L" Pad Attenuators Catalog Number	Ohms Impedance
T2	L2	2
T4	L4	4
T6	L6	6
T8	L8	8
T15	L15	15
T50	L50	50
T100	L100	100
T200	L200	200
T250	L250	250
T500	L500	500
T600	L600	600
T1000	L1000	1000
T2000	L2000	2000
T3000	L3000	3000

ASK YOUR DISTRIBUTOR ABOUT...

**"GOOD SERVICE FOR GOOD BUSINESS"**

The Mallory Business-Building Plan  
that effectively helps you get  
new customers and hold  
the ones you have!

# MALLORY WIRE-WOUND POTENTIOMETERS



## 4 Watt · Wire-Wound Potentiometers and Rheostats

**APPLICATION**—Used on bias controls and voltage dividers in bridge circuits and test instruments.

**DESCRIPTION**—Precision wire-wound potentiometers and rheostats with a 4-watt rating for use in instruments where reliability is paramount. Rugged construction. Rheostats feature “off” position (no connection) type of construction, saving the cost of a switch. Furnished with insulated contact arm. Potentiometers have three terminals. Rheostats have two terminals. Total rotation 294°; effective electrical rotation 279°. No. 4 Linear Taper.

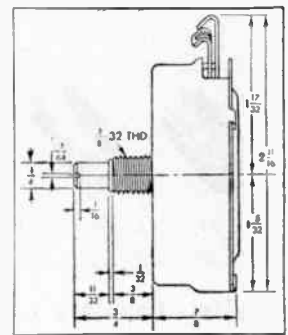
**SHAFT DESCRIPTION**—A short shaft is provided with a slot for easy screw-driver adjustment. Shafts will take standard knobs.

**ACCESSORIES**—No. 395 Dial Plate is available for use with these controls. One hex nut furnished with each control.

**PACKAGING**—One control, plus accessories per display carton.

Potentiometer Catalog Number	Rheostat* Catalog Number	Ohms Resistance	Carrying Capacity in Amps.
M1P	M05R	½	2.80
	M1R	1	2.00
	M2R	2	1.4
M3P	M3R	3	1.15
	M4R	4	1.00
M6P	M6R	6	.82
M10P	M10R	10	.63
M15P	M15R	15	.52
M20P	M20R	20	.45
M25P	M25R	25	.40
M30P	M30R	30	.37
M40P	M40R	40	.32
M50P	M50R	50	.28
M60P	M60R	60	.26
M75P	M75R	75	.23
M100P	M100R	100	.20
M200P		200	.14
M400P		400	.10
M500P		500	.09
M600P		600	.082
M1MP		1M	.063
M2MP		2M	.045
M3MP		3M	.037
M4MP		4M	.032
M5MP		5M	.028
M10MP		10M	.020
M15MP		15M	.016
M20MP		20M	.014
M25MP		25M	.013
M50MP		50M	.009
M70MP		70M	.0075

\*“Open” or “Off” position counter-clockwise.



## 7 Watt · Wire-Wound Potentiometers

**APPLICATION**—Suitable for precision instruments such as resistance bridges and where a control of medium currents or voltages is required.

**DESCRIPTION**—Supplied with grounded contact arm. 310° total rotation; 299° effective electrical rotation. Will dissipate 7 watts. No. 4 linear taper.

**SHAFT DESCRIPTION**—A short shaft with a milled screw-driver slot is provided for easy adjustment. Shafts will also take standard knobs.

**ACCESSORIES**—No. 399 Dial Plate is available for use with these controls. One hex nut is furnished with each control.

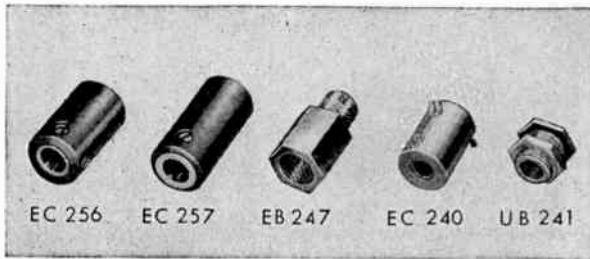
**PACKAGING**—One control, plus accessories per display carton.

Catalog Number	Ohms Resistance	Carrying Capacity in Amps.
E5MP	5M	.042
E10MP	10M	.03
E20MP	20M	.021
E25MP	25M	.019
E50MP	50M	.0135
E75MP	75M	.011
E100MP	100M	.0095
E125MP	125M	.0085
E150MP	150M	.0078

## MALLORY TECHNICAL MANUAL

● This simply written, practical book bridges the gap between radio theory and practice. Designed for the radio serviceman, engineer, amateur or experimenter who wants the latest technical information . . . presented so that he can easily apply it to everyday problems. Contains page after page of information profusely illustrated. It's worth far more than its price.

# MALLORY CONTROL HARDWARE



## Shafts • Couplers • Bushings

Cat. No.	Description
<b>EC240—Universal Combination Extension Shaft Coupling and Reducer:</b>	
	Will couple two $\frac{1}{4}$ " shafts or one $\frac{1}{4}$ " shaft and one $\frac{3}{16}$ " shaft.

**Universal Insulated Shaft Couplers:**  
Designed to connect fixed shaft controls to remote drive couplings popular in automotive radio equipment.

- EC256—Slotted Insacup.**
- EC257—Square Insert Insacup (Motorola type).**

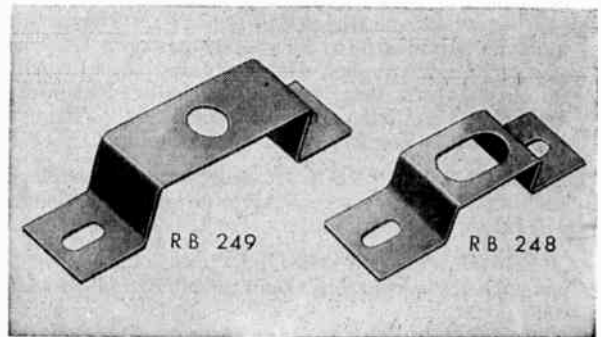
**EB247—Universal Extension Bushing:**  
Designed to screw on the present bushing of Mallory controls and switches, so that the body of the control or switch will be held  $\frac{5}{8}$ " away from the mounting surface. For example, it is used with the correct Universal Control to service Philco Models 28, 29, 45 and 45C.

**UB241—Universal Bushing and Nut:**  
Designed to accommodate  $\frac{1}{4}$ " shaft wherever a panel bushing is desired. Includes one No. 232 nut.



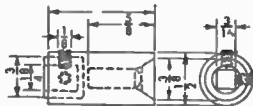
## Wrench for Volume Control Nuts

Cat. No.	Description
<b>178</b>	For all standard Volume Control Hexagon Nuts, $\frac{1}{2}$ -inch and $\frac{3}{16}$ -inch diameters.

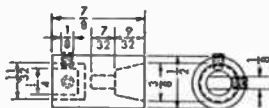


## Adjustable Mounting Brackets

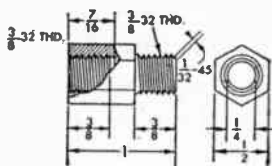
Cat. No.	Description
<b>RB248</b>	$1\frac{1}{4}$ " Mounting Centers
<b>RB249</b>	$2\frac{1}{2}$ " Mounting Centers



EC 257

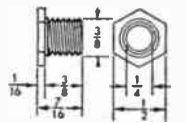


EC 256

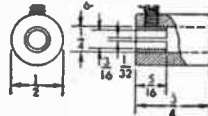


EB 247

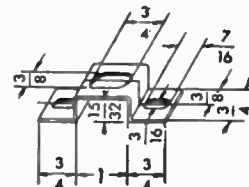
### DIMENSIONS— SHAFT COUPLERS AND BUSHINGS



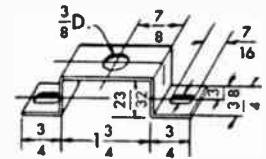
UB 241



EC 240



RB 248

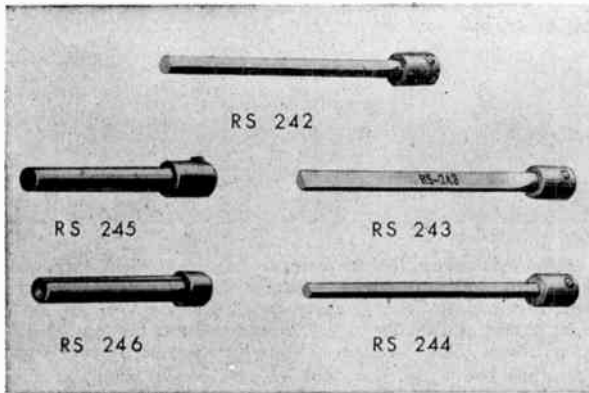


RB 249

## Hexagon Shoulder Nuts

Cat. No.	Description
<b>255</b>	For $\frac{1}{4}$ " Panels
<b>A11260-12</b>	For $\frac{1}{2}$ " Panels
<b>A11260-2</b>	For $\frac{3}{8}$ " Panels

# MALLORY CONTROL HARDWARE



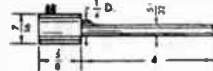
## Universal Extension Shafts

Cat. No.	Description
RS242*	4" long x 1/4" dia. x 1/32" flat
RS243*	4" long x 1/4" dia. x 3/32" flat
RS244*	4" long x 3/16" dia. x 1/64" flat
RS245*	2" long x 1/4" dia. with 3/32" slot
RS246*	2" long x 1/4" wide x 3/32" thick

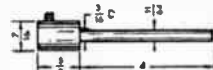
\*Packed 5 to Envelope.



No. RS 242

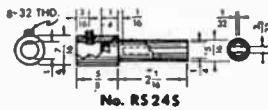


No. RS 243

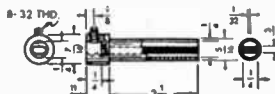


No. RS 244

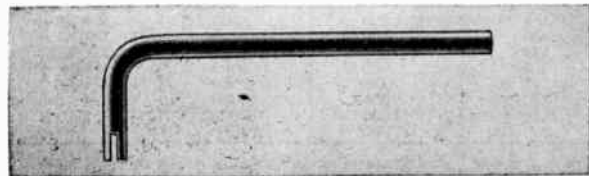
## SHAFT DIMENSIONS



No. RS 245

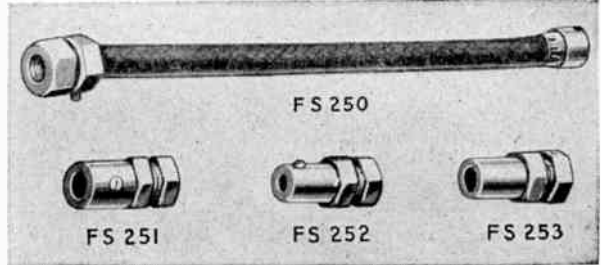


No. RS 246



## Web Removing Tool

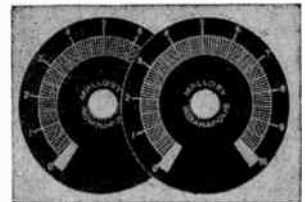
Cat. No.	Description
201	Special tool for removing web from web type knobs to adapt them for use with the Mallory Midgetrol.



## Universal Flexible Coupling Shafts

Cat. No.	Description
FS250	For Universal replacement of all flexible wire shafts, coupling to 1/4" solid shafts.
FS251	Shaft Coupling has 7/32" hole, 1/2" deep, with transverse pin, and is for use (with the correct Mallory control) as a replacement for Philco Models 805, 806, 808, 809 and PHD and PHXD, Studebaker AC266, Pierce-Arrow MT-3, Reo RT-3, etc.
FS252	Shaft Coupling has 1/2" hole, approximately 1/2" deep, and has 2 set screws opposite each other. It is used as a replacement for Philco Model D, Nash AC-989 (Code 122).
FS253	Shaft Coupling has 1/4" dia. hole, 1/2" deep, equipped with 2 screws at 90 degrees. This is to be used with the correct Mallory Control as a replacement for Chevrolet No. 364441.

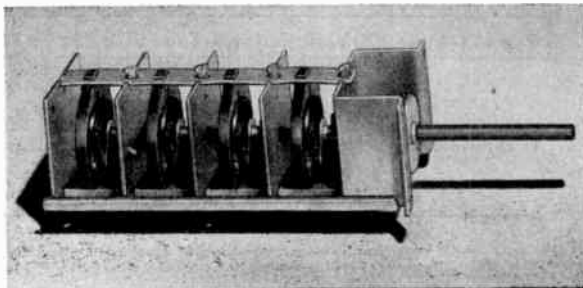
## Dial Plates For Controls, Rheostats and Potentiometers



Cat. No.	Marking	For Type of Control	Dia.
369	0 to 100	All Rheostats and Potentiometers (compromise scale) . . . . .	2 1/4"
391	Increase Volume	All Rheostats and Potentiometers . . . . .	1 1/2"
393	0 to 10	For "C" Type Rheostats and Potentiometers . . . . .	2 1/4"
396	0 to 10	For Standard Wire-Wound Controls with plain cover; also "M" Type Rheostats and Potentiometers . . . . .	2 1/4"
396	0 to 10	For Standard Wire-Wound Controls with switch type cover. . . . .	2 1/4"
397	0 to 10	For Standard Carbon Controls with plain cover . . . . .	2 1/4"
398	0 to 10	For Standard Carbon Controls with switch type cover . . . . .	2 1/4"
399	0 to 10	For "E" Type Potentiometers . . . . .	2 1/4"

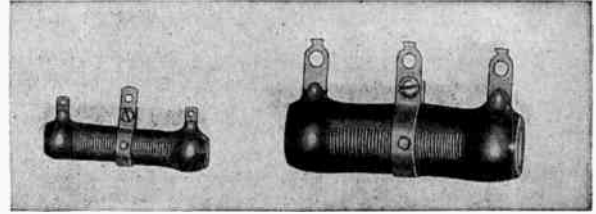
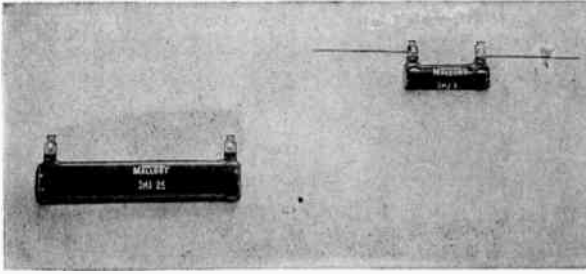
## THE MALLORY INDUCTUNER\*

A continuously and infinitely variable inductance unit that supplies the need for a method of tuning the wide range of frequencies covered by the television-FM band. Provides unequalled simplicity, performance, and stability in service. For more complete information turn to Page 9, Mallory Special Components, of this catalog.



Inductuner®—Registered trade mark for Mallory variable inductance tuning devices. Manufactured and sold under one or more of the following Paul Ware and Mallory patents: 2,163,644, 2,163,645, 2,163,646, 2,163,647, 2,260,877, 2,377,789, 2,377,790. Other patents applied for.

# MALLORY VITREOUS ENAMEL RESISTORS



● Mallory vitreous enamelled resistors, available in both fixed and adjustable styles, are fabricated from the finest of materials to assure long, stable operation in industrial, electrical and electronic applications. Each step in the manufacture of

a Mallory Vitreous Resistor is a carefully controlled scientific procedure assuring a highly uniform quality product. From the fine porcelain core, to the resistance element, to the terminal bands, and finally to the vitreous enamel coating, every precaution is taken to make a superior resistor for your use.

Listings below are standard values usually available for immediate delivery. Inquiries are invited from industrial resistor users for non-standard values not listed below.

Types HHJ, 1HJ and 2HJ are furnished with wire lead mounting. All other types are furnished with mounting feet.

## FIXED RESISTORS

### Type HHJ—5 Watt Rating—Tube Size $\frac{5}{16}$ " x 1"

Resistance Ohms	Resistance Ohms	Resistance Ohms	Resistance Ohms	Resistance Ohms
1	20	200	800	2500
1.5	25	250	900	3000
2	30	300	1000	3500
3	35	350	1100	4000
4	40	400	1200	4500
5	50	450	1250	5000
7.5	75	500	1500	
10	100	600	1750	
12	125	700	2000	
15	150	750	2250	

### Type 1HJ—10 Watt Rating—Tube Size $\frac{5}{16}$ " x 1 $\frac{3}{4}$ "

1	50	700	3500	14300
2	75	750	4000	15000
3	100	800	4500	16000
4	125	900	5000	17500
5	150	1000	6000	18000
7.5	200	1100	7000	20000
10	225	1200	7500	22500
12	250	1250	8000	25000
15	300	1500	8500	30000*
20	350	1750	10000	35000*
25	400	2000	11000	40000*
30	450	2250	12000	45000*
35	500	2500	12500	50000*
40	600	3000	13500	

### Type 2HJ—20 Watt Rating—Tube Size $\frac{1}{2}$ " x 2"

5	200	1500	4000	20000
10	250	1750	4500	25000
15	300	2000	5000	30000
25	400	2250	6000	35000
50	500	2500	7500	40000*
75	750	2750	10000	50000*
100	1000	3000	12500	75000*
150	1250	3500	15000	100000*

### Type 5HJ—50 Watt Rating—Tube Size $\frac{3}{4}$ " x 4 $\frac{1}{2}$ "

10	500	2500	15000	50000
25	750	5000	20000	75000
50	1000	7500	25000	100000
100	1500	10000	30000	
250	2000	12500	40000	

### Type 10HJ—100 Watt Rating—Tube Size 1 $\frac{1}{8}$ " x 6 $\frac{1}{2}$ "

25	250	2000	15000	50000
50	500	2500	20000	75000
75	750	5000	25000	100000
100	1000	7500	30000	
150	1500	10000	40000	

### Type 20HJ—200 Watt Rating—Tube Size 1 $\frac{1}{8}$ " x 10 $\frac{1}{2}$ "

25	500	2000	7500	40000
50	750	2500	10000	50000
75	1000	3000	20000	75000
100	1500	5000	30000	100000
250				

\*We stock these high resistance values only in the more economical low temperature enamel coating because operating voltages normally encountered rarely exceed the values listed.

## ADJUSTABLE RESISTORS

### Type 1AV—10 Watt Rating—Tube Size $\frac{5}{16}$ " x 1 $\frac{3}{4}$ "

Resistance Ohms	Resistance Ohms	Resistance Ohms	Resistance Ohms
1	75	750	4000
2	100	800	4500
3	150	1000	5000
5	200	1250	6000
7.5	250	1500	7000
10	300	2000	7500
15	350	2250	8000
20	400	2500	8500
25	500	3000	9000
50	600	3500	10000

### Type 2AV—25 Watt Rating—Tube Size $\frac{5}{8}$ " x 2 $\frac{1}{8}$ "

1	100	1000	5000
3	150	1250	6000
5	200	1500	7500
10	250	2000	10000
15	300	2500	12000
25	400	3000	15000
50	500	3500	20000
75	750	4000	25000

### 50 Watt Rating—Tube Size $\frac{3}{4}$ " x 4 $\frac{1}{2}$ "

5	250	2500	20000
10	300	3000	25000
25	400	4000	30000
50	500	5000	40000
75	750	7500	50000
100	1000	10000	
150	1500	12000	
200	2000	15000	

### Type 8AV—80 Watt Rating—Tube Size $\frac{5}{8}$ " x 6 $\frac{1}{2}$ "

10	400	3500	30000
15	500	5000	40000
25	750	7500	50000
50	1000	10000	60000
100	1500	15000	75000
250	2000	20000	80000
300	2500	25000	100000

### Type 10AV—100 Watt Rating—Tube Size 1 $\frac{1}{8}$ " x 6 $\frac{1}{2}$ "

50	2500	10000	35000
100	3000	15000	40000
500	4000	20000	50000
1000	5000	25000	75000
2000	7500	30000	

### Type 20AV—200 Watt Rating—Tube Size 1 $\frac{1}{8}$ " x 10 $\frac{1}{2}$ "

50	1500	10000	50000
100	2000	20000	75000
500	2500	25000	
1000	5000	30000	

All adjustable types furnished with one adjustable clip, bolt and nut.

### Extra Adjustable Clips

Type No. 1V—For 10-Watt Variohms\*

Type No. 3V—For 25, 50, and 80-Watt Variohms

Type No. 6V—For 100 and 200-Watt 1  $\frac{1}{8}$ " Variohms

\*Reg. U.S. Pat. Off.

WHEN ORDERING GIVE TYPE NUMBER AND RESISTANCE RATING. EXAMPLE: HHJ1

Mallory Page 16 (See Mallory Page 2 for List Prices)

**AUTOMATIC**

# AMPERITE

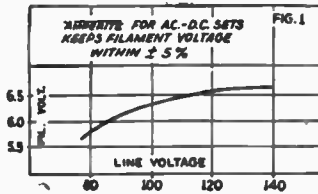
**REGULATOR**

**BALLAST TUBE FOR AUTOMATIC REGULATION OF CURRENT AND VOLTAGE**



AMPERITE is an automatic rheostat designed to keep the current in a circuit at a definite value, for example, 0.5 amps. Should the supply voltage increase, the Amperite will automatically increase in resistance enough to take up the increase in supply voltage — keeping the voltage on the load constant.

## A. C. - D. C. SETS



For A.C.-D.C. Sets  
The Amperite Regulators are designed to pass only 0.3A through tube filaments. Filament voltages will be kept within ± 5% with line voltage variations of 85 to 140 volts. Due to the fact that Amperite is a real regulator, 2 types of Amperite with four prongs and 2 with octal bases will replace 150—90% of all—

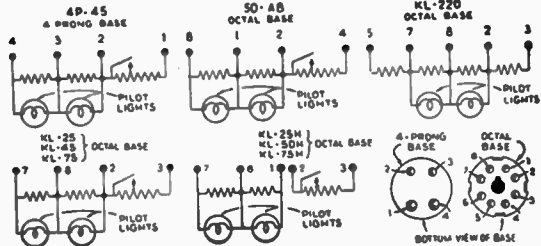
so-called ballasts or resistors used in A.C.-D.C. sets. No extra resistor required.

## REPLACEMENT REGULATORS—A.C.-D.C. SETS. List \$1.25

Amperite No.	Amperite Numbers Shown Replace All A.C.-D.C. Ballasts		
	Starting With Letter	With Numbers From	Ending In
KL 25 f KL 45 KL 75	K, L, M or BK BL or BM	10 to 36 36 " 67 67 " 105	A, B, C, or D " "
KL 25H KL 50H KL 75H	K, L, M, or BK "	11 to 26 36 " 67 67 " 105	F, G, or H " "
KL 50S1 KL 50S2 KL 50S3	K or L "	40 to 100 "	81 82 83
KL 50E	"	36 " 67	E

† Except K18B, use Amperite K18B—4-Prong Base.

## BASE WIRING OF AMPERITES FOR A.C.-D.C. SETS



## AC-DC REPLACEMENT—List \$1.25—Dealer Cost \$0.75.

For	Use Amperite	For	Use Amperite	For	Use Amperite
2CR-241	KL-45	50B2MG	KL-50S1	185KB	4P45
2LR-212	50AB	50X3	4P45	185KC	4P45
2UR-218	KL-45	50X3T	4P45	185L4	4P45
2UR-224	KL-45	55A	KL-45	185L8	4P45
3-40	4P45	55B	KL-50H	185L44	4P45
6B	4P45	55LB	L65B	185LB	4P45
6-125	KL-45J	55KB	KL-45	185LC	4P45
6-126	KL-45J	60-02A	KL-75	185M4	4P45
6-128	KL-45J	60B20	60R30G	185M8	4P45
6-129	KL-45J	60B30G	60R30G	185R	4P45
6-133	KL-45J	66-2027	3-40	185R4	4P45
6-135	KL-45J	69-2033	KL-45	185R8	4P45
7	4P45	66-2037	KL-45	185R34	4P45
8	4P45	75	KL-75	200B	200B
9	4P45	77-109	77-109	200B4	4P45
10A	10A	77-126	77-126	200R8	4P45
10-23A	KL-25	77-127	77-127	610-10	610-10
23-55A	KL-45	77-128	77-128	874-R48	874-R48
23-55F	KL-50H	77-181	77-181	878R48	878R48
23-55B	KL-45	80	4P45	5459 (list 2.25)	5459
23-55C	KL-45	80R	80R	81963	81963
23-55D	KL-45	92A	4P45	81966	KL-45
30A	KL-50H	95K2	KL-45	35000	35000
32	KL-25	100-R8	4P45	A (JFD)	KL-45
33AG	KL-25	100-37	KL-45J	B (JFD)	KL-75
36A	KL-25	100-38	KL-45J	Bk-v5tdj	Bk-v5ldj
40	3-40	100-46	100-46	C-9266	C-9266
40W	3-40	100-47	100-47	D30	D-35
40A2	4P45	100-55	100-55	D35	D35
40B2	4P45	100-56	100-56	D140	200E
4X300	4P45	100-76	100-76	D150	200R
42A	3-40	100-77	100-77	D200	200R
42A1	50AB	100-79	100-79	D740	D740
42A2	50AB	100-81	100-81	FBE-8324	FBE-8324
42B2	50AB	165KC	4P45	L26CC	KL-25
45W	4P45	165LB	4P45	L26CC159	L26CC-159
46A1	46A1	165LC	4P45	MT-650	MT-650
46B1	46B1	165L4	4P45	MTH	MT-650
48A	4P45	165L8	4P45	NUA	KL-45
48A1	50AB	165L44	4P45	NUB	KL-45
48A2	50AB	165M4	4P45	PB57	PB57
48B2	50AB	165M8	4P45	P27287	KL-50E
50MG	KL-50S1	165R	4P45	P26871	P26871
50W	4P45	165R4	4P45	R-1000	R-1000
50A2	4P45	165R8	4P45	R-3003	R-3003
50A2MG	KL-50S2	165R44	4P45	RR782	K26J218
50B2	4P45	185A	4P45	TU-34	KL-45

## A20 SERIES

List \$2.25  
Dealer Cost \$1.35

Voltage drop 20 to 40 V.

3-20  
3H20  
5-20  
5H20  
6-20  
7-20  
9-20  
10-20  
11-20  
12-20  
13-20  
14-20  
15-20  
16-20

## TV BALLAST TUBES

List \$2.25  
Dealer Cost \$1.35

17A470303  
17A485459  
397021  
397022  
397023  
B9M15822  
B9M16067  
B9M16534  
B9M17571  
R1000R

## BATTERY TYPE

List \$2.25  
Dealer Cost \$1.35

1B1 (3H-1)  
1D1 (2H-1)  
1E1 (5E1)  
1F1 (7-1)  
1G1 (4-1)  
1J1 (6-1)  
1P1  
5E1 (6-1)  
5H1 (1K-1)

## A10 SERIES

List \$3.00  
Dealer Cost \$1.80

Amperite Number	Voltage 12-30 Current—Amps.
**D6-TF10	0.060-.068
**1TF10	0.10-.11
1H10	0.15-1.65
**1HTF10	0.15-1.65
2A10	0.2-.22
**2TF10	0.2-.22
2H10	0.25-.28
**2HTF10	0.25-.28
3A10	0.3-.33
3H10	0.35-.39
4A10	0.4-.45
4H10	0.45-.50
5A10	0.5-.56
5H10	0.55-.60
6A10	0.60-.65
6H10	0.65-.73
7A10	0.70-.80
7H10	0.75-.85
8A10	0.80-.90
9A10	0.90-1.0
10A10	1.0-1.15
11A10	1.1-1.25
12A10	1.2-1.35
13A10	1.3-1.5
14A10	1.4-1.6

## SPECIAL BALLAST TUBES

List \$3.00—Dealer Cost \$1.80

1H4	3-12	4H11	6A20	9-4	17-2
1H11	3-14	5-4	6H4	9-7	17-3
1H22	3-14B	5-11	6H6	9-11	20-3
*1HT2	3-16	5-16	6H11	10-3	20-4
*1HT4	3-38A	5H3	*6T2	10-4A	40-6E
*1HT11	3-50A	5H4	*6T3	10-4B	41-7E
2A12	3A20	5H11	*6T4	10-4D	55-1
2A16	3H-1-7	*5T4	7-4	10-4E	55-4
2A20	3H-11	6-2	7-11	10-25	D6-1
2H4	3H-25	6-3	7H4	10A12	D6-4
2H20	*3T2	6-4	7H11	10T1	D6-11
*2HT2	*3T4	6-7	7H12	11-4	*D6T4
*2HT4	*3T7	6-8B	*7T4	11-11	*D6T11
3-2	*3T11	6-11	8-3B	12-4	D7H4
3-4	3V4	6-12	8-11	12-7	*D7HT4
3-7	4H3	6-13	9-3	13-4	*D7HT11
3-11	4H4				

(\* T Type. T-5 1/2 miniature bulb.



*Thank You!*

When writing for additional  
information or when ordering  
from sources of supply listed  
in this book, please mention

*RADIO'S MASTER*

# SPRAGUE KOOLOHMS



## THE RESISTORS WITH THE CERAMIC-COATED WIRE INSULATION

Sprague Koolohm Wire-Wound Resistors are wound with wire that is insulated before it is wound with a flexible, ceramic coating that is impervious to heat as high as 1000° C. In addition, each resistor is doubly protected by a glazed ceramic coating and new type of end seals which guard it effectively against any moisture or other climatic conditions. Ordinary resistors may be designed to provide some degree of "tropicalized" protection at extra cost. STANDARD Koolohms give FULL protection at regular prices!

### No Other Resistors Have These Features

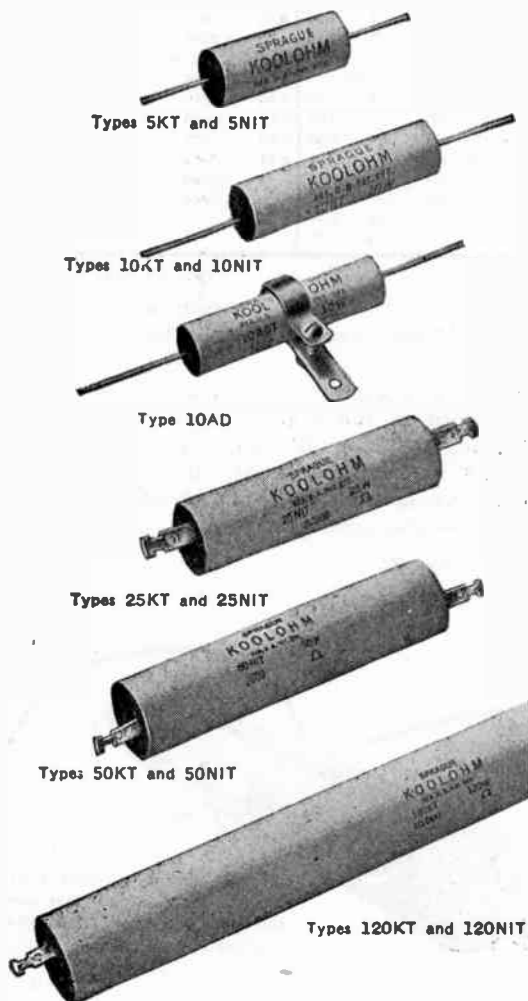
Because of the complete protection afforded by both their wire insulation and outer ceramic shells, Koolohms may be mounted anywhere, even flat against a chassis or against grounded parts. They can safely be used at full wattage ratings, even on the high-resistance values because of the excellent insulation at high temperatures. No danger of shorts

or current leakage! Thanks to their ceramic wire insulation, Koolohms can be wound in layers. This means higher ratings in much smaller physical sizes. Even more important, larger, sturdier wire sizes can be used. Actually, the wire sizes in Koolohm Resistors average 2¼ times greater in cross-sectional area than those in ordinary resistors of the same size!

### High Insulation Resistance

Also standard Koolohms have the high insulation resistance to ground required for television and other high-voltage uses—10,000 volts from the surface of their sturdy ceramic jackets to their resistance elements!

The following listings include only the Sprague Koolohm Wire-Wound Resistor types commonly supplied for radio repair service and amateur radio applications. Various other types are also regularly produced in large quantities and to the most exacting standard or special applications. All have been thoroughly proved and tested for the most exacting military, naval and aircraft applications.



Types 5KT and 5NIT

Types 10KT and 10NIT

Type 10AD

Types 25KT and 25NIT

Types 50KT and 50NIT

Types 120KT and 120NIT

STANDARD RESISTANCE TOLERANCE ±5%

### 5 Watts

1½" x ½" Diameter  
CATALOG TYPES 5KT  
and 5NIT (Non-Inductive)

List Price 5NIT (Non-Induc.)	Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price Type 5KT
\$0.78	5	1000	5.00	\$0.52
.78	10	707	7.07	.52
.78	15	587	8.67	.52
.78	20	500	10	.52
.78	25	446	11	.52
.78	30	406	12	.52
.78	40	354	14	.52
.78	50	316	15	.52
.78	75	258	19	.52
.78	100	224	22	.52
.78	150	183	27	.52
.78	200	158	31	.52
.78	250	141	35	.52
.78	300	129	38	.52
.78	400	112	44	.52
.78	500	100	50	.52
.78	600	91	54	.52
.78	700	84	59	.52
.78	800	79	63	.52
.78	900	74	67	.52
.78	1000	70	70	.52
.91	1250	63	79	.52
.91	1500	57	86	.52
.91	1750	53	93	.52
.91	2000	50	100	.52
.98	2500	44	112	.52
.98	3000	40	123	.52
.98	4000	35	141	.52
1.04	5000	31	158	.52
* 8000	28	173		.54
* 7000	26	187		.54
* 7500	25	194		.54
* 8000	25	200		.54
* 8000	23	212		.54
* 10000	22	224		.54
* 12500	20	250		.60
* 14000	18	265		.60
* 15000	18	274		.60
* 20000	15	333		.66
* 25000	14	354		.84
* 30000	13	387		.90
* 35000	12	418		1.02
* 40000	11	447		1.02

### 10 Watts

1½" x ½" Diameter  
CATALOG TYPES 10KT  
and 10NIT (Non-Inductive)

List Price 10NIT (Non-Induc.)	Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price Type 10KT
\$0.78	5	1414	7.07	\$0.59
.78	10	1000	10	.59
.78	15	830	12.3	.59
.78	20	707	14.1	.59
.78	25	630	15.8	.59
.78	30	575	17.4	.59
.78	40	500	20	.59
.78	50	447	22.4	.59
.78	75	385	27.4	.59
.78	100	316	31.6	.59
.78	150	259	38.7	.59
.78	200	223	44.6	.59
.78	250	200	50	.59
.78	300	182	54.7	.59
.78	400	158	63.3	.59
.78	500	141	70.7	.59
.78	600	129	77.6	.59
.78	700	119	84	.59
.78	750	115	86.9	.59
.78	800	112	89.5	.59
.78	900	105	95	.59
.78	1000	100	100	.59
.91	1250	89	112	.59
.91	1500	81	123	.59
.91	1750	75	133	.59
.91	2000	70	143	.59
.98	2500	63	158	.59
.98	3000	57	174	.59
.98	4000	50	200	.59
1.04	5000	44	227	.59
1.04	6000	41	245	.59
1.17	7000	36	275	.59
1.17	8000	35	283	.59
1.17	9000	33	300	.59
1.50	10000	32	316	.59
* 12000	29	346		.65
* 14000	26	384		.61
* 15000	25	400		.61
* 17500	24	419		.72
* 20000	21	475		.72
* 25000	20	500		.84
* 30000	18	555		.90
* 35000	17	591		1.08
* 40000	16	632		1.08
* 50000	14	700		1.20
* 60000	13	780		1.50
* 70000	12	840		1.66

\* Type KT only.

# SPRAGUE KOOLOHMS



10 Watts Adjustable† 1 1/8" x 1 1/8" Diameter CATALOG TYPE No. 10-AD				25 Watts 2 7/8" x 3 1/8" Diameter CATALOG TYPES 25KT and 25NIT (Non-Inductive)				50 Watts 4" x 7/8" Diameter CATALOG TYPES 50KT and 50NIT (Non-Inductive)				120 Watts 8 1/4" x 1 1/8" Diameter CATALOG TYPES 120KT & 120NIT (Non-Inductive)						
Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price	List Price 25NIT (Non- Induc.)	Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price Type 25KT	List Price 50NIT (Non- Induc.)	Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price Type 50KT	List Price 120NIT (Non- Induc.)	Resistance Ohms	Maximum Current M.A.	Maximum Volts	List Price Type 120KT
10	1000	10	\$0.98	\$1.98	5	2.23	11	\$1.08	\$2.82	5	3.16	15	1.58	\$6.00	5	4.9	24.5	\$4.80
25	630	15.8	.98	1.98	10	1.58	15	1.08	2.82	10	2.23	22	1.58	6.00	10	3.46	34.6	4.60
50	447	22.4	.98	1.98	25	1.0	25	1.08	2.82	25	1.41	35	1.58	6.00	25	2.18	54.6	4.60
100	316	31.6	.98	1.98	50	.707	35	1.08	2.82	50	1.00	50	1.58	6.00	50	1.54	77.4	4.60
150	259	38.7	.98	1.98	75	.577	43	1.08	2.82	75	.816	61	1.58	6.00	75	1.26	94.8	4.60
200	223	44.6	.98	1.98	100	.500	50	1.08	2.82	100	.707	70	1.58	6.00	100	1.09	109.5	4.60
250	200	50	.98	1.98	150	.408	61	1.08	2.82	150	.577	86	1.58	6.00	150	.884	134	4.60
300	182	54.7	.98	1.98	200	.353	70	1.08	2.82	200	.500	100	1.58	6.00	200	.775	155	4.60
400	158	63.2	.98	1.98	250	.316	79	1.08	2.82	250	.447	111	1.58	6.00	250	.692	173	4.60
500	141	70.7	.98	1.98	500	.223	111	1.08	2.82	500	.316	158	1.58	6.00	500	.490	245	4.60
750	115	86.9	.98	1.98	600	.204	123	1.08	2.82	600	.289	173	1.58	6.00	600	.446	268	4.60
1000	100	100	.98	1.98	750	.182	137	1.08	2.82	750	.258	183	1.58	6.00	750	.400	280	4.60
1500	81	123	.98	1.98	1000	.158	158	1.08	2.82	1000	.223	223	1.58	6.00	1000	.346	346	4.60
2000	70	143	.98	1.98	1500	.129	193	1.08	2.82	1500	.182	274	1.58	6.00	1500	.282	424	4.60
2500	63	158	.98	1.98	2000	.111	223	1.08	2.82	2000	.158	316	1.58	6.00	2000	.245	490	4.60
3000	57	174	.98	1.98	2500	.100	250	1.08	2.82	2500	.141	353	1.58	6.00	2500	.219	548	4.60
4000	50	200	.98	1.98	3000	.091	273	1.08	2.82	3000	.129	387	1.58	6.00	3000	.200	600	4.60
5000	44	227	.98	1.98	4000	.079	316	1.08	2.82	4000	.111	447	1.58	6.00	5000	.154	774	4.60
7500	38	275	.98	1.98	5000	.070	353	1.08	2.82	5000	.100	500	1.58	7.20	7500	.126	948	4.80
10000	32	316	.98	1.98	7500	.057	492	1.26	3.24	7500	.081	612	1.80	7.20	10000	.109	1095	4.80
				1.98	10000	.050	500	1.26	3.24	10000	.070	707	1.80	7.60	15000	.069	1346	5.00
				2.22	12000	.046	548	1.26	3.24	12000	.064	775	1.80	6.00	20000	.077	1550	5.20
				2.22	15000	.041	612	1.26	3.24	15000	.057	870	1.80	6.00	25000	.069	1733	5.20
				2.64	20000	.035	707	1.44	3.24	20000	.050	1000	1.80	6.40	50000	.049	2450	5.60
				2.64	25000	.032	790	1.44	3.24	25000	.044	1120	1.60		*75000	.048	3900	6.35
					*50000	.023	1116	1.80	3.90	50000	.032	1580	2.15		*100000	.034	3460	7.10
					*75000	.018	1370	2.15		*75000	.026	1936	2.50					
					*100000	.016	1580	2.40		*100000	.022	2238	2.70					

Extra Bands, \$0.10

†Adjustable resistors are not of tropicalized construction.

\*Type KT only.

Other types not listed in this catalog include: Hermetically-Sealed, Ferrule Terminal, Power Wire-Wound Resistors, with power ratings of 15, 20, 40, 50, 90, 120 and 150 watts. These are the famous Sprague Koolohm "Grade 1, Class 1" resistors that are impervious to salt water, thermal shock, and corrosive atmospheres.

Precision Meter Multiplier Resistors, Wire-Wound, Hermetically-Sealed. Resistance values up to 7.5 megohms per unit. Three types, MFA, MFB, and MFC. Resistance tolerances of  $\pm 0.5\%$  and stability of  $\pm 0.1\%$ . The most rugged meter multipliers in the world!

Voltage Divider Resistors. Wire-wound power resistors with ratings of 10, 15, and 25 watts. Designed for through bolt mounting as individual units, or in multiple sections of any size to provide tapped voltage dividers.

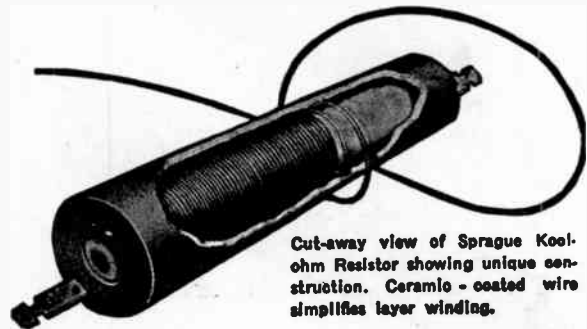
\*MEGOMAX. High-resistance, High-Voltage, Resistors. Ferrule terminal, hermetically-sealed, composition resistors of pressed and sintered ring construction, capable of high-temperature operation to 150° C. Three types with resistance values to 1000 megohms; power ratings of 6, 12 and 22 watts and voltages up to 20,000 volts.

BOBBIN Wire-Wound, Semi-Precision Resistors. Wound with ceramic-insulated wire on high-temperature plastic forms. Five high stability types with

power ratings of 1, 2, 2.5, 3 and 5 watts, and resistance values to 500,000 ohms. Resistance tolerance down to  $\pm 0.5\%$ .

Complete details on the above and other new types are contained in the Sprague Koolohm Industrial Catalog No. C-551, copy of which will gladly be sent on request by industrial users. Sprague engineers welcome the opportunity to be of assistance regarding industrial resistor applications.

\*Trademark applied for.



Cut-away view of Sprague Koolohm Resistor showing unique construction. Ceramic-coated wire simplifies layer winding.

# INSULATED RESISTORS

*Preferred for Performance*



## ADVANCED TYPE BT INSULATED COMPOSITION RESISTORS

IRC Advanced Type BT Resistors are supplied in 5 miniature units from 1/4 to 2 watts. They are particularly suited to television requirements. Extremely low operating temperature and excellent power dissipation are assured. All types, except BTR, are clearly stamped with value and wattage, plus color code. Tolerances:  $\pm 10\%$  standard;  $\pm 5\%$  available at extra cost.



**BTR** **1/3 WATT**

3/32" x 1/8"—470 ohms to 22 meg.—250 volts max.

LIST 17¢



**BTS** **1/2 WATT**

3/32" x 1/8"—470 ohms to 22 meg.—350 volts max.

LIST 17¢



**BTA** **1 WATT**

3/32" x 1/4"—330 ohms to 22 meg.—500 volts max.

LIST 25¢



**BTB** **2 WATT**

1 1/4" x 1/4"—470 ohms to 22 meg.—500 volts max.

LIST 33¢



**BT-2** **2 WATT**

1 3/4" x 21/64"—470 ohms to 22 meg.—500 volts max.

LIST 33¢

### RMA RANGES

Advanced Type BT Resistors and Type BW Insulated Wire Wounds are supplied in RMA Ranges subject to the minimum and maximum values for each type. These stock values are listed in the adjacent column. Heavy listings denote standard 10% tolerance values.

## TYPE BW INSULATED WIRE WOUND RESISTORS

Exceptionally stable, inexpensive wire wound resistors for low range requirements. Small and completely insulated, Type BW's are similar in appearance to IRC insulated composition resistors. Wire resistance element is tightly wound on an insulated core. Tolerances:  $\pm 10\%$  standard; 10 ohms and above available in  $\pm 5\%$  at extra cost.



**BW-1/2** **1/2 WATT**

5/8" x 1/8"—0.24 to 820 ohms  
LIST 17¢



**BW-1** **1 WATT**

1 1/4" x 1/4"—0.47 to 5100 ohms  
LIST 25¢



**BW-2** **2 WATT**

1 3/4" x 21/64"—1.0 to 8,200 ohms  
LIST 35¢

### STANDARD VALUES FOR TYPES BT AND BW

OHMS	OHMS	OHMS	OHMS	MEGS	MEGS
0.24	7.5	240	7,500	0.1	3.3
0.27	8.2	270	8,200	0.11	3.6
0.30	9.1	300	9,100	0.12	3.9
0.33	10	330	10,000	0.13	4.3
0.36	11	360	11,000	0.15	4.7
0.39	12	390	12,000	0.16	5.1
0.43	13	430	13,000	0.18	5.6
0.47	15	470	15,000	0.20	6.2
0.51	16	510	16,000	0.22	6.8
0.56	18	560	18,000	0.24	7.5
0.62	20	620	20,000	0.27	8.2
0.68	22	680	22,000	0.30	9.1
0.75	24	750	24,000	0.33	10.0
0.82	27	820	27,000	0.36	11.0
0.91	30	910	30,000	0.39	12.0
1.0	33	1,000	33,000	0.43	13.0
1.1	36	1,100	36,000	0.47	15.0
1.2	39	1,200	39,000	0.51	16.0
1.3	43	1,300	43,000	0.56	18.0
1.5	47	1,500	47,000	0.62	20.0
1.6	51	1,600	51,000	0.68	22.0
1.8	56	1,800	56,000	0.75	
2.0	62	2,000	62,000	0.82	
2.2	68	2,200	68,000	0.91	
2.4	75	2,400	75,000	1.0	
2.7	82	2,700	82,000	1.1	
3.0	91	3,000	91,000	1.2	
3.3	100	3,300		1.3	
3.6	110	3,600		1.5	
3.9	120	3,900		1.6	
4.3	130	4,300		1.8	
4.7	150	4,700		2.0	
5.1	160	5,100		2.2	
5.6	180	5,600		2.4	
6.2	200	6,200		2.7	
6.8	220	6,800		3.0	



# VOLUME CONTROLS

*Preferred for Performance*

## NEW TYPE Q



### RADIO TECHNICIAN'S VOLUME CONTROL

A new volume control engineered to meet the needs of modern radio and TV replacement. Compact  $\frac{1}{8}$ " design is augmented with shorter bushing, only  $\frac{1}{4}$ " in length. This tiny control will meet all small set requirements, and yet is capable of handling large receiver replacements. Rich appearance of lustrous nickel-plated finish and blue bakelite base combines with "cushioned turn" rotation and quiet element to provide a modern control of the highest quality. Salt-spray materials are used.

**KNOB MASTER FIXED SHAFT.** This is the standard Q shaft. It is a FIXED shaft, and handles most knob requirements. Knurled, flattened and slotted, it fits knurled and spring-type push-on knobs or set-screw knobs. 3" long with ample cross-section to prevent bending.

**INTERCHANGEABLE FIXED SHAFTS.** Quick replacement of standard fixed shaft to fit any of 13 interchangeable Fixed Shafts provides ready conversion to "specials." This revolutionary feature is made easy by the new IRC Resilient Retainer Ring. These special FIXED Shafts offer all of the advantages of Tap-In Shafts with the added security of fixed shafts. Widest replacement coverage is made possible with a minimum stock. These special shafts are illustrated and explained on the following page.

Plain Control—without switch	LIST \$1.25
Tapped Control—without switch	LIST 1.85
Special Shafts—BQ, JQ, MQ, NQ	LIST .45
GQ, HQ, KQ, SQ	LIST .30
LQ, PQ, RQ	LIST .35
TQ, UQ	LIST .60

### 5 STANDARD TAPERS

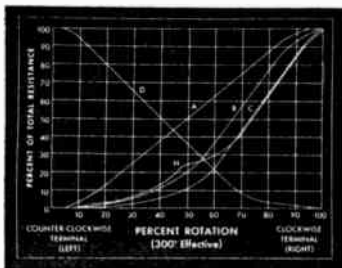
A—Used as potentiometer or rheostat in any circuit where uniform resistance change is required.

B—A semi-logarithmic curve used as tone control or audio circuit control.

C—A logarithmic curve. Used as audio circuit control or antenna shunt control.

D—Tapered at both ends to provide control of grid bias and antenna circuit. Used where control of grid bias is of prime importance in controlling volume.

H—A tapped logarithmic curve used as audio level control for automatic bias compensation.



### 59 VALUES FOR COMPLETE COVERAGE

RESISTANCE OHMS	TAP	IRC STOCK No.	TAPER	USUAL USE
500	—	Q 11-103	A	4, 18—L
1K	—	Q 11-108	A	4—L
2K	—	Q 11-110	A	4, 16—L
3K	—	Q 11-112	A	L
5K	—	Q 11-114	A	1, 4, 8, 13, 16, 17—L
7.5K	—	Q 11-115	A	4—L
10K	—	Q 11-116*	A	4, 16—B, L
10K	—	Q 13-116	C	A
10K	—	Q 14-116*	D	D
20K	—	Q 11-119	A	8, 9—L
20K	—	Q 16-119*	A	8, 9—L
25K	—	Q 11-120	Spec. B	B
25K	—	Q 14-120*	A	3, 4, 8, 9, 10, 11, 12—L
25K	—	Q 11-121	D	K
30K	—	Q 11-121	A	4, 9, 10—L
50K	—	Q 11-123	A	3, 9—L
50K	—	Q 13-123	C	N
50K	—	Q 14-123*	C	N
0.1 meg	—	Q 11-128	D	B
0.1 meg	—	Q 13-128	C	2, 3, 15, 17—L
0.25 meg	—	Q 11-130	A	E, N
0.25 meg	—	Q 13-130	C	3, 6, 9, 17—L
0.25 meg	0.125 meg	Q 13-130X	Spec. F	F
0.25 meg	60K	Q 18-130X	Spec. H	H
0.25 meg	60K-0.12 meg	Q 18-130XX	Spec. H	H
0.35 meg	—	Q 13-132	C	E, N
0.35 meg	35K	Q 17-132X	Spec. G	G
0.35 meg	75K	Q 18-132X	H	G
0.5 meg	—	Q 11-133	A	3, 4, 8, 13, 15, 17—L
0.5 meg	—	Q 13-133	C	E, N
0.5 meg	0.125 meg	Q 13-133X	H	G
0.5 meg	—	Q 14-133	D	M
0.5 meg	35K	Q 17-133X	Spec. G	G
0.5 meg	50K	Q 18-133X	Spec. G	G
0.5 meg	0.25 meg	Q 19-133X	Spec. G	G
0.5 meg	0.1 meg-0.2 meg	Q 18-133XX	Spec. H	H
1.0 meg	—	Q 11-137	A	3, 12, 15, 16—L
1.0 meg	—	Q 13-137	C	E, N
1.0 meg	0.25 meg	Q 13-137X	H	H
1.0 meg	—	Q 14-137	D	N
1.0 meg	35K	Q 17-137X	Spec. G	G
1.0 meg	50K-0.1 meg	Q 17-137XX	Spec. H	H
1.0 meg	0.1 meg	Q 18-137X	Spec. G	G
1.0 meg	0.25 meg-0.5 meg	Q 18-137XX	Spec. H	H
1.0 meg	0.5 meg	Q 19-137X	Spec. G	G
1.0 meg	0.5 meg	QVC-539X	Spec. J	J
1.5 meg	—	Q 11-138	A	15
2.0 meg	—	Q 11-139	A	4, 5, 6, 7, 13, 14, 15, 17—L
2.0 meg	—	Q 13-139	C	E, N
2.0 meg	0.5 meg	Q 13-139X	H	G
2.0 meg	0.5 meg-1.0 meg	Q 13-139XX	Spec. H	H
2.0 meg	0.15 meg	Q 17-139X	Spec. G	G
2.0 meg	1.0 meg	Q 18-139X	Spec. G	G
2.0 meg	0.25 meg-0.5 meg	Q 18-139XX	Spec. H	H
2.0 meg	50K	Q 19-139X	Spec. G	G
2.5 meg	—	Q 11-239	A	5, 6, 17—L
3.0 meg	—	Q 11-140	A	5, 7, 14—L
3.0 meg	—	Q 13-140	C	E
5.0 meg	—	Q 11-141	A	5, 7, 14, 15, 16, 17, 18—L
10.0 meg	—	Q 11-143	A	6, 16, 18—L

### TELEVISION USES

- 1—A. G. C. Automatic Gain Control
- 2—A.F.C. Automatic Freq. Control
- 3—Brighteners Control
- 4—Contrast Control
- 5—Focus Control
- 6—Height Control
- 7—Horizontal Centering Control
- 8—Horizontal Drive Control
- 9—Horizontal Hold Control (Sync.)
- 10—Horizontal Linearity Control
- 11—Horizontal Peaking Control
- 12—Horizontal Size Control
- 13—Sensitivity Control
- 14—Vertical Centering Control
- 15—Vertical Hold Control (Sync.)
- 16—Vertical Linearity Control
- 17—Vertical Size Control
- 18—Width Control

### RADIO USES

- A—Antenna Control
- B—Antenna Grid Bias Control
- C—Antenna Grid Bias of 1 tube
- D—Antenna Grid Bias of 2 tubes
- E—Audio Volume Control
- F—Audio Control with AVC Tap
- G—Audio Control with Tone Tap
- H—Audio Control with Two Tone Taps
- J—Fader Control
- K—Grid Bias Control
- L—Potentiometer Voltage Divider
- M—R. F. Plate Control
- N—Tone Control

\*—These controls are supplied with 270 ohm BW- $\frac{1}{2}$  ( $\frac{1}{2}$  watt) insulated wire wound resistor.











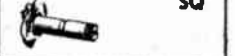


**STOCK NUMBERS.** IRC stock numbers are the same as used on D and DS controls—only the prefix letter is changed to Q.

# VOLUME CONTROLS

*Preferred for Performance*



## 13 INTERCHANGEABLE FIXED SHAFTS

	<b>BQ</b>	Slotted or tongued. For remote control cables. 3 1/2" long. 1/4" dia. LIST 45¢
	<b>GQ</b>	Slotted with hole in bottom. For Philco sets. 1 1/8" long. 1/4" dia. LIST 30¢
	<b>HQ</b>	Flatted, with groove for dial plate. For Delco, RCA, Sears-Roebuck and Westinghouse. 1 1/8" deep flat. 1/8" deep groove. 1 1/8" long. 1/4" dia. LIST 30¢
	<b>JQ</b>	1/8" dia. with .105" flat. For certain Zenith models. 4 1/2" long LIST 45¢
	<b>KQ</b>	1/4" round with 2 concentric holes in end. For Motorola sets. 1 1/2" long. LIST 30¢
	<b>LQ</b>	For certain Belmont and Montgomery-Ward sets. 1/8" deep flat. 1/8" dia. 1" long. 1/4" dia. LIST 35¢
	<b>MQ</b>	Double-flat, threaded for 3/8" on end. For Belmont, Montgomery-Ward and Wells-Gardner sets. 2 concentric holes in end. 1 1/2" long...LIST 45¢
	<b>NQ</b>	1/8" flatted and slotted. Slot milled length of shaft except for thin web. 4" long...LIST 45¢
	<b>PQ</b>	1/4" full-round. 3" long. For 1/4" or 3/8" bushings. 3/8" bushing incl. LIST 35¢
	<b>RQ</b>	Very short screw-driver slot shaft. Slot, 1/8" x 1/8". 1/2" long. 1/4" dia. 3/8" bushing included...LIST 35¢
	<b>SQ</b>	Finger knurl and screw-driver slot. Knurled at end for 1/8". Screw-driver slot in end, 1/8" x 1/8" deep. 1/4" dia. 1/2" long...LIST 30¢
	<b>TQ</b>	Insulated shaft for television. 3" long. 1/4" dia. CANNOT BE USED WITH SWITCH...LIST 60¢
	<b>UQ</b>	Identical to BQ with addition of friction-clutch-drive arm. For remote control auto radios. AVAILABLE FEB. '60...LIST 60¢

IRC Interchangeable Fixed Shafts are individually packaged with instructions and extra Resilient Retainer Ring.

## EXTENSION SHAFTS

These attach to regular shafts, extending length to any needed size. Frequently make possible use of standard controls for "special" job.



TYPE	DIMENSION	LIST
441	4" x 1/4" dia. x 1/8" flat	40¢
442	4" x 1/4" dia. x 1/4" flat	40¢
443	4" x 1/4" dia. x 1/2" flat	40¢
444	8" x 1/4" dia. x 1/8" flat for 4" length	40¢

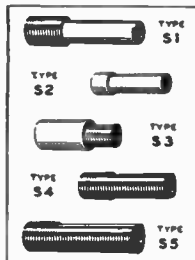
## SLEEVE BUSHINGS

Type S1—For use with standard controls. Type S2—To provide bearing for switching mechanism.

Type S3—For use with standard controls to set control back from chassis or mounting bracket. 1 1/4"—1/2" dia. for 1" unthd.—3/8" dia. for 1/2", 3/8"—32 thd.—.844 flat.

Type S4—For use with standard controls to provide 1/4" dia. bushing. 1 1/4"—thd. 1/8"—28 full length—.375 dbl flat.

Type S5—For use with standard controls to provide 1/4" dia. bushing. 2 1/4"—1/4"—28 thread full length—.487 flat.



Type	List	Type	List
S1	45¢	S3, S4, S5	60¢
S2	30¢		

## NEW IRC SWITCHES

Designed and made by IRC, new Type 76 Switch is available in 2 types: 76-1 is Single Pole Single Throw, and 76-2 is Double Pole Single Throw. Quickly attached to Q Control.



TYPE	LIST
76-1 S.P.S.T.	.60¢
76-2 D.P.S.T.*	.60¢

\*Available May 1950

## PLAIN AND INSULATED SHAFT COUPLERS

Type	List
C2—Insulated coupler for use with square type Motorola shaft	30¢
C3—Plain coupler for 1/4" shafts; insert allows coupling of 1/4" shaft to 3/8" shaft	30¢

## TYPE W WIRE WOUND CONTROLS



Dependable wire wound control-potentiometer for requirements up to 2 watts. Tight, uniform windings assure utmost accuracy. Diameter 1 1/4"; depth behind panel 1 1/8"; shaft length 3" from control face; 1/4" full round shaft. Covers are supplied with controls.

Type W Control—Plain...List \$1.25

IRC Control No.	Resistance Ohms	Max. Current (Amps.)	IRC Control No.	Resistance Ohms	Max. Current (Amps.)
W-2	2	1.000	W-100	100	.142
W-3	3	.815	W-200	200	.100
W-5	5	.680	W-300	300	.083
W-6	6	.560	W-400	400	.071
W-8	8	.500	W-500	500	.063
W-10	10	.450	W-750	750	.052
W-15	15	.370	W-1000	1000	.045
W-20	20	.320	W-2000	2000	.032
W-25	25	.285	W-3000	3000	.026
W-30	30	.260	W-4000	4000	.022
W-40	40	.225	W-5000	5000	.020
W-50	50	.200	W-7500	7500	.016
W-60	60	.183	W-10000	10000	.014
W-75	75	.164			

## TELEVISION CENTERING CONTROLS

Type W Wire Wound controls with Center Tap are widely used as Television Centering Controls.

W10X5	10 ohms—center tapped at 5 ohms
W20X10	20 ohms—center tapped at 10 ohms
W30X15	30 ohms—center tapped at 15 ohms
W50X25	50 ohms—center tapped at 25 ohms

Type W Control Center Tapped for TV...List \$1.85

## TYPE W SWITCHES

For Type W Controls

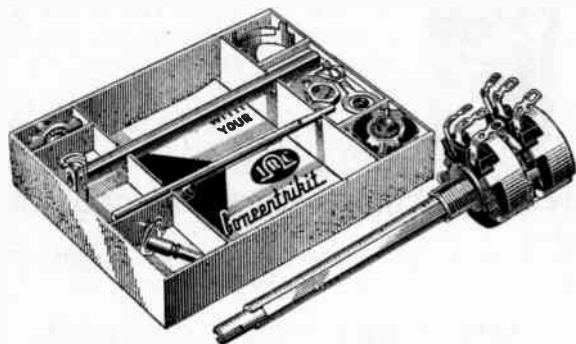
No.	TYPE	LIST
No. 51	S.P.S.T.	\$0.60
No. 52	D.P.S.T.	.75
No. 53	S.P.D.T.	.75
No. 54	Three Point	.75
No. 55	Four Point	.75
No. 56	S.P.D.T. at clockwise position	.75
No. 57	S.P.S.T., with dummy lug	.75



# VOLUME CONTROLS

*Preferred for Performance*

## Concentrikit FOR CONCENTRIC DUALS



New IRC CONCENTRIKIT is a set of specially designed parts with which radio technicians can assemble a great variety of concentric dual controls. The great majority of all concentric dual controls in auto radios, home receivers and TV sets can be readily replaced with CONCENTRIKIT. Searches and waits for exact duplicates are eliminated, and shop inventories reduced.

Each CONCENTRIKIT contains 11 IRC universal parts. These are factory-packed as shown above. Step-by-step assembly instructions are included in each kit. In addition to basic parts in the kit, 2 IRC Base-Elements and 1 Shaft End are required. Shown in the column below, these are purchased separately—thus you save, by buying only the parts needed.

Type K1 CONCENTRIKIT.....LIST \$2.75

## BASE-ELEMENTS FOR CONCENTRIKIT



Two IRC Base-Element Assemblies are required for each concentric dual. These are available in a wide assortment of resistance values, tapers and taps, as shown in the next column. IRC Base-Elements are a revolutionary advance in concentric dual replacement. Each unit is a complete blue molded base with element, terminals and collector ring installed. No loose parts.

LIST  
Base-Element—Plain .....\$ .50  
Base-Element—Tapped .....1.10

## SHAFT ENDS



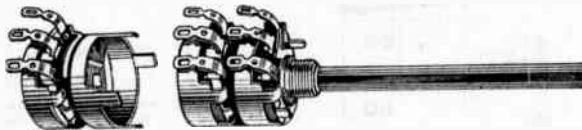
Three special Inner Shaft Ends are furnished for use with CONCENTRIKIT. These give coverage of the 10 concentric dual knob types. LIST 42¢ each

## CONCENTRIC DUAL REPLACEMENT MANUAL



New IRC Manual for use with CONCENTRIKIT fully covers concentric dual replacements. Manual is unique in that it covers only concentrics. The majority of the listings are those for which other manuals omit recommendations. Covers early pre-war concentrics for home and auto radios, and includes many television set requirements. LIST 25¢ each

## Multisections FOR STANDARD DUALS



IRC MULTISECTIONS are complete control sections that can be added like a switch to any Q Control. With these units the Radio Technician is provided an endless variety of dual and triple or even quadruple controls. Duals assembled from IRC MULTISECTIONS will accommodate Type 76 switches. Available in a selection of 17 values, as shown in following table. Each MULTISECTION adds 1/2" to basic control.

### STOCK VALUES OF IRC MULTISECTIONS

RESISTANCE IN OHMS	TAPER	IRC STOCK NO.
1K	A	M11-108
5K	A	M11-114
10K	A	M11-116
25K	A	M11-120
50K	A	M11-123
0.1 meg	A	M11-128
0.1 meg	C	M13-128
0.25 meg	A	M11-130
0.25 meg	C	M13-130
0.5 meg	A	M11-133
0.5 meg	C	M13-133
1.0 meg	A	M11-137
1.0 meg	C	M13-137
2.0 meg	A	M11-139
2.0 meg	C	M13-139
5.0 meg	A	M11-141
10.0 meg	A	M11-143

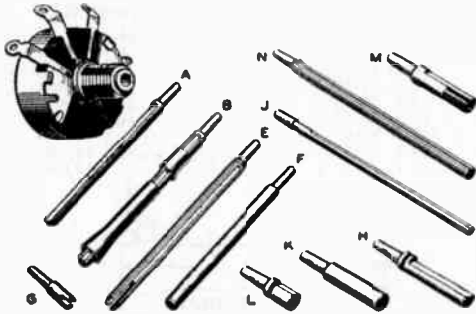
MULTISECTIONS.....LIST \$1.25 each

## IRC BASE-ELEMENT ASSEMBLIES FOR CONCENTRIKIT

RESISTANCE	STOCK No.	TAPER	TAPS
1K	B11-108	A	
3K	B11-112	A	
5K	B11-114	A	
7.5K	B11-115	A	
10K	B11-116	A	
10K	B17-116	Spec.	
20K	B11-119	A	
25K	B11-120	A	
30K	B11-121	A	
50K	B11-123	A	
.1 meg	B11-128	A	
.25 meg	B11-130	A	
.25 meg	B13-130	C	
.25 meg	B13-130X	Spec.	.125 meg
.25 meg	B18-130X	H	60K
.35 meg	B13-132	C	
.35 meg	B17-132X	Spec.	85K
.35 meg	B18-132X	H	75K
.5 meg	B11-133	A	
.5 meg	B13-133	C	
.5 meg	B13-133X	H	.125 meg
.5 meg	B18-133X	Spec.	50K
.5 meg	B19-133X	Spec.	.25 meg
1.0 meg	B11-137	A	
1.0 meg	B13-137	C	
1.0 meg	B13-137X	H	.25 meg
1.0 meg	B17-137	Spec.	
1.0 meg	B18-137XX	Spec.	.25 and .5 meg
1.0 meg	B19-137X	Spec.	.5 meg
1.5 meg	B11-138	A	
2.0 meg	B11-139	A	
2.0 meg	B13-139	C	
2.0 meg	B13-139X	H	.5 meg

# VOLUME CONTROLS

*Preferred for Performance*



## UNIVERSAL TYPE D CONTROLS With 11 Tap-in Shafts

IRC all-purpose replacement controls for use with Tap-in Shafts. An "A" Shaft is included with each control. Dimensions: 1 1/4" x 3/16".

D Control—plain	LIST \$1.25
D Control—tapped	LIST 1.85
Price includes Type A Shaft packed with each control.	
Tap-in Shafts B and M	LIST .45
Tap-in Shafts E, F, G, H, J, K, L, N	LIST .30

## DS CONTROLS with Fixed Shafts

Sixteen values; dimensions: 1 1/4" x 3/16".

DS Control—plain	LIST \$1.25
DS Control—tapped	LIST 1.85

Resistance Ohms	Tap	IRC Stock No.	Taper	Usual Application
500	—	D11-103	A	Potentiometer Voltage Divider
1M	—	D11-108	A	Potentiometer Voltage Divider
2M	—	D11-110	A	Potentiometer Voltage Divider
3M	—	D11-112	A	Potentiometer Voltage Divider
4M	—	D11-112	A	Potentiometer Voltage Divider
5M	—	D11-114	A	Potentiometer Voltage Divider
5M	—	D13-114	C	*Antenna Control
5M	—	D14-114	D	*Antenna C Bias Control
7,500	—	D11-115	A	Potentiometer Voltage Divider
10M	—	D11-116	A	*Antenna Grid Bias Control
10M	—	D13-116	C	*Antenna Control
10M	—	D14-116	D	*Antenna Grid Bias of 2 Tubes
10M	—	D18-116	F	*Antenna Grid Bias of 1 Tube
13M	3M	D18-117X	H	I. F. Shunting Control
15M	—	D14-118	D	*Antenna Grid Bias Control
15M	—	D18-118	F	*Antenna Grid Bias Control
20M	—	D18-119	F	*Antenna Grid Bias Control
25M	—	D11-120	A	Potentiometer Voltage Divider
25M	—	D14-120	D	*Grid Bias Control
25M	—	D18-120	F	*Antenna Control
30M	6M	D18-122X	H	Audio Control with Tone Tap
44M	7M-14M	D18-123XX	Spec.	Audio Control with 2 Tone Taps
50M	—	D11-123	A	Potentiometer Voltage Divider
50M	—	D13-123	C	Tone Control
50M	—	D14-123	D	*Antenna Grid Bias Control
75M	—	D13-125	C	Tone Control
75M	—	D14-125	D	*Grid Bias Control
100M	—	D11-128	A	Potentiometer Voltage Divider
100M	—	D13-128	C	Tone or Audio Circuit Control
200M	—	D11-129	A	Potentiometer Voltage Divider
200M	—	D14-129	D	*Grid Bias Control
250M	—	D11-130	A	Potentiometer Voltage Divider
250M	—	D13-130	C	Tone or Audio Circuit Control
250M	125M	D13-130X	Spec.	Audio Control with A.V.C. Tap
250M	—	D14-130	D	*Grid Bias Control
250M	25M	D17-130X	Spec.	Audio Control with Tone Tap
250M	60M	D18-130X	H	Audio Control with Tone Tap
250M	60M-120M	D19-130XX	Spec.	Audio Control with 2 Tone Taps
350M	—	D13-132	C	Tone or Audio Circuit Control
350M	35M	D17-132X	Spec.	Audio Control with Tone Tap
350M	75M	D18-132X	H	Audio Control with Tone Tap
500M	—	D11-133	A	Potentiometer Voltage Divider
500M	—	D13-133	C	Tone or Audio Circuit Control
500M	125M	D13-133X	H	Audio Control with Tone Tap
500M	—	D14-133	D	R.F. Plate Control
500M	25M	D17-133X	Spec.	Audio Control with Tone Tap
500M	60M	D18-133X	H	Audio Control with Tone Tap
500M	250M	D19-133X	Spec.	Audio Control with Tone Tap
500M	100M-200M	D18-133XX	Spec.	Audio Control with 2 Tone Taps
1.0 meg.	—	D11-137	A	Potentiometer Voltage Divider
1.0 meg.	—	D13-137	C	Tone or Audio Circuit Control
1.0 meg.	250M	D13-137X	H	Audio Control with Tone Tap
1.0 meg.	—	D14-137	D	Tone Control
1.0 meg.	35M	D17-137X	Spec.	Audio Control with Tone Tap
1.0 meg.	50M-100M	D17-137XX	Spec.	Audio Control with 2 Tone Taps
1.0 meg.	160M	D18-137X	Spec.	Audio Control with Tone Tap
1.0 meg.	250M-500M	D18-137XX	Spec.	Audio Control with 2 Tone Taps
1.0 meg.	500M	D18-137X	Spec.	Audio Control with Tone Tap
1.0 meg.	500M	DVC-639X	Spec.	Fader control for fading one circuit into another
2.0 meg.	—	D13-139	C	Tone or Audio Circuit Control
2.0 meg.	500M	D13-139X	H	Audio Control with Tone Tap
2.0 meg.	5M	D15-139X	Spec.	Audio Control with Tone Tap
2.0 meg.	500M-1.0 meg.	D13-139XX	Spec.	Audio Control with 2 Tone Taps
2.0 meg.	150M	D17-139X	Spec.	Audio Control with Tone Tap
2.0 meg.	1.0 meg.	D18-139X	Spec.	Audio Control with Tone Tap
2.0 meg.	250M-500M	D18-139XX	Spec.	Audio Control with 2 Tone Taps
2.0 meg.	50M	D19-139X	Spec.	Audio Control with Tone Tap
2.0 meg.	—	D13-140	C	Audio Control
5.0 meg.	—	D11-141	A	Potentiometer Voltage Dividers
7.0 meg.	—	D11-142	A	Potentiometer Voltage Dividers
10.0 meg.	—	D11-143	A	Potentiometer Voltage Dividers

\* Supplied with 270 ohm BW 1/2 (1/2 Watt) Insulated Wire Wound Resistor.

Resistance Ohms	Tap	IRC Stock No.	Taper	Usual Application
10M	—	DS11-116	A	Antenna Grid Bias Control
10M	—	DS14-116	D	*Antenna Grid Bias of 2 Tubes
25M	—	DS14-120	D	*Grid Bias Control
50M	—	DS11-123	A	Potentiometer Voltage Divider
100M	—	DS11-128	A	Potentiometer Voltage Divider
100M	—	DS13-128	C	Tone or Audio Circuit Control
250M	—	DS11-130	A	Potentiometer Voltage Divider
250M	—	DS13-130	C	Tone or Audio Circuit Control
250M	125M	DS13-130X	Spec.	Audio Control with AVC Tap
250M	60M	DS18-130X	H	Audio Control with Tone Tap
500M	—	DS13-133	C	Tone or Audio Circuit Control
500M	125M	DS13-133X	H	Audio Control with Tone Tap
1.0 meg.	—	DS13-137	C	Tone or Audio Circuit Control
1.0 meg.	350M	DS13-137X	H	Audio Control with Tone Tap
2.0 meg.	—	DS13-139	C	Tone or Audio Circuit Control
2.0 meg.	500M	DS13-139X	H	Audio Control with Tone Tap

\* Supplied with 270 ohm BW 1/2 (1/2 Watt) Insulated Wire Wound Resistor.

## DUAL CONTROLS

Selected group of 8 Dual Controls. Series 20 switches may be attached. Dimensions: 1 1/4" x 1 1/4". LIST \$3.10 each

IRC Stock No.	Unit	Resistance Ohms	Tap
35-1620	Panel	10,000	C
	Rear	25,000	E
61-1623	Panel	10,000	F
	Rear	50,000	A
33-2828	Panel	0.1 meg.	C
	Rear	0.1 meg.	C
33-3030	Panel	0.25 meg.	C
	Rear	0.25 meg.	C
33-3333	Panel	0.5 meg.	C
	Rear	0.5 meg.	C
33-3737	Panel	1.0 meg.	C
	Rear	1.0 meg.	C
33-3939	Panel	2.0 meg.	C
	Rear	2.0 meg.	C
31-4141	Panel	5.0 meg.	A
	Rear	5.0 meg.	A

## CLUTCH-TYPE DC CONTROLS

8 special controls for auto radios and similar requirements. Switches cannot be used. Dimensions: 1 1/4" x 1 1/4". LIST \$1.85 each

IRC Stock No.	Resistance Ohms	Resistance to Tap
DC13-130	250M	—
DC18-130X	250M	Tap 50M
DC13-133	500M	—
DC13-133X	500M	Tap 125M
DC13-137	1.0 meg.	—
DC13-137X	1.0 meg.	Tap 250M
DC13-139	2.0 meg.	—
DC13-139X	2.0 meg.	Tap 500M

## QUICKLY ATTACHED SWITCHES

	For D and DS Controls	For Dual Controls	List
S.P.S.T.	No. 41	No. 21	\$0.60
D.P.S.T.	No. 42	No. 22	0.75
S.P.D.T.	No. 43	No. 23	0.75
Three Point	—	No. 24	0.75
Four Point	No. 45	No. 25	0.75
S.P.D.T. at clockwise position	—	No. 26	0.75
S.P.S.T. with dummy lug	No. 47	No. 27	0.75

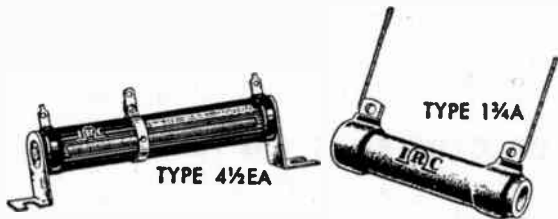




# POWER RESISTORS

*Preferred for Performance*

## IRC FIXED AND ADJUSTABLE POWER WIRE WOUND RESISTORS

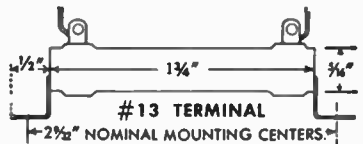


IRC Power Wire Wounds are rugged resistors specially engineered for dependable heavy duty performance. They are full size, thus continuous operation at full rated power can be maintained. Derating is unnecessary. Special dark, rough coating is noted for its rapid heat dissipation, and protection against humidity. Operating temperatures are lower, thus assuring long life.

All terminals are hot tin dipped for easy soldering. 10 and 20 watt sizes use combination lead and lug terminal from which lugs may be cut for tight space applications. Clear, permanent markings show type, size, watts and resistance. Tolerances: Fixed Types—standard  $\pm 5\%$  for 50 ohms and over,  $\pm 10\%$  below 50 ohms. Adjustable Types—standard  $\pm 10\%$ .

### FIXED TYPES TYPE 1 3/4 A—10 WATTS formerly type AB

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	3160	100	316	1,000	100	7,500	86
1.5	2580	125	283	1,100	95	8,000	35
2	2235	150	258	1,200	91	8,500	84
3	1825	200	223	1,250	89	9,000	83
4	1580	225	211	1,450	83	10,000	31
5	1410	250	200	1,500	81	11,000	30
7.5	1150	300	182	1,750	75	12,000	28
10	1000	350	169	2,000	70	12,500	28
12	913	400	158	2,250	66	13,500	27
15	816	450	149	2,500	63	14,300	26
20	707	500	141	3,000	57	15,000	25
25	632	600	129	3,500	53	16,000	25
30	577	700	119	4,000	50	17,500	23
35	535	750	116	4,500	47	18,000	23
40	500	800	111	5,000	44	20,000	22
50	447	900	106	6,000	40	22,500	21
75	366			7,000	37	25,000	20



SLOTTED BRACKETS PERMIT  $\pm 1/8$ " VARIATION.

#### PRICES

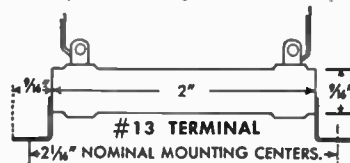
Ohms	Max. m.a.	LIST
1 to 1,000 ohms		\$0.58
1,100 to 5,000 ohms		.63
6,000 to 10,000 ohms		.72
11,000 to 20,000 ohms		.80
22,500 to 25,000 ohms		.86
ZO Brackets (not included with resistor)		.10

### TYPE 2D—20 WATTS formerly type DG

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	4470	100	447	500	200	1,200	129
5	2000	150	366	650	175	1,250	126
10	1415	200	316	700	169	1,500	115
25	894	250	282	750	163	1,750	107
50	633	300	258	800	158	1,850	104
75	517	350	238	850	153	2,000	100
		400	223	1,000	141		

### TYPE 2D—20 WATTS (Cont'd)

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
2,250	94	4,500	66	9,000	47	20,000	31
2,400	91	5,000	63	10,000	44	25,000	28
2,500	89	6,000	57	11,000	42	30,000	25
2,750	85	7,000	53	12,000	40	35,000	23
3,000	81	7,500	51	12,500	40	40,000	22
3,500	75	8,000	50	15,000	36	45,000	21
4,000	70	8,500	48			50,000	20



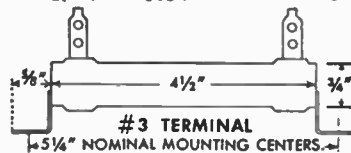
SLOTTED BRACKETS PERMIT  $\pm 1/8$ " VARIATION.

#### PRICES

Ohms	LIST
1 to 1,000 ohms	\$0.75
1,200 to 5,000 ohms	.78
6,000 to 10,000 ohms	.88
11,000 to 20,000 ohms	.94
25,000 to 40,000 ohms	1.08
45,000 to 50,000 ohms	1.25
Z1 Brackets (not included with resistor)	.10

### TYPE 4 1/2 E—50 WATTS formerly type EP

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	7070	100	707	3,000	129	12,500	68
2	5000	150	577	4,000	111	15,000	57
3	4080	200	500	5,000	100	20,000	50
4	3535	250	447	6,000	91	25,000	44
5	3160	300	316	7,000	84	30,000	40
10	2235	400	223	8,000	79	35,000	37
25	1415	500	141	9,000	75	40,000	35
50	1000	600	100	10,000	70	50,000	31
75	816	700	81	11,000	66	60,000	28
		800	75	12,000	64	75,000	25
		1,000	63			100,000	22



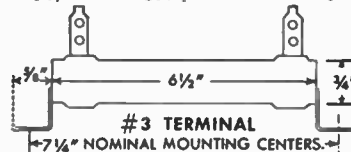
SLOTTED BRACKETS PERMIT  $\pm 3/8$ " VARIATION.

#### PRICES

Ohms	LIST
1 to 4 ohms	\$1.88
5 to 1,000 ohms	1.37
1,500 to 5,000 ohms	1.45
6,000 to 10,000 ohms	1.58
12,000 to 20,000 ohms	1.75
25,000 to 40,000 ohms	1.95
50,000 to 60,000 ohms	2.14
75,000 ohms	2.45
0.1 megohm	2.65
Z2 Brackets included with resistor.	

### TYPE 6 1/2 E—75 WATTS formerly type ES

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
5	3870	500	387	5,000	122	25,000	64
10	2740	750	316	6,000	111	30,000	50
25	1730	1,000	274	7,500	100	40,000	48
50	1220	1,500	223	8,000	96	50,000	38
100	865	2,000	198	10,000	86	60,000	35
200	612	2,500	178	15,000	70	75,000	31
250	548	3,000	158	20,000	61	100,000	27
		4,000	137				



SLOTTED BRACKETS PERMIT  $\pm 3/8$ " VARIATION.

# POWER RESISTORS

*Preferred for Performance*



## TYPE 6½E—75 WATTS (Cont'd)

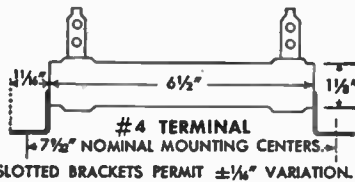
PRICES		LIST
6 to 1,000 ohms	.....	\$1.67
1,500 to 5,000 ohms	.....	1.75
6,000 to 10,000 ohms	.....	1.89
15,000 to 20,000 ohms	.....	2.03
25,000 to 40,000 ohms	.....	2.30
50,000 to 60,000 ohms	.....	2.38
75,000 ohms	.....	2.67
0.1 megohm	.....	3.00

Z2 Brackets included with resistor.

## TYPE 6½H—100 WATTS

formerly type HA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	10,000	50	1,414	1,250	282	7,500	115
2	7,070	75	1,155	1,500	258	10,000	100
3	6,770	100	1,000	2,000	228	15,000	81
4	5,000	125	895	2,500	200	20,000	70
5	4,470	150	816	3,000	182	25,000	68
10	3,160	250	682	5,000	141	80,000	57
25	2,000	500	447	.....	.....	40,000	50
		750	365	.....	.....	50,000	44
		1,000	316	.....	.....	60,000	40
				.....	.....	75,000	36
				.....	.....	0.1 meg	31



### PRICES

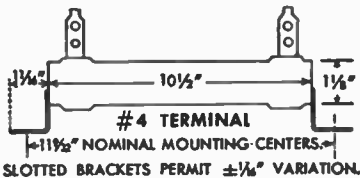
PRICES		LIST
1 to 4 ohms	.....	\$2.81
5 to 1,000 ohms	.....	2.03
1,250 to 5,000 ohms	.....	2.08
7,500 to 10,000 ohms	.....	2.25
15,000 to 20,000 ohms	.....	2.47
25,000 to 40,000 ohms	.....	2.67
50,000 to 60,000 ohms	.....	2.81
75,000 ohms	.....	3.00
0.1 megohm	.....	3.17

Z3 Brackets included with resistor.

## TYPE 10½H—200 WATTS

formerly type HO

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	14,140	75	1,680	1,500	365	20,000	100
2	10,000	100	1,414	2,000	316	25,000	89
3	8,100	150	1,150	2,500	288	30,000	81
4	7,070	250	895	3,000	258	40,000	70
5	6,820	500	682	5,000	200	50,000	68
10	4,470	750	516	7,500	168	60,000	57
25	2,880	1,000	447	10,000	141	75,000	51
50	2,000			15,000	115	0.1 meg	44



### PRICES

PRICES		LIST
1 to 5 ohms	.....	\$3.75
10 to 1,000 ohms	.....	2.70
1,500 to 5,000 ohms	.....	2.75
7,500 to 10,000 ohms	.....	2.95
15,000 to 20,000 ohms	.....	3.13
25,000 to 40,000 ohms	.....	3.25
50,000 to 60,000 ohms	.....	3.36
75,000 ohms	.....	3.55
0.1 megohm	.....	3.75

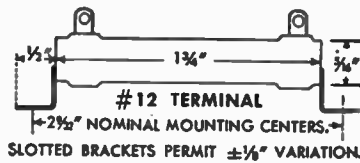
Z8 Brackets included with resistor.

## ADJUSTABLE TYPES

### TYPE 1¼AA—10 WATTS

formerly type ABA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	8160	50	447	750	115	8,000	57
2	2286	75	365	800	111	8,500	58
3	1825	100	316	1,250	89	4,000	50
5	1410	150	258	1,000	100	4,500	47
7.5	1150	200	228	1,450	88	5,000	44
10	1000	250	200	1,500	81	6,000	40
15	816	300	182	2,000	70	7,000	37
20	707	350	169	2,250	66	7,500	36
25	682	400	158	2,500	68	8,000	35
		500	141	.....	.....	8,500	34
		600	129	.....	.....	9,000	33
				.....	.....	10,000	31



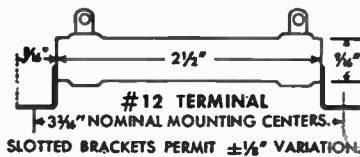
### PRICES

PRICES		LIST
1 to 1,000 ohms	.....	\$1.20
1,250 to 5,000 ohms	.....	1.25
6,000 to 10,000 ohms	.....	1.35
Z0 Brackets (not included with resistor)	.....	.10

## TYPE 2½DA—25 WATTS

formerly type DHA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	5000	50	707	1,000	158	4,500	74
2	3580	75	577	1,250	141	5,000	70
3	2880	100	500	1,500	129	6,000	64
5	2280	150	408	2,000	111	7,000	59
7.5	1825	200	358	2,250	105	7,500	57
10	1580	250	316	2,500	100	8,000	55
15	1290	300	289	3,000	91	9,900	52
20	1117	400	250	3,500	84	10,000	50
25	1000	500	228	4,000	79	12,000	46
		750	182	.....	.....	15,000	40
		800	176	.....	.....	20,000	36
				.....	.....	25,000	31



### PRICES

PRICES		LIST
1 to 1,000 ohms	.....	\$1.56
1,250 to 5,000 ohms	.....	1.58
6,000 to 10,000 ohms	.....	1.70
12,000 to 20,000 ohms	.....	1.75
25,000 ohms	.....	1.89

Z1 Brackets included with resistor.

## TYPE X BANDS

Adjustable Bands designated as Type X feature stainless steel spring with silver contact button. Cannot corrode—constant pressure is assured. Type 1¼AA Resistor because of its small size is furnished with a special adjustable band.

Resistor	Band	List
1¼AA	special "A"	20¢
2½DA	X2	20¢
4½EA, 6½EA	X8	20¢
6½HA, 10½HA	X4	25¢



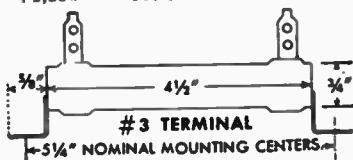


# POWER RESISTORS

*Preferred for Performance*

## TYPE 4½EA—50 WATTS formerly type EPA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	7070	150	577	2,500	141	9,000	74
2	5000	200	500	3,000	129	10,000	70
3	4080	250	447	3,500	119	12,000	64
4	3585	300	408	4,000	111	15,000	57
6	3160	400	358	4,500	105	20,000	50
10	2285	500	316	5,000	100	25,000	44
25	1415	750	258	6,000	91	30,000	40
50	1000	800	250	7,000	84	40,000	35
75	816	1,000	228	7,500	81	50,000	31
100	707	1,250	200	8,000	79	60,000	28
		1,500	182			75,000	25
		2,000	158			80,000	22
		2,250	149			0.1 meg	22



SLOTTED BRACKETS PERMIT ±3/16" VARIATION.

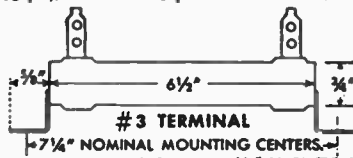
### PRICES

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1 to 4 ohms							
5 to 1,000 ohms							
1,250 to 5,000 ohms							
6,000 to 10,000 ohms							
12,000 to 20,000 ohms							
25,000 to 40,000 ohms							
50,000 to 60,000 ohms							
75,000 to 80,000 ohms							
0.1 megohm							

Z2 Brackets included with resistor.

## TYPE 6½EA—75 WATTS formerly type ESA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	8650	300	500	3,500	146	15,000	70
2	6120	400	482	4,000	137	20,000	61
3	5000	500	387	4,500	129	25,000	54
4	4380	750	316	5,000	122	30,000	50
5	3870	800	305	6,000	111	35,000	46
10	2740	1,000	274	7,000	103	40,000	43
15	2280	1,250	245	7,500	100	45,000	40
25	1780	1,500	228	8,000	96	50,000	38
50	1220	2,000	193	9,000	91	60,000	35
100	865	2,250	182	10,000	86	80,000	30
200	612	2,500	178	12,000	79	0.1 meg	27
250	548	3,000	158				



SLOTTED BRACKETS PERMIT ±3/16" VARIATION.

### PRICES

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1 to 4 ohms							
5 to 1,000 ohms							
1,250 to 5,000 ohms							
6,000 to 10,000 ohms							
12,000 to 20,000 ohms							
25,000 to 40,000 ohms							
45,000 to 60,000 ohms							
80,000 ohms							
0.1 megohm							

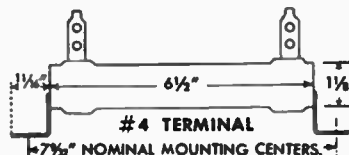
Z2 Brackets included with resistor.

## TYPE 6½HA—100 WATTS formerly type HAA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	10,000	10	8,160	250	632	1,500	258
2	7,070	25	2,000	400	500	2,000	228
3	5,770	50	1,414	500	447	2,500	200
4	5,000	100	1,000	750	385	3,000	182
5	4,470	200	707	1,000	316	4,000	158

## TYPE 6½HA—100 WATTS (Cont'd)

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
5,000	141	10,000	100	30,000	57	60,000	40
6,000	129	15,000	81	40,000	50	75,000	36
7,500	116	20,000	70	50,000	44	0.1 meg	31
8,000	111	25,000	68				



SLOTTED BRACKETS PERMIT ±1/16" VARIATION.

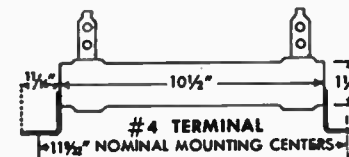
### PRICES

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1 to 4 ohms							
5 to 1,000 ohms							
1,500 to 5,000 ohms							
6,000 to 10,000 ohms							
15,000 to 20,000 ohms							
25,000 to 40,000 ohms							
50,000 to 60,000 ohms							
75,000 ohms							
0.1 megohm							

Z3 Brackets included with resistor.

## TYPE 10½HA—200 WATTS formerly type HOA

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1	14,140	25	2,830	2,000	316	20,000	100
2	10,000	50	2,000	2,500	258	25,000	89
3	8,160	100	1,414	3,000	228	30,000	81
4	7,070	250	895	5,000	200	40,000	70
5	6,320	500	632	10,000	141	50,000	62
10	4,470	1,000	447	15,000	115	60,000	57
		1,500	365			75,000	51
						0.1 meg	44



SLOTTED BRACKETS PERMIT ±1/16" VARIATION.

### PRICES

Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.	Ohms	Max. m.a.
1 to 5 ohms							
10 to 1,000 ohms							
1,500 to 5,000 ohms							
10,000 ohms							
15,000 to 20,000 ohms							
25,000 to 40,000 ohms							
50,000 to 60,000 ohms							
75,000 ohms							
0.1 megohm							

Z3 Brackets included with resistor.

## WIRE WOUND BLEEDER RESISTORS



Used as bleeder resistor in any power supply up to 500 volts. Sealed in bakelite and insulated

for 1,000 volts to ground. Mounting brackets supplied attached to resistor. RESISTANCE: 25,000 ohms overall, tapped at 7,500, 10,000, 12,500 and 15,000 ohms. RATING: 18 watts attached flat to chassis; 9 watts in free air.

M-1034.....LIST \$1.25 each

## CENTER TAP INSULATED WIRE WOUND RESISTORS

Ideal for balancing circuits. Will handle up to 5 watts at 100° C. if mounted on chassis. Completely enclosed in molded bakelite.



Mounting brackets supplied attached. Overall length 2". Distance between mounting centers 2½". RANGES: 10, 20, 50, 75, 100 and 200 ohms.

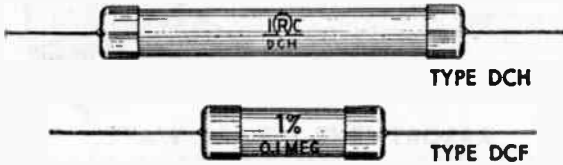
MW-2J.....LIST 35¢ each

# RESISTORS

*Preferred for Performance*



## CLOSE TOLERANCE PRECISTORS



New IRC PRECISTORS are deposited carbon precision resistors offering a unique combination of close tolerance, stability and economy. Pure crystalline carbon is bonded to selected ceramic cores producing a resistor ideally suited to the requirements of instrumentation, advanced electronics and critical television circuits. Guaranteed accuracy  $\pm 1\%$ . Relation between accuracy and load as follows.



Precision Tube	TO MAINTAIN ORIGINAL VALUE OF PRECISTOR WITHIN	LIMIT LOAD ON PRECISTOR TO	
		OCF	DCH
	1%	1/2 watt	1/2 watt
	2%	1/2 watt	1 watt
	5%	1 watt	2 watt

### STANDARD VALUES

Range Ohms	List	Range Ohms	List	Range Megohms	List	Range Megohms	List
TYPE DCF							
100	\$1.50	2,500	\$1.25	0.10	\$1.25	4.00	\$1.25
150	1.50	3,000	1.25	0.15	1.25	5.00	1.50
200	1.25	4,000	1.25	0.20	1.25	TYPE DCH	
250	1.25	5,000	1.25	0.25	1.25	0.6	\$1.50
300	1.25	10,000	1.25	0.30	1.25	1.0	1.50
400	1.25	15,000	1.25	0.40	1.25	2.0	1.50
500	1.25	20,000	1.25	0.50	1.25	3.0	1.50
1,000	1.25	25,000	1.25	1.00	1.25	5.0	2.00
1,500	1.25	30,000	1.25	1.50	1.25	10.0	2.50
2,000	1.25	40,000	1.25	2.00	1.25	15.0	2.50
		50,000	1.25	2.50	1.25	20.0	3.00
				3.00	1.25		

## WIRE WOUND PRECISIONS

IRC Precision Wire Wound Resistors are scientifically designed and constructed of the highest quality materials to combine the utmost in accuracy and dependability. Winding forms are of non-hygroscopic ceramic having high insulation qualities, high mechanical strength, and low-coefficient of expansion.



Minimum temperature coefficient of .002% per degree C. is standard on all IRC Wire Wound Precisions at no extra cost.

1% accuracy is standard. Closer tolerances are available at higher prices.

Types WW-3, WW-4, WW-5	List Each	Types WW-3 WW-4 WW-5 Meg.	List Each	WW-2 List Each
0.1, 0.2, 1 ohm	\$1.75	0.225 & 0.25	\$3.50	
10, 25, 50, 100, 200, 250, 300, 500, 1M, 1.5M, 2M, 2.5M ohms	1.70	0.3	3.80	
4M, 5M, 7.5M, 10M, 12.5M, 15M ohms	1.75	0.4	4.70	
20M, 22.5M, 25M, 30M, 40M, 50M ohms	1.90	0.5	5.00	
60M, 75M ohms	2.25	0.6	6.35	\$7.00
0.1 Meg.	2.45	0.75	7.50	7.65
0.125 and 0.15 Meg.	2.80	0.9	8.65	9.00
0.175 and 0.2 Meg.	3.20	1.0	9.35	9.65
		1.5		15.85
		2.0		20.00
		2.5		24.20

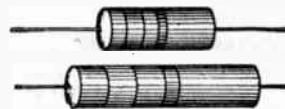
## ALL-METAL RHEOSTATS



Rheostat operating temperatures are cut almost in half by the all-metal construction of IRC Types PR-25 and PR-60. They dissipate heat more rapidly through the use of aluminum for the housing and in the winding core. With full rate power applied to as little as 25% of the element there is only slight difference in temperature rise.

PR-25 25 WATTS			PR-50 50 WATTS		
1-21/32" dia. Depth behind panel 31/32"			2-3/8" dia. Depth behind panel 1-3/8"		
Ohms	Max. m.a.	List Price	Ohms	Max. m.a.	List Price
1	5,000	\$5.85	0.5	10,000	\$6.50
2	3,450	5.20	1	7,070	6.50
3	2,850	5.20	2	5,500	5.85
6	2,040	5.20	4	3,520	5.85
8	1,770	5.20	6	2,880	5.85
10	1,580	5.20	8	2,500	5.85
15	1,290	5.20	12	2,040	5.85
25	1,000	5.20	16	1,770	5.85
35	845	5.20	22	1,500	5.85
50	709	5.20	35	1,190	5.85
75	575	5.20	50	1,000	5.85
100	500	5.20	80	790	5.85
125	445	5.20	125	630	5.85
175	375	5.20	150	675	5.85
250	315	5.20	225	470	5.85
350	267	5.20	300	407	5.85
500	222	5.20	500	315	5.85
750	178	5.20	800	250	6.18
1,000	155	5.85	1,000	228	6.18
1,500	139	5.85	1,600	177	6.18
2,500	100	5.85	2,500	140	6.18
3,500	84	6.18	3,500	120	6.50
5,000	70	6.18	5,000	100	6.50
			8,000	78	6.50
			10,000	70	6.50

## INSULATED CHOKES



IRC Insulated Chokes are available in two sizes designated as types CLA and CL-1. Both types are fully insulated in molded phenolic housings for full protection against high humidity. The insulated housing also guards

the winding from abrasion and physical damage, and prevents any possibility of shorting to chassis. The wide range of size and characteristic combinations available permits accurate replacement with respect to space and electrical requirements.

TYPE CLA .....LIST 35c each  
TYPE CL-1 .....LIST 35c each

TYPE CLA		TYPE CL-1	
Inductance (Microhenrys)	Approx. "Q" at 12 Mcycles (higher at higher frequencies)	O.C. Resistance (Ohms)	Approx. Self Resonant Frequency (Megacycles)
0.47 $\pm 15\%$	26	0.22 $\pm 30\%$	800
0.56 $\pm 15\%$	25	0.31 $\pm 30\%$	250
0.68 $\pm 15\%$	25	0.44 $\pm 30\%$	260
0.82 $\pm 15\%$	24	0.59 $\pm 30\%$	240
1.0 $\pm 10\%$	24	0.80 $\pm 30\%$	210
1.2 $\pm 10\%$	23	0.85 $\pm 20\%$	190
1.5 $\pm 10\%$	23	1.2 $\pm 20\%$	160
1.8 $\pm 10\%$	22	1.6 $\pm 20\%$	150
2.2 $\pm 10\%$	22	1.8 $\pm 20\%$	180
2.7 $\pm 10\%$	22	2.2 $\pm 10\%$	120
3.8 $\pm 10\%$	21	3.0 $\pm 10\%$	110
0.47 $\pm 15\%$	80	0.14 $\pm 30\%$	220
0.56 $\pm 15\%$	80	0.20 $\pm 30\%$	210
0.68 $\pm 15\%$	80	0.22 $\pm 30\%$	200
0.82 $\pm 15\%$	80	0.27 $\pm 30\%$	190
1.0 $\pm 10\%$	80	0.41 $\pm 30\%$	180
1.2 $\pm 10\%$	80	0.51 $\pm 20\%$	170
1.5 $\pm 10\%$	29	0.72 $\pm 20\%$	160
1.8 $\pm 10\%$	29	0.77 $\pm 20\%$	150
2.2 $\pm 10\%$	29	1.1 $\pm 20\%$	140
2.7 $\pm 10\%$	28	1.5 $\pm 20\%$	130
3.8 $\pm 10\%$	28	2.0 $\pm 20\%$	120
3.9 $\pm 10\%$	27	2.6 $\pm 10\%$	110
4.7 $\pm 10\%$	26	2.8 $\pm 10\%$	95
5.6 $\pm 10\%$	24	4.0 $\pm 10\%$	85
6.8 $\pm 10\%$	22	5.8 $\pm 10\%$	75
8.2 $\pm 10\%$	21	6.1 $\pm 10\%$	70
10.0 $\pm 10\%$	20	8.2 $\pm 10\%$	65
			1460
			1220
			1170
			1060
			860
			770
			660
			620
			520
			460
			390
			340
			320
			270
			280
			280
			190
			2810
			1940
			1860
			1670
			1360
			1210
			1020
			990
			820
			710
			610
			540
			520
			480
			370
			360
			300



# KITS AND CABINETS

*Preferred for Performance*

## ALL-METAL RESIST-O-CABINET

In large steel cabinets, 8 new IRC RESIST-O-CABINETS provide the perfect way to buy and stock resistors. Four drawer cabinets have 28 identified compartments. Blue, yellow and silver finish adds attractiveness to shop. Drawers are non-spill and cabinets can be stacked. Measure 5 3/8" x 6 1/2" x 10 3/4". No extra charge for cabinet.



## ASSORTMENT #4—1/2 WATT

100 1/2 watt BW and BTS Resistors including values most widely found in television. List \$17.00

QUAN-TITY	RANGE	QUAN-TITY	RANGE	QUAN-TITY	RANGE
2	47 ohms	5	4,700 ohms*	5	0.22 meg*
2	100 ohms	5	10,000 ohms*	6	0.27 meg*
2	220 ohms	5	22,000 ohms*	8	0.33 meg*
2	270 ohms	5	27,000 ohms*	6	0.47 meg*
2	470 ohms*	5	33,000 ohms*	6	1.0 meg*
2	1,000 ohms*	5	47,000 ohms*	5	2.2 meg*
2	1,500 ohms*	2	56,000 ohms*	2	3.3 meg*
2	2,200 ohms*	2	68,000 ohms*	2	4.7 meg*
2	2,700 ohms*	6	0.1 meg*	2	10.0 meg
2	3,300 ohms*				

## ASSORTMENT #5—1 WATT

88 1 watt BW and BTA Resistors including values most widely found in television. List \$20.75

QUAN-TITY	RANGE	QUAN-TITY	RANGE	QUAN-TITY	RANGE
2	47 ohms	2	3,300 ohms*	5	0.1 meg*
2	100 ohms	2	4,700 ohms*	2	0.15 meg
2	150 ohms	5	10,000 ohms*	2	0.22 meg
2	220 ohms	2	15,000 ohms*	5	0.27 meg
2	270 ohms	2	22,000 ohms*	5	0.47 meg
2	470 ohms	2	27,000 ohms*	5	1.0 meg*
2	1,000 ohms*	2	33,000 ohms*	2	2.2 meg
2	1,500 ohms*	2	39,000 ohms*	2	4.7 meg
2	2,200 ohms	5	47,000 ohms*		
2	2,700 ohms	2	68,000 ohms*		

## ASSORTMENT #6—COMBINATION

91 Insulated Resistors and Type DCF Close-Tolerance Precistors, including popular television ranges. List \$25.04

RANGE	1/2 WATT	1 WATT	2 WATT	DCF
47 ohms	1	1	1	—
100 ohms	1	1	1	—
150 ohms	1	1	1	—
220 ohms	1	1	1	—
270 ohms	1	1	1	—
470 ohms	1*	1	1	—
1,000 ohms	5*	2*	—	—
1,500 ohms	1*	1	—	—
2,200 ohms	1*	1	—	—
2,700 ohms	1*	1	—	—
3,300 ohms	1*	1	—	—
4,700 ohms	2*	1*	—	—
10,000 ohms	1*	1*	1	—
15,000 ohms	1*	1*	1	—
22,000 ohms	1*	1*	1*	—
27,000 ohms	1*	1*	1*	—
33,000 ohms	1*	1*	1*	—
39,000 ohms	1*	1*	1*	—
47,000 ohms	2*	1*	—	—
68,000 ohms	2*	1*	—	—
0.1 meg	3*	—	—	1
0.15 meg	1	—	—	—
0.22 meg	3*	—	—	—
0.27 meg	3*	—	—	—
0.47 meg	3*	—	—	—
1.0 meg	3*	—	—	1
2.2 meg	1*	—	—	—
3.3 meg	1*	—	—	—
4.7 meg	1*	—	—	—
10 meg	—	—	—	1

\*Popular television ranges.

## IRC CHOKE CABINETS

Handy bench supply of Insulated Chokes in 4 drawer metal cabinet. Each value in an identified compartment. Contains 140 chokes in popular values and 2 sizes. No extra charge for cabinet. List \$49.00



## NEW RESIST-O-KITS

Flat, pocket-size metal kit of 1/2 or 1 watt BT Insulated Composition Resistors is ideal for service calls or small bench stocks. All-steel and attractively lithographed in blue and yellow. Measures 4 1/2" x 3 3/4" x 6 3/8". Ten compartments prevent ranges from mixing, and lid snaps securely shut. Ranges are clearly marked on each resistor in kit. This handy kit is furnished at no extra charge.



## ASSORTMENT #7—1/2 WATT

45 BTS 1/2 watt Resistors including ranges widely found in television. List \$7.65

Quantity	Resistance Range	Quantity	Resistance Range
4	1,000 ohms*	8	0.22 meg*
8	4,700 ohms*	6	0.27 meg*
4	10,000 ohms*	6	0.47 meg*
6	47,000 ohms*	6	1.0 meg*
6	0.1 meg*	4	2.2 meg*

## ASSORTMENT #8—1 WATT

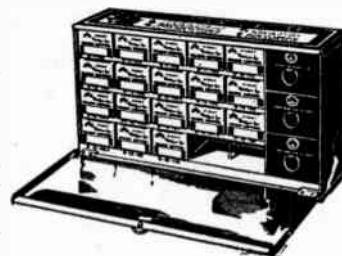
80 BTA 1 watt Resistors including ranges widely found in television. List \$7.50

Quantity	Resistance Range	Quantity	Resistance Range
4	1,000 ohms*	4	47,000 ohms*
2	2,200 ohms*	4	0.1 meg*
2	4,700 ohms*	2	0.27 meg*
8	10,000 ohms*	4	0.47 meg*
2	27,000 ohms*	8	1.0 meg*

\*Popular television ranges.

## VOLUME CONTROL CABINET

IRC Volume Control Cabinets are stocked with 18 new Type Q Controls, plus switches and special shafts. This stock handles over 90% of all AM, FM and TV control replacements. Beautiful blue, yellow and silver metal cabinet measures 4 1/2" x 7 3/8" x 14 1/2" with identified compartments and 3 drawers for shafts, switches and spare parts. Hinged front cover. No extra charge is made for metal cabinet. List \$30.50



Quantity	Q Control No.	Resistance Value	Quantity	Q Control No.	Resistance Value
1	Q 11-116	10 K	2	Q 13-133	0.5 meg
1	Q 11-123	50 K	1	Q 13-133X	0.5 meg
1	Q 13-123	50 K	1	Q 13-137	1.0 meg
1	Q 11-128	0.1 meg	1	Q 13-137	1.0 meg
1	Q 13-128	0.1 meg	1	Q 13-137X	1.0 meg
1	Q 11-130	0.25 meg	1	Q 13-139	2.0 meg
1	Q 13-130	0.25 meg	1	Q 13-139X	2.0 meg
1	Q 13-130X	0.25 meg	1	Q 13-139X	2.0 meg
1	Q 11-133	0.5 meg	1		

## SWITCHES

6 76-1 SPST Quickly attached switch.

## SPECIAL SHAFTS

- 1 BQ Shaft—Universal slotted and tongued—3/8" long.
- 1 GQ Shaft—Short slotted shaft—1 1/2" long.
- 2 HQ Shaft—Flatted and grooved shaft—1 1/4" long.
- 1 NQ Shaft—Universal flatted and slotted shaft—1/8" diameter.

## IRC BASIC KIT

Serviceman's Special Resistor Assortment in strong metal cabinet. Hinged front and 6 compartment drawer give extra stocking convenience. Complete stock of 1/2, 1 and 10 watt resistors, plus selection of Q controls, switches and shafts. Ample space for capacitors, bulbs, solder, small tools and spare parts. No extra charge for metal cabinet. List \$83.21

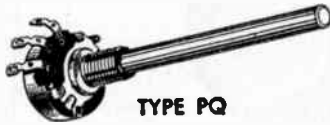


160	BTS resistors	2—#41 switches	1—D18-137X control
115	BTA resistors	1—#42 switch	1—D18-139 control
60	BW 1/2 resistors	4—D18-133 controls	2—"E" shafts
20	BW-1 resistors	1—D18-133X control	1—"H" shaft
22	AB pwr. resistors	1—D18-137 control	

# RESISTORS AND CONTROLS FOR INDUSTRY



## TYPE PQ AND RQ DISTRIBUTOR CONTROLS FOR INDUSTRY



TYPE PQ



RQ

IRC Distributor Controls for industry offer commercial users a wide selection of resistance values and two industrial shaft types. Shafts are fixed. This combination of wide selection of values and speedy Distributor delivery holds many advantages for industrial purchasers. These Industrial Controls are adaptations of the new, compact  $\frac{1}{8}$ " Q Control. Power rating is  $\frac{1}{2}$  watt, 500 volts maximum. Electrical rotation is the same with or without switch.  $\frac{3}{8}$ " bushing is brass and held to close tolerance for snug shaft fit. Brass terminals are heavily tinned for easy soldering, and may be bent without becoming noisy. Two locating lugs are provided, either or both of which may be bent down if not needed. Molded base is blue. Premium salt spray materials are used. Both Types PQ and RQ are supplied in 5 standard tapers.

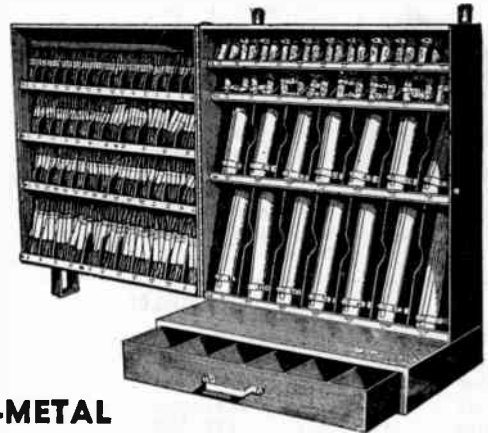
**TYPE PQ.** Full round  $\frac{1}{4}$ " shaft, approximately 3" from mounting face, with  $\frac{3}{8}$ " long bushing. 19 stock values and 13 additional ranges as shown below. Regular IRC stock numbers are used with prefix PQ. List \$1.25

**TYPE RQ.** Very short screw-driver slot shaft,  $\frac{1}{4}$ " diameter and approximately  $\frac{1}{2}$ " long from mounting face with  $\frac{3}{8}$ " long bushing. Available in 32 values as shown. Regular IRC stock numbers are used with prefix RQ. List \$1.25

### STANDARD VALUES

TYPE PQ	TYPE RQ	RESISTANCE IN OHMS	TAPER
PQ11-103	*RQ11-103	500	A
PQ11-108	*RQ11-108	1K	A
*PQ11-110	*RQ11-110	2K	A
*PQ11-112	*RQ11-112	3K	A
PQ11-114	*RQ11-114	5K	A
*PQ11-115	*RQ11-115	7.5K	A
PQ11-116	*RQ11-116	10K	A
*PQ13-116	R 13-116	10K	C
*PQ14-116	*RQ14-116	10K	D
*PQ11-119	*RQ11-119	20K	A
PQ11-120	*RQ11-120	25K	A
*PQ14-120	*RQ14-120	25K	D
*PQ11-121	*RQ11-121	30K	A
PQ11-123	*RQ11-123	50K	A
PQ13-123	*RQ13-123	50K	C
*PQ14-123	*RQ14-123	50K	D
PQ11-128	*RQ11-128	0.1 meg	A
PQ13-128	*RQ13-128	0.1 meg	C
PQ11-130	*RQ11-130	0.25 meg	A
PQ13-130	*RQ13-130	0.25 meg	C
PQ11-133	*RQ11-133	0.5 meg	A
PQ13-133	*RQ13-133	0.5 meg	C
PQ11-137	*RQ11-137	1.0 meg	A
PQ13-137	*RQ13-137	1.0 meg	C
*PQ11-138	*RQ11-138	1.5 meg	A
PQ11-139	R 11-139	2.0 meg	A
PQ13-139	*RQ13-139	2.0 meg	C
*PQ11-239	*RQ11-239	2.5 meg	A
*PQ11-140	*RQ11-140	3.0 meg	A
*PQ13-140	*RQ13-140	3.0 meg	C
PQ11-141	R 11-141	5.0 meg	A
PQ11-143	*RQ11-143	10.0 meg	A

\*—Not carried in stock. In general, two weeks required for delivery.



## ALL-METAL IRC BASIC KIT

The IRC Basic Kit is an all-metal cabinet containing a carefully selected general resistor stock. It is ideal for test labs, broadcast stations, research development and engineering departments, and similar commercial and industrial operations. Assortments are so arranged that a shortage of stock in one range can usually be compensated for by using two other ranges in series or parallel. Additional adjustable bands are included for use in making bleeder sections.

Cabinet is beautifully finished in blue and yellow, and is so designed that it may be hung on the wall or set on bench. Hinged front cover snaps securely shut, and a six compartment drawer is built into the base. Individually identified sections separate each range and resistor type.

## FACTORY PACKED WITH WIDE VARIETY RESISTOR STOCK

BTS	—10 each—1,000, 2,200, 4,700, 10,000, 15,000, 22,000, 27,000, 47,000, 75,000 ohm; 0.1 meg., 0.22 meg., 0.47 meg., 1.0 meg., 2.2 meg., 10.0 meg., 15.0 meg.
BTA	—6 each—470, 1,000, 1,500, 2,200, 3,600, 4,700, 22,000, 36,000, 75,000 ohm. 10 each—10,000, 15,000, 47,000 ohm; 0.1 meg., 0.24 meg., 0.47 meg., 1 meg.
BW-1/2	—10 each—100, 150, 220, 330, 470, 560 ohm.
BT-2..	—5 each—1,000, 2,200, 4,700, 10,000, 22,000, 47,000 ohm; 0.1 meg.
BW-1	—5 each—47, 82, 100, 270 ohm.
BW-2	—5 each—47, 82, 100, 270 ohm.
AB	—2 each—100, 250, 500, 750, 1,000, 1,500, 2,500, 5,000, 10,000 ohm. 2 each—15,000, 25,000 ohm.
ABA	—2 each—100, 250, 500, 1,000, 1,500, 2,500, 5,000, 10,000 ohm.
EPA	—1 each—1,000, 1,500, 2,500, 5,000 ohm. 1 each—10,000, 25,000 ohm.
ESA	—1 each—1,000, 1,500, 2,500, 5,000 ohm. 1 each—10,000, 25,000, 50,000 ohm. 6 "X-8" Bands.
MW-2J	—2 each—10, 20, 50, 100 ohm.
M1034	—2 each.

LIST \$138.68

ALL-METAL CABINET FURNISHED  
AT NO EXTRA COST



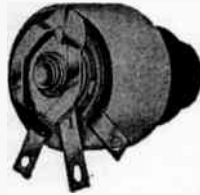
# HARDWICK-HINDLE INC.



## VITREOUS ENAMELED RHEOSTATS INSULATED SHAFTS and MOUNTING BUSHINGS



TYPE 2462-F—Designed for relatively low wattage requirements. Resistance wire is wound upon a heat resisting phenolic strip. The wound strip is rigidly attached to a refractory base. Contact arm of beryllium copper—gives uniform pressure, smooth action and long life.



TYPE M (Style 2879-3TC)—Rugged and compact. Has exceptional heat dissipation. Resistance wire is wound on a pure mica form, in a refractory base and embedded in vitreous enamel, bonding winding and base together. A small area of winding is free of enamel for contact purposes. Smooth action metallic contactor.



TYPES B-50, C-100, D-150, E-300 and F-500 embody the latest developments. Contact system separates current handling and contact pressure. Copper-graphite contact brush in porcelain holder travels on inside of winding. Wound ring and contact system assembled to metal base—gives great rigidity, lower panel temperatures.

### TABLES OF SIZES AND RATINGS OF RHEOSTATS

TYPE 2462-F—10 W. RHEOSTAT				TYPE M—25 WATT RHEOSTAT				TYPE B—50 WATT RHEOSTAT				TYPE C—100 WATT RHEOSTAT			
Stock No.	Total Ohms	Max. Amps.*	List Price	Stock No.	Total Ohms	Max. Amps.*	List Price	Stock No.	Total Ohms	Max. Amps.*	List Price	Stock No.	Total Ohms	Max. Amps.*	List Price
0101	1	3.16	\$3.85	0201	0.50	7.06	\$4.90	0301	0.50	10.0	\$6.50	0401	0.50	14.2	\$9.75
0102	1.5	2.58	3.85	0202	0.75	5.77	4.90	0302	0.75	8.16	6.50	0402	0.75	11.6	9.75
0103	2.5	2.00	3.85	0203	1.0	5.00	4.90	0303	1.0	7.06	6.50	0403	1.0	10.0	9.75
0104	5	1.42	3.85	0204	1.5	4.08	4.20	0304	1.5	5.77	6.50	0404	1.5	8.16	9.75
0105	7.5	1.16	3.85	0205	2.5	3.16	4.20	0305	2.5	4.48	5.85	0405	2.5	6.34	9.75
0106	10	1.00	3.85	0206	5.0	2.22	4.20	0306	5.0	3.16	5.85	0406	5.0	4.48	9.75
0107	15	0.815	3.85	0207	7.5	1.82	4.20	0307	7.5	2.58	5.85	0407	7.5	3.66	9.10
0108	25	0.634	3.85	0208	10	1.58	4.20	0308	10	2.22	5.85	0408	10	3.16	9.10
0109	50	0.448	3.85	0209	15	1.29	4.20	0309	15	1.82	5.85	0409	15	2.58	9.10
0110	75	0.366	3.85	0210	25	1.00	4.20	0310	25	1.41	5.85	0410	25	2.00	9.10
0111	100	0.316	3.85	0211	50	0.706	4.20	0311	50	1.00	5.85	0411	50	1.42	9.10
0112	150	0.258	3.85	0212	75	0.577	4.20	0312	75	0.816	5.85	0412	75	1.16	9.10
0113	250	0.200	3.85	0213	100	0.500	4.20	0313	100	0.706	5.85	0413	100	1.00	9.10
0114	500	0.142	3.85	0214	150	0.408	4.20	0314	150	0.577	5.85	0414	150	0.816	9.10
0115	750	0.116	3.85	0215	250	0.316	4.20	0315	250	0.488	5.85	0415	250	0.634	9.10
0116	1000	0.100	3.92	0216	500	0.222	4.20	0316	500	0.316	5.85	0416	500	0.448	9.10
0117	1500	0.081	3.92	0217	750	0.182	4.20	0317	750	0.258	6.18	0417	750	0.366	9.10
0118	2500	0.063	3.92	0218	1000	0.158	4.90	0318	1000	0.222	6.18	0418	1000	0.316	9.75
				0219	1500	0.129	4.90	0319	1500	0.182	6.18	0419	1500	0.258	9.75
				0220	2500	0.100	4.90	0320	2500	0.141	6.18	0420	2500	0.200	9.75
				0221	5000	0.070	4.90	0321	5000	0.100	6.50	0421	5000	0.141	10.40
								0322	7500	0.082	6.50	0422	7500	0.115	11.05
								0323	10000	0.070	6.50	0423	10000	0.100	11.70

\*Thru all or any part of winding. Diameter: 1 3/4". Depth Behind Panel: 3/4". Mounting: Single 3/8" Diameter Hole. Standard Bushing for Panels up to 3/16".

\*Thru all or any part of winding. Diameter: 1 3/4". Depth Behind Panel: 1 3/4". Mounting: Single 3/8" Diameter Hole. Standard Bushing for Panels up to 3/16".

\*Thru all or any part of winding. Diameter: 2 1/4". Depth Behind Panel: 1". Mounting: Single 3/8" Diameter Hole. Standard Bushing for Panels up to 3/16".

\*Thru all or any part of winding. Diameter: 3 1/8". Depth Behind Panel: 1 3/4". Mounting: Single 3/8" Diameter Hole. Standard Bushing for Panels up to 1/4".

TYPE D—150 WATT RHEOSTAT				TYPE E—300 WATT RHEOSTAT				TYPE F—500 WATT RHEOSTAT			
Stock No.	Total Ohms	Max. Amps.*	List Price	Stock No.	Total Ohms	Max. Amps.*	List Price	Stock No.	Total Ohms	Max. Amps.*	List Price
0501	0.50	15.00	\$12.35	0601	1.0	17.25	\$17.55	0701	1.0	22.3	\$25.35
0502	0.75	14.10	12.35	0602	1.5	14.15	17.55	0702	1.5	18.2	25.35
0503	1.00	12.25	12.35	0603	2.5	10.95	17.55	0703	2.5	14.1	25.35
0504	1.5	10.00	12.35	0604	5.0	7.75	17.55	0704	5.0	10.0	25.35
0505	2.5	7.75	12.35	0605	7.5	6.32	17.55	0705	7.5	8.17	25.35
0506	5.0	5.48	12.35	0606	10	5.48	17.55	0706	10	7.07	25.35
0507	7.5	4.47	12.35	0607	15	4.47	17.55	0707	15	5.77	25.35
0508	10	3.88	11.70	0608	25	3.46	17.55	0708	25	4.47	25.35
0509	15	3.16	11.70	0609	50	2.45	17.55	0709	50	3.16	25.35
0510	25	2.45	11.70	0610	75	2.00	17.55	0710	75	2.58	25.35
0511	50	1.73	11.70	0611	100	1.73	17.55	0711	100	2.23	25.35
0512	75	1.41	11.70	0612	150	1.41	17.55	0712	150	1.82	25.35
0513	100	1.22	11.70	0613	250	1.09	17.55	0713	250	1.41	25.35
0514	150	1.00	11.70	0614	500	0.775	17.55	0714	500	1.00	25.35
0515	250	0.775	11.70	0615	750	0.633	17.55	0715	750	.817	25.35
0516	500	0.548	11.70	0616	1000	0.548	17.55	0716	1000	.707	25.35
0517	750	0.447	12.35	0617	1500	0.449	17.55	0717	1500	.577	25.35
0518	1000	0.388	12.35	0618	2500	0.346	17.55	0718	2500	.447	25.35
0519	1500	0.316	12.35								
0520	2500	0.245	13.00								
0521	5000	0.173	13.65								
0522	7500	0.141	14.30								
0523	10000	0.122	15.60								

\*Thru all or any part of winding. Diameter: 4". Depth Behind Panel: 1 3/4". Mounting: Single 3/8" Diameter Hole. Standard Bushing for Panels up to 1/4" or 2 4-32 Screws, Each 7/8" from Center of Shaft.

\*Thru all or any part of winding. Diameter: 6". Depth Behind Panel: 2 1/4". Mounting: 2 1/4-20 Screws, Each 1-3/16" from Center of Shaft.

\*Thru all or any part of the winding. Diameter: 8". Depth Behind Panel: 2 1/2". Mounting: 2 1/4-20 Screws, Each 1 1/2" from Center of Shaft.

RATING—CURRENT RATINGS SHOWN FOR ALL RHEOSTATS ARE FOR USE IN FREE AIR. WHEN UNITS ARE ENCLOSED VALUES SHOULD BE REDUCED ABOUT 50%.

DATA ON NON-STOCK RHEOSTATS—SPECIAL SHAFTS AND BUSHINGS; VALUES INTERMEDIATE TO THOSE LISTED; TAPERED WINDINGS; TANDEM ASSEMBLIES, ETC., FURNISHED UPON REQUEST.



# HARDWICK-HINDLE INC.



## FIXED VITREOUS ENAMELED RESISTORS WITH MOUNTING BRACKETS

Five stock sizes fill a great variety of applications. Ratings are in accordance with NEMA standards, being based on a temperature rise of 250° C. in free air. Data on types, sizes and values not listed herein, and for resistors with intermediate taps, special mountings, etc., furnished upon request.



### TABLE OF RATINGS

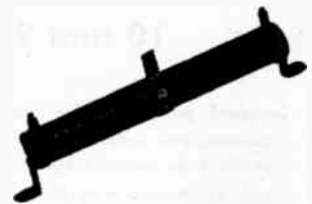
25 WATT SIZE Type 2P5 2" Long x 3/8" O.D. Mounting Centers 2 1/2"			40 WATT SIZE Type 3 1/2 L5 3 1/2" Long x 3/4" O.D. Mounting Centers 4"			80 WATT SIZE Type 6 1/2 L5 6 1/2" Long x 3/4" O.D. Mounting Centers 7"			160 WATT SIZE Type 8 1/2 FX5 8 1/2" Long x 1 1/8" O.D. Mounting Centers 9 3/8"			200 WATT SIZE Type 10 1/2 FX5 10 1/2" Long x 1 1/8" O.D. Mounting Centers 11 3/8"		
Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price
1001	5	\$.80	2001	5	\$1.37	3001	5	\$2.03	4001	5	\$3.47	5001	5	\$3.75
1002	10	.80	2002	10	1.37	3002	10	2.03	4002	10	2.48	5002	10	2.70
1003	25	.80	2003	25	1.37	3003	25	2.03	4003	25	2.48	5003	25	2.70
1004	50	.80	2004	50	1.37	3004	50	2.03	4004	50	2.48	5004	50	2.70
1005	75	.80	2005	75	1.37	3005	75	2.03	4005	75	2.48	5005	75	2.70
1006	100	.80	2006	100	1.37	3006	100	2.03	4006	100	2.48	5006	100	2.70
1007	150	.80	2007	150	1.37	3007	250	2.03	4007	150	2.48	5007	150	2.70
1008	200	.80	2008	200	1.37	3008	500	2.03	4008	250	2.48	5008	250	2.70
1009	250	.80	2009	250	1.37	3009	1000	2.03	4009	500	2.48	5009	500	2.70
1010	500	.80	2010	500	1.37	3010	1500	2.08	4010	750	2.48	5010	750	2.70
1011	750	.80	2011	750	1.37	3011	2000	2.08	4011	1000	2.48	5011	1000	2.70
1012	1000	.80	2012	1000	1.37	3012	2500	2.08	4012	1500	2.53	5012	1500	2.75
1013	1500	.86	2013	1500	1.45	3013	3000	2.08	4013	2000	2.53	5013	2000	2.75
1014	2000	.86	2014	2000	1.45	3014	4000	2.08	4014	2500	2.53	5014	2500	2.75
1015	2500	.86	2015	2500	1.45	3015	5000	2.08	4015	3000	2.53	5015	3000	2.75
1016	3000	.86	2016	3000	1.45	3016	7500	2.25	4016	5000	2.53	5016	5000	2.75
1017	3500	.86	2017	4000	1.45	3017	10000	2.25	4017	7500	2.75	5017	7500	2.95
1018	4000	.86	2018	5000	1.45	3018	15000	2.47	4018	10000	2.75	5018	10000	2.95
1019	5000	.86	2019	7500	1.58	3019	20000	2.47	4019	15000	2.95	5019	15000	3.13
1020	6000	.94	2020	10000	1.58	3020	25000	2.67	4020	20000	2.95	5020	20000	3.13
1021	7500	.94	2021	12500	1.75	3021	30000	2.67	4021	25000	3.03	5021	25000	3.25
1022	10000	.94	2022	15000	1.75	3022	35000	2.67	4022	30000	3.03	5022	30000	3.25
1023	12000	1.00	2023	20000	1.75	3023	40000	2.67	4023	40000	3.03	5023	40000	3.25
1024	15000	1.00	2024	25000	1.95	3024	50000	2.81	4024	50000	3.13	5024	50000	3.34
1025	20000	1.00	2025	35000	1.95	3025	60000	2.81	4025	75000	3.36	5025	75000	3.55
1026	25000	1.13	2026	50000	2.14	3026	75000	3.00	4026	100000	3.55	5026	100000	3.75

## ADJUSTABLE VITREOUS ENAMELED RESISTORS WITH MOUNTING BRACKETS

Embedding features originated by Hardwick, Hindle, Inc., resulting in a Resistor possessing the many advantages of Vitreous Enamel Construction, plus an adjustable feature.

The winding is closely and evenly spaced, assuring ample insulation between turns. Where the winding appears exposed in the track, its underside is tightly embedded in the enamel, the upper surface only being exposed for contact with the adjustable band.

All sizes of Adjustable Resistors listed herein are furnished complete with mounting brackets and with one adjustable contact band.



### TABLE OF RATINGS

25 WATT SIZE Type K-25 2" Long x 3/8" O.D. Mount. Centers 2 1/2"			50 WATT SIZE Type K-50 4 1/2" Lng. x 3/4" O.D. Mount. Centers 5"			75 WATT SIZE Type K-75 6" Long x 3/4" O.D. Mount. Centers 6 1/2"			100 WATT SIZE Type K-100 6 1/2" Lng. x 1 1/8" O.D. Mount. Centers 7 3/8"			160 WATT SIZE Type K-160 8 1/2" Lng. x 1 1/8" O.D. Mount. Centers 9 3/8"			200 WATT SIZE Type K-200 10 1/2" Lng. x 1 1/8" O.D. Mount. Centers 11 3/8"		
Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price
6001	1	\$1.56	7001	5	\$1.97	8001	5	\$2.27	9001	5	\$2.97	9030	5	\$4.45	9060	5	\$4.72
6002	2	1.56	7002	10	1.97	8002	10	2.27	9002	10	2.97	9031	10	3.45	9061	10	3.64
6003	3	1.56	7003	25	1.97	8003	15	2.27	9003	25	2.97	9032	25	3.45	9062	25	3.64
6004	5	1.56	7004	50	1.97	8004	25	2.27	9004	50	2.97	9033	50	3.45	9063	50	3.64
6005	10	1.56	7005	75	1.97	8005	50	2.27	9005	100	2.97	9034	100	3.45	9064	100	3.64
6006	20	1.56	7006	100	1.97	8006	100	2.27	9006	250	2.97	9035	250	3.45	9065	250	3.64
6007	25	1.56	7007	200	1.97	8007	200	2.27	9007	500	2.97	9036	500	3.45	9066	500	3.64
6008	50	1.56	7008	250	1.97	8008	300	2.27	9008	1000	2.97	9037	1000	3.45	9067	1000	3.64
6009	75	1.56	7009	300	1.97	8009	400	2.27	9009	1500	3.05	9038	1500	3.50	9068	2500	3.70
6010	100	1.56	7010	400	1.97	8010	500	2.27	9010	2500	3.05	9039	2500	3.50	9069	5000	3.70
6011	200	1.56	7011	500	1.97	8011	750	2.27	9011	5000	3.05	9040	5000	3.50	9070	10000	3.92
6012	300	1.56	7012	750	1.97	8012	1000	2.27	9012	10000	3.22	9041	10000	3.70	9071	15000	4.12
6013	400	1.56	7013	800	1.97	8013	1500	2.36	9013	15000	3.42	9042	15000	3.92	9072	20000	4.12
6014	500	1.56	7014	1000	1.97	8014	2000	2.36	9014	20000	3.42	9043	20000	3.92	9073	25000	4.20
6015	750	1.56	7015	1500	2.05	8015	2500	2.36	9015	25000	3.64	9044	25000	4.00	9074	30000	4.20
6016	800	1.56	7016	2000	2.05	8016	3000	2.36	9016	30000	3.64	9045	30000	4.00	9075	40000	4.20
6017	1000	1.56	7017	2500	2.05	8017	4000	2.36	9017	40000	3.64	9046	40000	4.00	9076	50000	4.30
6018	1250	1.58	7018	3000	2.05	8018	5000	2.36	9018	50000	3.78	9047	50000	4.12	9077	75000	4.53
6019	1500	1.58	7019	4000	2.05	8019	6000	2.50	9019	75000	3.97	9048	75000	4.30	9078	100000	4.72
6020	2000	1.58	7020	5000	2.05	8020	7000	2.50	9020	100000	4.13	9049	100000	4.53			
6021	2500	1.58	7021	6000	2.19	8021	7500	2.50									
6022	3000	1.58	7022	7000	2.19	8022	10000	2.50									
6023	3500	1.58	7023	7500	2.19	8023	15000	2.45									
6024	4000	1.58	7024	8000	2.19	8024	20000	2.65									
6025	5000	1.58	7025	9000	2.19	8025	25000	2.92									
6026	6000	1.70	7026	10000	2.19	8026	30000	2.92									
6027	7000	1.70	7027	12000	2.36	8027	40000	2.92									
6028	8000	1.70	7028	15000	2.36	8028	50000	3.00									
6029	10000	1.70	7029	20000	2.36	8029	60000	3.00									
6030	15000	1.75	7030	25000	2.55	8030	80000	3.28									
6031	20000	1.75	7031	30000	2.55	8031	100000	3.61									
6032	25000	1.89	7032	40000	2.55												
			7033	50000	2.75												

### ADJUSTABLE CONTACT BANDS

SCREW TYPE	Diameter of Resistor	Stock No.	List Price
	3/8"	1791-4	.20
	1/2"	1793-4	.25
SAKELITE TYPE KNOB	3/8"	1791-4-X	.30
	1/2"	1793-4-X	.40

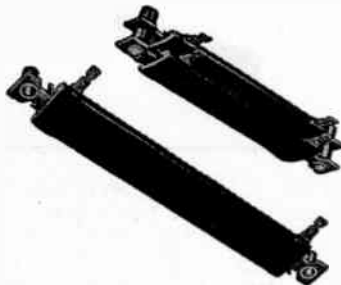




# HARDWICK-HINDLE INC.



## BLUE RIBBON RESISTORS



The standard method of mounting Blue Ribbon Resistors is by means of an aluminum thru-bar, which is in intimate contact with the entire internal surface of the ceramic core. The presence of this thru-bar distributes the heat generated by the Resistor uniformly along its entire length, substantially spreading the hot spot normally encountered in tubular resistors with conventional mounting. Mounting studs riveted to the ends of the thru-bar further tend to conduct the heat to the mounting surfaces. These mounting studs are also designed to act as spacers when two or more units are stacked.

In comparison with tubular units of equivalent wattage rating Blue Ribbon Resistors have the following advantages: Higher wattage rating per unit space requirement. Substantial reduction in depth behind mounting surface. Ease and economy of mounting—either singly or stacked. Lower inductance. Light weight. Resistor and mounting integral unit; cannot rotate or become loose.

### TABLE OF RATINGS

TYPE 1 1/4" B 30 Watt Rating* Mounting Centers 2"			TYPE 2" B 40 Watt Rating* Mounting Centers 2 3/4"			TYPE 3 1/2" B 55 Watt Rating* Mounting Centers 4 1/4"			TYPE 6" B 75 Watt Rating* Mounting Centers 6 3/4"		
Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price
B101	5	\$1.53	B201	5	\$1.61	B301	5	\$1.85	B601	5	\$2.30
B102	10	1.53	B202	10	1.61	B302	10	1.85	B602	10	2.30
B103	15	1.53	B203	15	1.61	B303	15	1.85	B603	15	2.30
B104	25	1.53	B204	25	1.61	B304	25	1.85	B604	25	2.30
B105	50	1.53	B205	50	1.61	B305	50	1.85	B605	50	2.30
B106	100	1.53	B206	100	1.61	B306	100	1.85	B606	100	2.30
B107	150	1.53	B207	150	1.61	B307	150	1.85	B607	150	2.30
B108	250	1.53	B208	250	1.61	B308	250	1.85	B608	250	2.30
B109	500	1.53	B209	500	1.61	B309	500	1.85	B609	500	2.30
B110	1000	1.53	B210	1000	1.61	B310	1000	1.85	B610	1000	2.30
B111	1500	1.53	B211	1500	1.61	B311	1500	1.85	B611	1500	2.30
B112	2500	1.53	B212	2500	1.61	B312	2500	1.85	B612	2500	2.30
B113	5000	1.65	B213	5000	1.72	B313	5000	1.96	B613	5000	2.41
B114	10000	1.65	B214	10000	1.93	B314	10000	2.17	B614	10000	2.61
			B215	15000	2.02	B315	15000	2.26	B615	15000	2.70
						B316	25000	2.48	B616	25000	2.93
									B617	50000	3.30

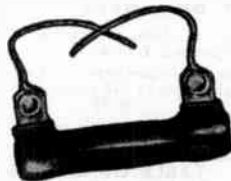
\*This rating based on a maximum temperature rise of 250 degrees C. with the Resistor mounted horizontally on a 10" x 10" x .040" steel plate supported horizontally 1/2" above a wooden surface.

When Resistors are mounted on a non-metallic base the nominal watt rating should be reduced by approximately 15%.

All stock numbers in each type listed above are available with adjustable feature complete with one movable contact band.

## 10 and 20 WATT FIXED VITREOUS ENAMELED RESISTORS

Designed particularly for radio service and replacement use—conservatively rated—wound upon Steatite Tube—combination lug and pigtail terminal connections—Hardwick, Hindle vitreous



enamel insulation, insuring permanence of value and proof against moisture. 10 watt and 20 watt sizes available in the range of resistance values shown.

### TABLE OF RATINGS

10 WATT 1 1/4" Long x 3/8" O.D.			20 WATT 2" Long x 1/2" O.D.								
Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price	Stock No.	Ohms	List Price
A101	1	\$.58	A119	1500	\$.63	A201	5	\$.75	A219	4000	\$.78
A102	3	.58	A120	2000	.63	A202	10	.75	A220	5000	.78
A103	5	.58	A121	2500	.63	A203	25	.75	A221	6000	.88
A104	7.5	.58	A122	3000	.63	A204	50	.75	A222	7500	.88
A105	10	.58	A123	4000	.63	A205	75	.75	A223	10000	.88
A106	15	.58	A124	5000	.63	A206	100	.75	A224	12500	.94
A107	25	.58	A125	7500	.72	A207	150	.75	A225	15000	.94
A108	50	.58	A126	10000	.72	A208	200	.75	A226	25000*	1.08
A109	75	.58	A127	12500*	.80	A209	250	.75	A227	35000*	1.08
A110	100	.58	A128	15000*	.80	A210	400	.75	A228	40000*	1.08
A111	150	.58	A129	20000*	.80	A211	500	.75	A229	50000*	1.25
A112	200	.58	A130	25000*	.86	A212	750	.75	A230	60000*	1.25
A113	250	.58	A131	30000*	.97	A213	1000	.75	A231	70000*	1.46
A114	400	.58	A132	35000*	.97	A214	1250	.78	A232	75000*	1.46
A115	500	.58	A133	40000*	.97	A215	1500	.78	A233	80000*	1.46
A116	750	.58	A134	45000*	.97	A216	2000	.78	A234	90000*	1.69
A117	1000	.58	A135	50000*	.97	A217	2500	.78	A235	100000*	1.69
A118	1250	.63				A218	3000	.78			

\* Low Temperature Enamel.

\* Low Temperature Enamel.

### MADE TO ORDER PRODUCTS

In addition to the standard line of resistor and rheostat products, which are in stock for immediate shipment, Hardwick, Hindle, Inc., is always pleased to receive orders for made to order products, such as, Non-inductive vitreous enamelled resistors, Radio frequency chokes, Power line chokes and Soldering Iron controls.

Non-inductive resistors are available in three standard sizes: 25,

50 and 100 watt.

Radio frequency chokes and Power line chokes are also available in three standard sizes.

Soldering iron controls and Photographic lamp controls are made to order in ten different sizes.

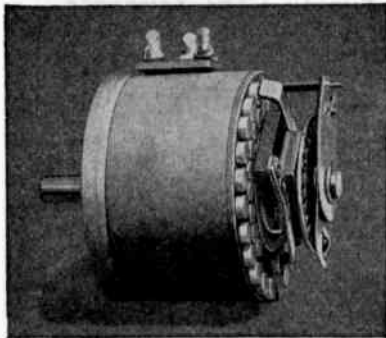
Data on the above products can be furnished upon request.

**ELECTRICAL  
INSTRUMENTS**

**RESISTORS  
VARIABLE  
ATTENUATORS  
SWITCHES**

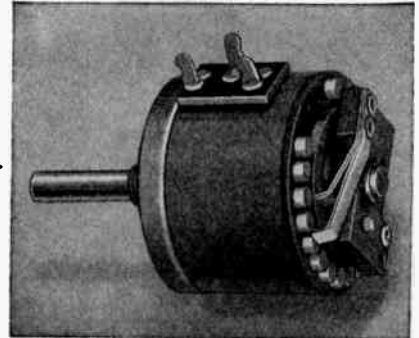
**SHALLCROSS MANUFACTURING CO.**  
COLLINGDALE, PENNSYLVANIA

## SHALLCROSS AUDIO ATTENUATORS



SHALLCROSS  
ATTENUATOR  
NO.  
420-2B2

SHALLCROSS  
ATTENUATOR  
NO.  
C720-2A3



### These Shallcross Features Mean

- ✓ BETTER PERFORMANCE
- ✓ BIGGER VALUE

- ✓ Off position attenuation well in excess of 100 db.
- ✓ 25% to 50% fewer soldered joints.
- ✓ Noise level ratings that are factual. (130 db or more below zero level).
- ✓ Non-inductive Shallcross precision resistors used throughout assure flat attenuation to and beyond 30 kc.
- ✓ Types and sizes engineered for all needs. Attenuation accuracies of 1%, resistor accuracies of 0.1%, on special order.

Shallcross Audio Attenuators are available in either variable or fixed units, the former often being referred to as a "control" and the latter, as a "pad".

Controls are available with as few as 5 steps or as many as 52 steps with an attenuation as small as 0.1 db per step. The total attenuation for a single control does not exceed about 125 db since such high attenuation approaches the noise level of the switching mechanism.

The complete story of Shallcross attenuators may be found in Shallcross Engineering Bulletin #4, copies of which are available on request. Specifications and prices are given below for a few of the most popular variable attenuators.

**IMPEDANCE:** 150, 500, 250/500, 600 ohms, except potentiometers, which are 100,000 and 250,000 ohms.

**RESISTORS:** All non-inductively wirewound,  $\pm 5\%$  tolerance, except types preceded with "C", which are composition selected to  $\pm 5\%$ .

**ATTENUATION:** Increases for counter-clockwise rotation of knob and of shaft.

**FREQUENCY RESPONSE:** Flat over entire audio range.

**SWITCH MECHANISM:** Multi-leaf wiper arms collector rings and contacts available in tarnish resistant silver alloy or brass. Noise level -130 db.

**DETENT:** Indexing mechanism available on any unit for \$0.50 list. Back of panel depth is then increased 5/16".

**DIALS:** \$1.00 list each additional.

**KNOBS (VA-16906):** \$0.50 list each additional.

**120-2A3**  
\$8.00 silver  
7.00 brass

Ladder attenuator, 20 steps, 2 db per step, tapered on last 3 steps to off. MOUNTING: single hole,  $\frac{3}{8}$ "-32 threaded bushing or two hole, 6-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $1\frac{1}{2}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 15°.

**C720-2A3**  
\$8.00 silver  
7.00 brass

Potentiometer, 20 steps, 2 db per step, tapered on last 3 steps to off. MOUNTING: single hole,  $\frac{3}{8}$ "-32 threaded bushing or two hole, 6-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $1\frac{1}{2}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 15°.

**182-1.5B3**  
\$13.50 silver  
12.00 brass

Ladder attenuator, 32 steps, 1.5 db per step, tapered on last 3 steps to off. MOUNTING: two hole, 6-32 or 8-32 screws,  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 10°.

**430-1C1**  
\$21.00 silver  
19.00 brass

Bridged T attenuator, 30 steps, 1 db. per step, 30 db total. MOUNTING: two hole, 6-32 or 8-32 screws,  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " centers. DIMENSIONS:  $2\frac{1}{2}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 11 $\frac{1}{4}$ °.

**432-1.5C3**  
\$21.00 silver  
19.00 brass

Bridged T attenuator, 32 steps, 1.5 db per step, tapered on last 5 steps to off. MOUNTING: two hole, 6-32 or 8-32 screws,  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter, 2-5/16" back of panel depth. CONTACT SPACING: 10°.

**420-2B2**  
\$16.00 silver  
14.00 brass

Bridged T attenuator, 20 steps, 2 db per step, attenuation linear with off on last step. MOUNTING: two hole, 6-32 or 8-32 screws,  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 15°.

**C820-2B2**  
\$16.00 silver  
14.00 brass

Dual potentiometer, each section 20 steps, 2 db per step, attenuation linear with off on last step. MOUNTING: two hole, 6-32 or 8-32 screws,  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter,  $1\frac{3}{8}$ " back of panel depth. CONTACT SPACING: 15°.

### SHALLCROSS V.U. METER RANGE EXTENDING ATTENUATORS

**IMPEDANCE:** Available with input impedances of 3900-7100-7500 ohms. Output impedance is 3900 ohms to match Weston Type 30B or General Electric Type DO 61 V.U. meters.

**TOLERANCE:**  $\pm 1\%$  except "C" types which are  $\pm 5\%$ .

**INSERTION LOSS:** Zero.

**DETENT:** All units supplied with indexing mechanism; back of panel depth includes detent.

**C35-4A4**  
\$12.00 silver  
11.00 brass

T attenuator, +4 to +24 V.U., 5 steps, 4 V.U. per step. MOUNTING: single hole,  $\frac{3}{8}$ "-32 threaded bushing. DIMENSIONS:  $1\frac{1}{2}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 30°.

**C35-4A5**  
\$12.00 silver  
11.00 brass

T attenuator, +4 to +20 V.U. and OFF, 5 steps, 4 V.U. per step. MOUNTING: single hole,  $\frac{3}{8}$ "-32 threaded bushing. DIMENSIONS:  $1\frac{1}{2}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 30°.

**320-2C4**  
\$23.50 silver  
22.50 brass

T attenuator, +4 to +44 V.U., 20 steps, 2 V.U. per step. MOUNTING: two hole, 8-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $2\frac{1}{2}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 15°.

**320-2C5**  
\$23.50 silver  
22.50 brass

T attenuator, +4 to +42 V.U. and OFF, 20 steps, 2 V.U. per step. MOUNTING: two hole, 8-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $2\frac{1}{2}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 15°.

**412-2B4**  
\$16.50 silver  
14.50 brass

Bridged T attenuator, +4 to +28 V.U., 12 steps, 2 V.U. per step. MOUNTING: two hole, 8-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 12°.

**412-2B5**  
\$16.50 silver  
14.50 brass

Bridged T attenuator, +4 to +26 V.U. and OFF, 12 steps, 2 V.U. per step. MOUNTING: two hole, 8-32 screws,  $1\frac{1}{2}$ " centers. DIMENSIONS:  $2\frac{1}{4}$ " diameter, 2-1/16" back of panel depth. CONTACT SPACING: 12°.

# SHALLCROSS MANUFACTURING CO.

COLLINGDALE, PENNSYLVANIA

**ELECTRICAL INSTRUMENTS**  
**RESISTORS**  
**VARIABLE ATTENUATORS**  
**SWITCHES**

## SHALLCROSS AKRA-OHM RESISTORS

### LIST PRICES—Standard BX Types, ±1% Tolerance

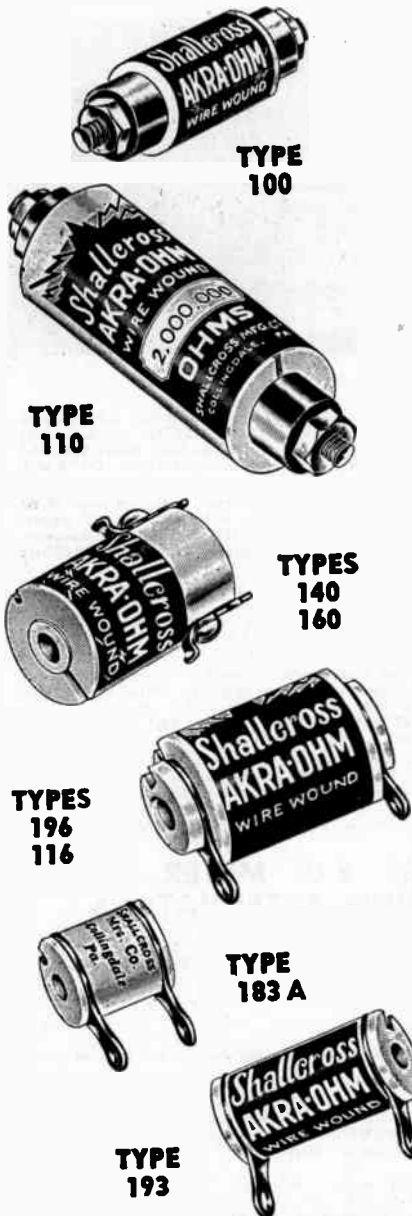
Resistance Range to and including	Types BX110, BX116, BX160	Types BX196	Types BX183A	Types BX100, BX140, BX193
0.5 ohms to 1000 ohms	\$2.15	\$1.65	\$1.00	\$1.40
Up to 5000 ohms	2.30	1.75	1.05	1.50
Up to 10,000 ohms	2.40	1.85	1.15	1.60
Up to 15,000 ohms	2.50	1.85	1.25	1.60
Up to 30,000 ohms	2.60	2.00	1.40	1.75
Up to 50,000 ohms	2.70	2.00	1.55	1.75
Up to 75,000 ohms	2.90	2.25	1.75	2.00
Up to 100M	3.20	2.50	2.00	2.25
Up to 125,000	3.35	2.60	2.15	2.35
Up to 150,000	3.55	2.75	2.15	2.50
Up to 200,000	3.85	3.05	2.40	2.75
Up to 250,000	4.15	3.35	2.65	3.00
Up to 300,000	4.45	3.65	2.90	3.25
Up to 400,000	5.10	4.20	3.15	3.75
Up to 500,000	5.70	4.75	3.65	4.25
Up to 600,000	6.00	5.05	4.40	4.50
Up to 700,000	6.15	5.20	4.50	4.60
Up to 750,000	6.35	5.40	4.65	4.75
Up to 900,000	6.65	5.70	4.90	5.00
Up to 1 megohm	6.95	6.00	5.15	5.25
Up to 1.5 megohms	9.80	8.25		7.25
Up to 2 megohms	14.15	11.25		9.20
Up to 2.5 megohms	16.40	14.00		
Up to 3 megohms	18.40	16.75		
Up to 4 megohms	22.40	21.25		
Up to 5 megohms	26.40	25.75		
Up to 6 megohms	30.40			
Up to 7 megohms	35.40			
Up to 8 megohms	40.40			
Up to 9 megohms	45.40			
Up to 10 megohms	50.40			

**SPECIAL TOLERANCE**  
Resistors to closer tolerances can be supplied at higher prices. Add to list prices as follows:

± 1/2%, add 5%	± 1/10%, add 25%
± 1/4%, add 10%	± .05%, add 50%
± 2/10%, add 15%	

**BX impregnated resistors will be furnished unless order specifies "without BX". Following price reductions will be made from the list price for resistors furnished without vacuum impregnation:**

Type 110, 116 & 160	\$40
" 196	.25
" 183	.15
" 100, 140 & 193	.25



Prices shown are for Manganin Wire used in resistances to 1,000 ohms and for Nickel-Chromium-Iron Wire used in resistances above 1,000 ohms.

### TYPES BX183A AND BX193—±1% IN COMMON VALUES—IN STOCK

In addition to the popular standard types listed here, Shallcross Akra-Ohm Resistors are made in a complete line of standard and special designs for precise electronic equipment demanding great stability and long life even under difficult conditions of temperature and humidity. Shallcross achievements include the development of really practical hermetically-sealed

units; BX processed resistors "tropicalized" against moisture and fungus; the use of spun glass insulated wire for applications where considerable power must be dissipated; bifilar wound resistors, 1000 ohms or less, for exacting instrument use; heavy-duty surge resistors; accurate heavy-duty power resistors, and various others. Write for the Shallcross "Engineering Data" wall and file Chart.

### ACCURATE FIXED WIRE-WOUND TYPES (JAN R93) PRICES ON REQUEST.

Shallcross Type	** JAN Style	Wattage	* Maximum Ohms	Std. Terminal	Mounting	Dimensions Length—Diam.
100	RB21	1	750,000	#8 screw	5 amp. fuse clip	2 1/8" x 9/16"
110	RB22	2	2 Meg.	#8 screw	5 amp. fuse clip	2 1/8" x 3/4"
116	RB14	1	350,000	Solder lugs	#6 screw	2 1/2" x 1/2"
140	RB41	0.5	500,000	Solder lugs	#6 screw	1 1/2" x 11/16"
160	RB42	1	300,000	Solder lugs	#6 screw	1 9/16" x 11/16"
183A	RB11	0.5	400,000	Solder lugs	#6 screw	1 1/2" x 1/2"
193	RB12	1	1 Meg.	Solder lugs	#6 screw	1 1/2" x 3/4"
196	RB13	1	1 Meg.	Solder lugs	#6 screw	1 1/2" x 1/2"
Δ196	RB13	1	1 Meg.	Solder lugs	#6 screw	1 1/2" x 1/2"

\* Based on use of .0014" diameter nickel chromium wire. Smaller wire sizes will greatly increase maximum allowable resistance on any form.  
\*\* JAN style refers to Joint Army-Navy Specification R93. Price depends on wire size and specification.  
Δ Hermetically sealed. Other sizes available.

**SEND FOR RESISTOR ENGINEERING CHART FOR COMPLETE DATA**

# SHALLCROSS MANUFACTURING CO.

COLLINGDALE, PENNSYLVANIA

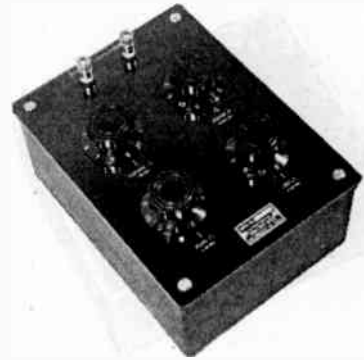
**ELECTRICAL  
INSTRUMENTS**  
•  
**RESISTORS**  
•  
**VARIABLE  
ATTENUATORS**  
•  
**SWITCHES**

## SHALLCROSS DECADE RESISTANCE BOXES

The large assortment and wide range of resistance available makes the Shallcross line of Resistance Boxes unique in the instrument field. They are used extensively as laboratory standards, AC and DC Bridge and ratio arms, voltage dividers, etc.

Accuracy adjustment of Resistors as follows:  
0.1 ohm..... 1% 1. ohm..... 0.25% all others..... 0.1%

No.	No. Dials	Ohm Steps	Ohms Total Resistance	Price	No.	No. Dials	Ohm Steps	Ohms Total Resistance	Price
543	1	0.1	1	\$16.50	821	3	10	11,100	\$45.00
544	1	1.0	10	16.50	822	3	100	111,000	47.50
545	1	10	100	16.50	823	3	1,000	1,110,000	58.00
546	1	100	1,000	16.50	824	3	10,000	11,100,000	91.00
547	1	1,000	10,000	18.00	825	4	1	11,110	58.00
548	1	10,000	100,000	19.50	826	4	10	111,100	58.00
549	1	100,000	1,000,000	27.00	827	4	100	1,111,000	69.50
550	1	1,000,000	10,000,000	50.00	828	4	1,000	11,110,000	105.00
817	3	.01	11.1	45.00	8285	5	0.1	11,111	72.00
817A	4	.01	111.1	56.50	829	5	1	111,110	77.50
817B	5	.01	1,111.1	71.00	830	5	10	1,111,100	85.00
818	3	0.1	111	43.00	831	5	100	11,111,000	117.00
819	4	0.1	1,111	55.00	832	6	1	1,111,110	91.50
820	3	1	1,110	42.00	833	6	10	11,111,100	127.50



## UNMOUNTED DECADE RESISTANCES



In response to a demand from engineers, manufacturers and physicists who design and construct their own electrical measuring instruments, we have made the Shallcross Unmounted Decade Resistances available. They are of the same construction as those used in the popular Shallcross Resistance Decades described above and consist of ten Shallcross Resistors mounted on a ceramic instrument switch.

### SPECIFICATIONS

Type No.	Total Resistance Ohms	Unit Resistance Ohms	Switch No.	Accuracy	Price
435	1.0	.1	536	1.0%	\$10.50
436	10	1.0	531	0.25%	10.50
437	100	10	531	0.1	10.50
438	1,000	100	531	0.1	10.50
439	10,000	1,000	531	0.1	12.00
440	100,000	10,000	531	0.1	14.00
441	1 Meg.	100,000	531	0.1	22.50
442	10 Meg.	1 Meg.	531	0.1	45.00

Mounting: Single 1/8" Hole Mounting—Panels Up to 3/16" Thick. Any of the above may be obtained with aluminum dust cover and shield at \$1.50 additional cost.

## SHALLCROSS AKRA-OHM PRECISION RESISTORS

for "Miniaturization" applications

### UNUSUAL ACCURACY IN SMALL SPACE

These new Shallcross Okra-Ohm Wire-Wound Precision Resistors have been designed to meet the needs of modern, miniature equipment. Standard tolerance is 1%. Closer tolerances can be furnished on special order.

The units offer unusually high and accurate resistance values in small space and are light enough to be suspended by their own tinned copper leads, or may be secured with mounting screw.

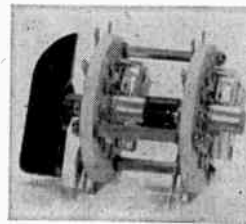


Type	Sections	Size	Watts	Maximum Resistance per section Ohms	Minimum Resistance per section Ohms
136	1	1 1/2" x 1/2"	0.25	150,000	1.
137	2	1 1/2" x 1/2"	0.25	150,000	1.
133	3	1 1/2" x 1/2"	0.25	550,000	1.
134	4	1 1/2" x 1/2"	0.25	375,000	1.

Prices on application.

## SHALLCROSS ROTARY SELECTOR SWITCHES

Like other Shallcross instrument components, these Rotary Selector Switches are designed to cover a very wide field of application in both shorting and non-shorting types, and can be modified to control a variety of circuits. Details on any type for practically any application on request. Suffixes B and S denote Brass and Silver contacts and contact arms. Write for Specification Sheet SS-6.



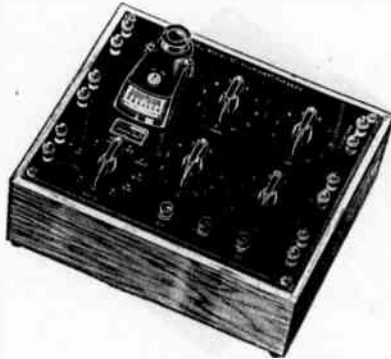
### SWITCH PRICES

Poles	Positions	Contact Spacing	Contact Plate Material	Type Number		List Price
				Shorting	Non-Shorting	
1	11	32.7°	Steatite	4605-B	4610-B	\$ 3.10
2	11	32.7°	Steatite	4620-B	4615-B	6.95
1	11	32.7°	Steatite	4605-S	4610-S	3.40
2	11	32.7°	Steatite	4620-S	4615-S	7.55
1	12	30°	Bakelite	5550-B	5620-B	3.40
1	15	30°	Bakelite	5550-S	5620-S	3.90
1	15	24°	Steatite	5610-B	4225-B	4.00
2	15	24°	Steatite	5615-B	4980-B	8.75
1	15	24°	Steatite	5610-S	4225-S	4.50
2	15	24°	Steatite	5615-S	4980-S	9.75
1	18	20°	Steatite	5155-B	5625-B	4.85
1	18	20°	Steatite	5155-S	5625-S	5.40
1	24	15°	Bakelite	5630-B	5570-B	6.20
1	24	15°	Bakelite	5630-S	5570-S	6.80
1	36	10°	Bakelite	.....	5985-S	23.00
1	40	8.8°	Melamine	8140-S	.....	28.00
1	60	6°	Bakelite	.....	5935-S	25.00

**ELECTRICAL  
INSTRUMENTS**  
•  
**RESISTORS**  
•  
**VARIABLE  
ATTENUATORS**  
•  
**SWITCHES**

**SHALLCROSS MANUFACTURING CO.**  
COLLINGDALE, PENNSYLVANIA

**SHALLCROSS D-C BRIDGES**



**No. 638-2-4  
KELVIN  
WHEATSTONE  
BRIDGE**

Resistance range 0.0001 ohm to 11.11 megohms

**SPECIFICATIONS**

**ACCURACY**—0.3% between 1.0 ohm and .1111 megohms. Below and above this range—2%.

**GALVANOMETER**—Built-in—sensitivity 1 micro-ampere per millimeter division.

**RHEOSTAT ARM**—Four decades—1.0 ohm steps in Wheatstone and 1.0 micro-ohm steps in Kelvin ranges.

**RESISTANCE BOX**—Binding posts allow using rheostat as Resistance Box.

**SEPARATE KEYS**—Provided for battery and galvanometer circuits. **CASE**—Carrying type with removable cover (not illustrated) and compartment for 4½ volt battery (not supplied) for Wheatstone range measurements.

**DIMENSIONS**—Length 12¼", width 10¼", height 6½".

**WEIGHT**—Approx. 9 lbs. Price \$195.00.



**No. 630  
WHEATSTONE  
BRIDGE**

Resistance range from 0.1 ohm to 11.1 megohms

**SPECIFICATIONS**

**ACCURACY**—1.0% between 10 ohms and 1.0 megohm—2% over 1 megohm.

**COMPONENT RESISTORS**—0.1% accurate except 1 ohm, which are 0.25%.

**RHEOSTAT ARM**—Three decades—variable in 10.0 ohm steps.

**RESISTANCE BOX**—Binding posts allow using rheostat as Resistance Box.

**CAM SWITCH**—Provided for battery and galvanometer circuits. **CASE**—Carrying type with removable cover and compartment for batteries and leads (not supplied).

**DIMENSIONS**—Length 10", width 9¼", height 5¼".

**WEIGHT**—Approx. 6 lbs. Price \$110.00.



**No. 637  
KELVIN  
WHEATSTONE  
BRIDGE**

Resistance range 0.001 ohm to 11.1 megohms

**SPECIFICATIONS**—Same as No. 638-2 except:

**ACCURACY**—1.0% between 1.0 ohm and 1.0 megohm; 2.0% above 1.0 megohm; and 3.0% below 0.1 ohm.

**GALVANOMETER**—Sensitivity 1.0 micro-ampere per millimeter division. Built-in.

**RHEOSTAT ARM**—Three decades—10 ohm steps in Wheatstone and 10 micro-ohm steps in Kelvin ranges.

**CANNOT** be used as Resistance Box.

**DIMENSIONS**—Length 10", width 9¼", height 5¼".

**WEIGHT**—Approx. 7 lbs. Price \$140.00.

**No. 629  
FAULT  
LOCATION  
BRIDGE**



Resistance range 0.1 ohm to 11.11 megohms

**SPECIFICATIONS**

**ACCURACY**—**COMPONENT RESISTORS**—0.1% accurate except 1.0 ohm, which are 0.25%.

**GALVANOMETER**—Built-in—sensitivity 1.0 micro-ampere per mm. division.

**RHEOSTAT ARM**—Four decades—11,110 ohms—variable in 1 ohm steps.

**RATIO DIAL**—Marked 0.001, 0.01, 0.1, 1.0, 10.0, 100 and 1000 for resistance measurements and Varley tests. M1, M 10, M 100 and M 1000 for Murray tests.

**SEPARATE KEYS**—Provided for battery and galvanometer circuits. **CASE**—Carrying type with removable cover, concealed compartment for 4½ volt battery (not supplied).

**BINDING POSTS**—Provided for use of external galvanometer where required.

**DIMENSIONS**—Length 10½", width 8¾", height 5¾".

**WEIGHT**—Approx. 7 lbs. Price \$130.00.

**VOLTAGE DIVIDERS (DECADE POTENTIOMETERS)**

No.	Dials	Total Resistance	Price	No.	Dials	Total Resistance	Price
835	4	10,000 ohms	\$100.00	845	3	1,000 ohms	\$74.00
836	4	100,000 ohms	110.00	846	3	10,000 ohms	79.50
837	4	1,000 ohms	95.00	850	3	100,000 ohms	92.50

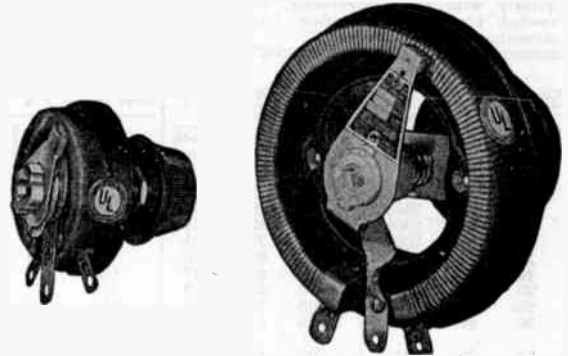
# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## OHMITE RHEOSTATS

All-Porcelain — Vitreous-Enamelled

The design and construction of these sturdy, compact Ohmite Rheostats insure permanently smooth, gradual, close control. The wire is wound over a porcelain core, bonded to porcelain base, and permanently locked in place by special Ohmite Vitreous Enamel. Nothing to smoke, char, shrink, or shift. Dissipates heat rapidly. Insulated shafts and bushings. Copper graphite contacts. Ratings are for "free air" use. Time-proved through long trouble-free service in countless installations the world over. Underwriters' Laboratories Listed.



**MODEL "H" 25 Watt**  
Diameter 1 1/8". Depth behind panel 1 3/4".

Stock No.	Ohms	Max. Mils.	List Price	Stock No.	Ohms	Max. Mils.	List Price
0140	1	5,000	\$7.03	0152	125	445	\$6.22
0141	2	3,540	6.22	0153	175	375	6.22
0142	3	2,880	6.22	0154	250	316	6.22
0143	6	2,040	6.22	0155	350	267	6.22
0144	8	1,770	6.22	0156	500	222	6.22
0145	10	1,580	6.22	0157	750	182	6.22
0146	15	1,290	6.22	0158	1,000	155	7.03
0147	25	1,000	6.22	0159	1,500	129	7.03
0148	35	845	6.22	0160	2,500	100	7.03
0149	50	707	6.22	0161	3,500	84	7.39
0150	75	575	6.22	0162	5,000	70	7.39
0151	100	500	6.22				

**MODEL "J" 50 Watt**  
Diameter 2 1/8". Depth behind panel 1 3/4".

Stock No.	Ohms	Max. Mils.	List Price	Stock No.	Ohms	Max. Mils.	List Price
0308	0.5	10,000	\$7.81	0321	150	575	\$7.03
0309	1	7,070	7.81	0322	225	470	7.03
0310	2	5,000	7.81	0323	300	408	7.03
0311	4	3,530	7.03	0324	500	316	7.03
0312	5	2,880	7.03	0325	800	250	7.39
0313	8	2,500	7.03	0326	1,000	224	7.39
0314	12	2,040	7.03	0327	1,600	176	7.39
0315	16	1,760	7.03	0328	2,500	141	7.39
0316	22	1,500	7.03	0329	3,500	119	7.81
0317	35	1,190	7.03	0330	5,000	100	7.81
0318	50	1,000	7.03	0331	8,000	79	7.81
0319	80	790	7.03	0332	10,000	70	7.81
0320	125	630	7.03				

## NON-SHORTING TYPE ROTARY POWER TAP SWITCH



Single-pole, multi-position switch with all-ceramic insulation, silver-to-silver contacts and "slow-break" action designed especially for alternating current. Switch shaft is electrically "dead". A.C. rating 10 amps., 150 volts. Diameter 1 3/4" — Depth behind panel 1 1/8" — Shaft diameter 1/4" — Recommended knob, stock number 4500 (round type) or 4516 (bar type).

Number of Taps	Total Rotation	Stock Number	List Price Less Knob
11	300°	111-11	\$4.67
10	270°	111-10	4.53
9	240°	111-9	4.53
8	210°	111-8	4.36
7	180°	111-7	4.36
6	150°	111-6	4.19
5	120°	111-5	4.19
4	90°	111-4	4.06
3	60°	111-3	4.06
2	30°	111-2	4.06

**MODEL "K" 100 Watt**  
Diameter 3 1/4". Depth behind panel 1 3/4".

Stock No.	Ohms	Max. Mils.	List Price	Stock No.	Ohms	Max. Mils.	List Price
0440	0.5	14,100	\$11.70	0452	200	707	\$10.95
0441	1	10,000	11.70	0453	300	575	10.95
0442	2	7,070	11.70	0454	400	500	10.95
0443	3	5,750	11.70	0455	500	447	10.95
0444	5	4,470	11.70	0456	750	365	10.95
0445	7.5	3,650	10.95	0457	1,000	316	11.70
0446	10	3,160	10.95	0458	1,500	258	11.70
0447	16	2,500	10.95	0459	2,000	224	11.70
0448	25	2,000	10.95	0460	2,500	200	11.70
0449	50	1,410	10.95	0461	5,000	141	12.47
0450	75	1,150	10.95	0462	7,500	115	13.28
0451	100	1,000	10.95	0463	10,000	100	14.03

**MODEL "L" 150 Watt**  
Diameter 4". Depth behind panel 2".

Stock No.	Ohms	Max. Mils.	List Price	Stock No.	Ohms	Max. Mils.	List Price
0524	0.5	17,300	\$14.83	0537	150	1,000	\$14.03
0525	1	12,300	14.83	0538	200	865	14.03
0526	2	8,650	14.83	0539	250	775	14.03
0527	3	7,070	14.83	0540	350	655	14.03
0528	5	5,480	14.83	0541	500	548	14.03
0529	7.5	4,470	14.83	0542	750	447	14.83
0530	10	3,880	14.03	0543	1,250	346	14.83
0531	15	3,163	14.03	0544	1,800	288	15.61
0532	25	2,450	14.03	0545	2,250	259	15.61
0533	35	2,070	14.03	0546	3,000	224	15.61
0534	50	1,735	14.03	0547	4,500	182	16.36
0535	75	1,415	14.03	0548	7,500	141	17.17
0536	100	1,225	14.03	0549	10,000	122	18.72

**MODEL "N" 300 Watt**  
Diameter 5". Depth behind panel 2 3/4".

Stock No.	Ohms	Max. Mils.	List Price	Stock No.	Ohms	Max. Mils.	List Price
0650	1	17,320	\$21.06	0661	100	1,730	\$21.06
0651	2	12,240	21.06	0662	150	1,410	21.06
0652	3	10,000	21.06	0663	200	1,220	21.06
0653	4	8,660	21.06	0664	300	1,000	21.06
0654	5	7,750	21.06	0665	400	866	21.06
0655	7.5	6,320	21.06	0666	700	655	21.06
0656	10	5,480	21.06	0667	900	578	21.06
0657	15	4,470	21.06	0668	1,200	500	21.06
0658	25	3,460	21.06	0669	1,500	447	21.06
0659	50	2,450	21.06	0670	1,750	414	21.06
0660	75	2,000	21.06	0671	2,500	346	21.06

## OTHER OHMITE RHEOSTATS

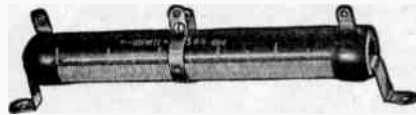
Ohmite Rheostats are also available in Model G, 75 Watt; Model P, 225 Watt; Model R, 500 Watt; Model T, 750 Watt; and Model U, 1,000 Watt units, in many resistance values. Special Rheostats with tapered windings, etc., can be supplied; also Special Rheostats for Model Train Control. Cages and other accessories also available.

For more complete information on OHMITE PRODUCTS, ask for Ohmite Stock Catalog.

# RHEOSTATS • RESISTORS • TAP SWITCHES

## OHMITE DIVIDOHM RESISTORS

## OHMITE FIXED RESISTORS



All-Porcelain  
Vitreous-Enameled



You can adjust the resistance or secure odd resistance values quickly with these Dividohms; easily put on more taps where needed. Ideal voltage dividers. With one adjustable lug and with mounting brackets.

Extra-sturdy, wire-wound, all-porcelain resistors with the permanent protection of Ohmite Vitreous Enamel. Widely used for heavy duty applications to assure continuous trouble-free service. With mounting brackets.

10 WATTS			50 WATTS		
Core Size 1 1/4" x 1/2"			Core Size 4" x 1/2"		
Adjustable Rea.			Mounting Centers 2 1/4"		
Rea. Ohms	Max. Mils.	Stock No.	Rea. Ohms	Max. Mils.	Stock No.
1	3,150	1001	750	115	1021
2	2,235	1002	800	111	1022
3	1,825	1003	1,000	100	1023
5	1,415	1004	1,250	89	1024
7.5	1,155	1005	1,500	79	1025
10	1,000	1006	2,000	69	1026
15	816	1007	2,250	64	1027
20	707	1008	2,500	63	1028
25	632	1009	3,000	56	1029
50	447	1010	3,500	51	1030
75	365	1011	4,000	47	1031
100	316	1012	4,500	45	1032
150	258	1013	5,000	43	1033
200	223	1014	6,000	38	1034
250	200	1015	7,000	34	1035
300	182	1016	7,500	33	1036
350	169	1017	8,000	31	1037
400	158	1018	8,500	29	1038
500	141	1019	9,000	28	1039
600	129	1020	10,000	26	1040

List Price, 1 thru 1000 ohms.....\$1.47  
List Price, 1,250 thru 5,000 ohms..... 1.53  
List Price, 6,000 thru 10,000 ohms..... 1.63

25 WATTS			50 WATTS		
Core Size 2" x 1/2"			Core Size 4" x 1/2"		
Adjustable Rea.			Mounting Centers 2 1/4"		
Rea. Ohms	Max. Mils.	Stock No.	Rea. Ohms	Max. Mils.	Stock No.
1	5,000	0200J	5,000	122	0783
2	3,535	0200K	6,000	111	0783B
3	2,885	0200L	7,000	103	0783C
5	2,235	0200A	8,000	96	0784
7.5	1,825		9,000	91	0784C
10	1,580	0200B	10,000	86	0785
15	1,290	0200R	12,000	79	0785B
20	1,117		15,000	70	0786
25	1,000	0200C	20,000	61	0787
50	707	0200D	25,000	49	0788
75	577	0200E	30,000	42	0789
100	500	0200F	35,000	36	0790
150	408	0200G	40,000	32	0791
200	353	0200H	45,000	29	0792
250	316	0201	50,000	26	0793
300	288		60,000	22	0794
400	250		80,000	17	0795
500	223	0202	100,000	13	0796
750	182	0203			
800	176	0204			

75 WATTS			100 WATTS		
Core Size 6" x 1/2"			Core Size 8 1/4" x 1 1/4"		
Adjustable Rea.			Mounting Centers 2 1/4"		
Rea. Ohms	Max. Mils.	Stock No.	Rea. Ohms	Max. Mils.	Stock No.
5	3,870	0769	5	4,470	0600A
10	2,735	0770	10	3,160	0600B
15	2,236	0771	25	2,000	0601
25	1,732	0772	50	1,414	0602
50	1,224	0773	75	1,153	0603
100	866	0774	100	1,000	0604
200	612	0774B	150	816	0605
250	547	0775	250	632	0606
300	500	0775B	500	447	0607
400	433	0775C	750	365	0608
500	387	0776	1,000	316	0609
750	316	0777	1,500	258	0610
1,000	273	0778	2,000	223	0611
1,250	245	0778B	2,500	200	0612
1,500	223	0779	3,000	182	0613
2,000	193	0780	5,000	141	0614
2,500	173	0781	7,500	115	0615
3,000	158	0781B	10,000	100	0616
3,500	146	0782	15,000	81	0617
4,000	136	0782B	20,000	70	0618
			25,000	53	0619
			30,000	47	0620
			40,000	36	0621
			50,000	29	0622
			60,000	24	0623
			75,000	19	0624
			100,000	15	0625

100 WATTS			200 WATTS		
Core Size 8 1/4" x 1 1/4"			Core Size 10 1/4" x 1 1/4"		
Fixed Resist.			Mounting Centers 1 1/4"		
Rea. Ohms	Max. Mils.	Stock No.	Rea. Ohms	Max. Mils.	Stock No.
5	4,470	0600A	5	6,320	0900A
10	3,160	0600B	10	4,470	0900B
25	2,000	0601	25	2,828	0901
50	1,414	0602	50	2,000	0902
75	1,153	0603	75	1,635	0903
100	1,000	0604	100	1,414	0904
150	816	0605	150	1,153	0905
250	632	0606	250	894	0906
500	447	0607	500	632	0907
750	365	0608	750	516	0908
1,000	316	0609	1,000	447	0909
1,500	258	0610	1,500	365	0910
2,000	223	0611	2,000	316	0911
2,500	200	0612	2,500	283	0912
3,000	182	0613	3,000	258	0913
5,000	141	0614	5,000	200	0914
7,500	115	0615	7,500	163	0915
10,000	100	0616	10,000	141	0916
15,000	81	0617	15,000	115	0917
20,000	70	0618	20,000	100	0918
25,000	53	0619	25,000	80	0919
30,000	47	0620	30,000	81	0920
40,000	36	0621	40,000	61	0921
50,000	29	0622	50,000	49	0922
60,000	24	0623	60,000	41	0923
75,000	19	0624	75,000	33	0924
100,000	15	0625	100,000	25	0925

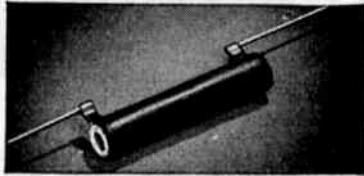
250 WATTS			500 WATTS		
Core Size 10 1/4" x 1 1/4"			Core Size 12 1/4" x 1 1/4"		
Fixed Resist.			Mounting Centers 1 1/4"		
Rea. Ohms	Max. Mils.	Stock No.	Rea. Ohms	Max. Mils.	Stock No.
5	4,470	0600A	5	6,320	0900A
10	3,160	0600B	10	4,470	0900B
25	2,000	0601	25	2,828	0901
50	1,414	0602	50	2,000	0902
75	1,153	0603	75	1,635	0903
100	1,000	0604	100	1,414	0904
150	816	0605	150	1,153	0905
250	632	0606	250	894	0906
500	447	0607	500	632	0907
750	365	0608	750	516	0908
1,000	316	0609	1,000	447	0909
1,500	258	0610	1,500	365	0910
2,000	223	0611	2,000	316	0911
2,500	200	0612	2,500	283	0912
3,000	182	0613	3,000	258	0913
5,000	141	0614	5,000	200	0914
7,500	115	0615	7,500	163	0915
10,000	100	0616	10,000	141	0916
15,000	81	0617	15,000	115	0917
20,000	70	0618	20,000	100	0918
25,000	53	0619	25,000	80	0919
30,000	47	0620	30,000	81	0920
40,000	36	0621	40,000	61	0921
50,000	29	0622	50,000	49	0922
60,000	24	0623	60,000	41	0923
75,000	19	0624	75,000	33	0924
100,000	15	0625	100,000	25	0925

ADJUSTABLE LUGS					
Bakelite Knob			Screw Driver Type		
Rea. Dia.	Stock No.	List Price	Rea. Dia.	Stock No.	List Price
3/8"	0359	\$0.36	3/8"	1058	\$0.25
1/2"	1959	.47	1/2"	0358	.25
5/8"	2159	.47	5/8"	1958	.42
			1 1/4"	2158	.42

160 Watt Resistors—Core Size 8 1/4" x 1 1/4"		
Mounting Centers 9/16" available in same resistances as the 200 Watt Resistors.		
Ohms	Fixed Rea. List Price	Adj. Rea. List Price
5	\$4.16	\$5.33
10 thru 1,000	2.98	4.14
1,500 thru 5,000	3.04	4.19
7,500 & 10,000	3.30	4.44
15,000 & 20,000	3.54	4.69
25,000 thru 40,000	3.64	4.81
50,000 & 60,000	3.76	4.94
75,000	4.03	5.17
100,000	4.26	5.44

For more complete information on OHMITE PRODUCTS, ask for Ohmite Stock Catalog.

Popular OHMITE "BROWN DEVIL" RESISTORS



5 Watt—1" x 5/16" Core Size

Ohms	Mils.	Ohms	Mils.	Ohms	Mils.
1	2,236	125	200	1,250	63
1.5	1,820	150	182	1,500	57
2	1,580	200	158	1,750	53
3	1,290	225	149	2,000	49
4	1,120	250	141	2,250	46
5	1,000	300	129	2,500	44
7.5	818	350	120	3,000	39
10	707	400	112	3,500	36
12	645	450	105	4,000	33
15	575	500	100	4,500	31
20	500	600	91	5,000	29
25	447	700	84	6,000	26
30	408	750	81	7,000	24
35	378	800	79	7,500	22
40	353	900	74	8,000	21
50	316	1,000	70	9,000	19
75	258	1,100	67	10,000	18
100	224	1,200	64		

List Price, 1 thru 1,000 ohms.....\$0.67  
 List Price, 1,100 thru 5,000 ohms..... .72  
 List Price, 6,000 thru 10,000 ohms..... .78

10 Watt—1 3/4" x 5/16" Core Size

Ohms	Mils.	Ohms	Mils.	Ohms	Mils.
1	3,160	350	169	6,000	38
2	2,235	400	158	7,000	34
3	1,825	450	149	7,500	32
4	1,580	500	141	8,000	31
5	1,414	600	129	8,500	29
7.5	1,155	700	119	10,000	25
10	1,000	750	115	11,000	24
12	910	800	111	12,000	23
15	816	900	105	12,500	22
20	707	1,000	100	13,500	21
25	632	1,100	95	14,300	20
30	575	1,200	91	15,000	19
35	535	1,250	89	16,000	18
40	500	1,500	79	17,500	17
50	447	1,750	74	18,000	17
75	365	2,000	69	20,000	16
100	316	2,250	64	22,500	15
125	283	2,500	63	25,000	14
150	258	3,000	56	30,000	12
200	223	3,500	51	35,000	10
225	217	4,000	47	40,000	9
250	200	4,500	45	45,000	8
300	182	5,000	43	50,000	7

List Price, 1 thru 1,000 ohms.....\$0.75  
 List Price, 1,100 thru 5,000 ohms..... .80  
 List Price, 6,000 thru 10,000 ohms..... .92  
 List Price, 11,000 thru 20,000 ohms..... 1.03  
 List Price, 22,500 & 25,000 ohms..... 1.08  
 List Price, 30,000 thru 50,000 ohms..... 1.22

RITEOHM SERIES "84" PRECISION RESISTORS

Ohms	Max. Voltage	Ohms	Max. Voltage	Ohms	Max. Voltage
*0.1	.316	4,000	44.70	.125 Meg.	200
0.5	.500	5,000	50.00	.150 Meg.	200
1	.707	7,500	61.20	.175 Meg.	200
10	2.24	10,000	70.70	.200 Meg.	200
25	3.54	12,500	79.00	*.225 Meg.	400
50	5.00	15,000	86.60	*.250 Meg.	400
100	7.07	20,000	100	*.300 Meg.	400
200	10.00	22,500	106	*.400 Meg.	400
250	11.20	25,000	112	1,500 Meg.	400
300	12.20	30,000	122	1,600 Meg.	400
500	15.80	40,000	141	1,750 Meg.	400
1000	22.40	50,000	158	1,900 Meg.	400
1500	27.40	60,000	173	11.0 Meg.	400
2000	31.60	75,000	194	11.5 Meg.	400
2500	35.40	1 Meg.	200		

\*Type 844-A 4 Pie—1 Watt Size 3/8" x 3/8"  
 †Type 844-B 4 Pie—1 Watt Size 3/8" x 1 3/8"  
 All others Type 842-A 2 Pie—1/2 Watt Size 3/8" x 3/8"

High quality, small size, wire-wound resistors ideal for voltage dropping, bias units, bleeders, etc. They're extra-sturdy, all-ceramic, vitreous enameled. They give time-proved protection against shock, vibration, heat and humidity. Their long record of continuous trouble-free service—their wide use in all climates of the world—prove their complete reliability and economy. All units can be conveniently mounted by means of their 1 1/2" tinned wire leads. The standard resistance tolerance is ± 10%.

The all-welded construction of the 5 watt unit makes it possible to extend the resistance range to 10,000 ohms, an unusually high value for a vitreous enameled stock unit.

20 Watt—2" x 7/16" Core Size

Ohms	Mils.	Ohms	Mils.	Ohms	Mils.
5	2,000	1,250	126	15,000	30
10	1,414	1,500	115	20,000	24
25	894	1,750	107	25,000	20
50	632	1,850	104	30,000	17
75	516	2,000	100	35,000	15
100	447	2,250	94	40,000	14
150	365	2,400	91	45,000	13
200	316	2,500	89	50,000	12
250	283	2,750	85	55,000	10
300	258	3,000	81	60,000	9.0
350	239	3,500	75	65,000	8.0
400	223	4,000	70	70,000	7.0
500	200	4,500	66	75,000	7.0
650	175	5,000	63	80,000	7.0
700	169	6,000	57	85,000	6.0
750	163	7,000	53	90,000	6.0
800	158	7,500	51	95,000	6.0
850	153	8,000	50	100,000	6.0
1,000	141	10,000	43		
1,200	129	12,500	35		

List Price, 5 thru 1,000 ohms.....\$0.95  
 List Price, 1,200 thru 5,000 ohms..... .97  
 List Price, 6,000 thru 10,000 ohms..... 1.12  
 List Price, 12,500 thru 20,000 ohms..... 1.20  
 List Price, 25,000 thru 40,000 ohms..... 1.37  
 List Price, 45,000 thru 60,000 ohms..... 1.58  
 List Price, 65,000 thru 80,000 ohms..... 1.83  
 List Price, 85,000 thru 100,000 ohms..... 2.11



High quality, 1% tolerance, non-inductive, pie-wound units for meter multipliers, lab. equipment, etc. Prices are for stock values shown in table.

Ohms	List Price	Ohms	List Price
0.1 thru 500	\$1.33	.225 & .25 Meg.	\$4.06
1,000 thru 2,500	1.39	.3 megohm	4.44
4,000 thru 10,000	1.58	.4 megohm	4.67
12,500 & 15,000	1.69	.5 megohm	5.31
20,000 thru 50,000	2.11	.6 megohm	6.64
60,000 & 75,000	2.50	.75 megohm	7.03
.1 megohm	2.89	.9 megohm	7.39
.125 megohm	3.28	1.0 megohm	8.20
.15 thru .2 megohm	3.67	1.5 megohm	11.70

Complete Listings in Bulletin 126

OHMITE "LITTLE DEVIL" RESISTORS Individually Marked



Ohmite "Little Devils" are full 1/2 Watt, 1 Watt and 2 Watt Insulated Composition Resistors and can be used at their full wattage ratings at 70° C. (158° F.) ambient temperature. They meet requirements of specification JAN-R-11. All units are color coded. Each resistor is marked with the resistance value, wattage rating and the Ohmite trademark. "LITTLE DEVILS" are available from stock in 1/2, 1 and 2 watt sizes with ±5% or ±10% tolerance. The standard RMA values, 10 ohms to 22 megohms can be furnished. In the 1 watt size, ±10% tolerance values as low as 2.7 ohms are available from stock.

Stocked in RMA Values ±5% or ±10% Tolerance

(Figures in bold type are ±10% RMA values. All values except (\*) available in ±5% tolerance.)

Ohms	Ohms	Ohms	Ohms	Megs.
*2.7	110	2,400	51,000	1.1
*3.3	120	2,700	56,000	1.2
*3.9	130	3,000	62,000	1.3
*4.7	150	3,300	68,000	1.5
*5.6	160	3,600	75,000	1.6
*6.8	180	3,900	82,000	1.8
*8.2	200	4,300	91,000	2.0
10	220	4,700	MEGS	2.2
11	240	5,100	0.1	2.4
12	270	5,600	0.11	2.7
13	300	6,200	0.12	3.0
15	330	6,800	0.13	3.3
16	360	7,500	0.15	3.6
18	390	8,200	0.16	3.9
20	430	9,100	0.18	4.3
22	470	10,000	0.20	4.7
24	510	11,000	0.22	5.1
27	560	12,000	0.24	5.6
30	620	13,000	0.27	6.2
33	680	15,000	0.30	6.8
36	750	16,000	0.33	7.5
39	820	18,000	0.36	8.2
43	910	20,000	0.39	9.1
47	1,000	22,000	0.43	10.0
51	1,100	24,000	0.47	11.0
56	1,200	27,000	0.51	12.0
62	1,300	30,000	0.56	13.0
68	1,500	33,000	0.62	15.0
75	1,600	36,000	0.68	16.0
82	1,800	39,000	0.75	18.0
91	2,000	43,000	0.82	20.0
100	2,200	47,000	0.91	22.0
			1.0	

\*1 Watt Size Only. ±10% tolerance.

Type	Size Length	Diam.	Max. Volts	List Price ±10%	List Price ±5%
1/2 Watt	3/8"	3/16"	350	17c	33c
1 Watt	3/8"	1/4"	500	25c	50c 10 Ohms and up
2 Watt	1 1/8"	3/8"	1,000	33c	66c

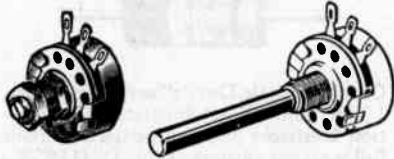
For more complete information on OHMITE PRODUCTS, ask for Ohmite Stock Catalog.



# BE RIGHT WITH OHMITE

RHEOSTATS  
RESISTORS  
SWITCHES  
CHOKES

## 2 WATT MOLDED COMPOSITION POTENTIOMETER—TYPE AB



The Type AB Potentiometer is an exceptionally high quality unit designed especially for industrial, laboratory,

radio service and other uses where reliability is particularly important. Because the resistor element is molded, the unit has an exceptionally large safety factor. The power rating of 2 watts is unusual for a unit of such small size. The unit has a very low noise level and low voltage coefficient. It will pass the Army-Navy 200 hour salt spray test, specification AN-QQ-S-91. The unit is 1-1/16" diameter and extends 9/16" behind the panel. The 2" long round shaft (including the 3/8" long mounting bushing) is available from stock on potentiometers with all three resistance tapers. The screwdriver shaft with locking-nut is available from stock on the linear taper units only. A SPST switch, to be attached to the back of the control, can be supplied extra.

Total Resistance- ±10% Except as Noted	Resistance Rotation Characteristics (Taper)			
	LINEAR		Type A	Type B
	Type U 2" Shaft Stock No.	Type LU Locking Shaft Stock No.	Clockwise Log. Stock No.	Counterlock. Log. Stock No.
50 Ohms	CU 5001	CLU 5001		
100 Ohms	CU 1011	CLU 1011		
250 Ohms	CU 2511	CLU 2511		
500 Ohms	CU 5011	CLU 5011		
1,000 Ohms	CU 1021	CLU 1021		
2,500 Ohms	CU 2521	CLU 2521		
5,000 Ohms	CU 5021	CLU 5021		
10,000 Ohms	CU 1031	CLU 1031		CB 1031
25,000 Ohms	CU 2531	CLU 2531		CB 2531
50,000 Ohms	CU 5031	CLU 5031		CB 5031
.10 Meg.	CU 1041	CLU 1041	CA 1041	
.25 Meg.	CU 2541	CLU 2541	CA 2541	
.5 Meg.	CU 5041	CLU 5041	CA 5041	
1.0 Meg. ±20%	CU 1052	CLU 1052	CA 1052	
2.5 Meg. ±20%	CU 2552	CLU 2552	CA 2552	
5.0 Meg. ±20%	CU 5052	CLU 5052		

Type AB Potentiometer with 2" long shaft.....List Price \$3.00

Type AB Potentiometer with locking shaft illustrated above.....List Price 3.75

Stock No. CS-1, Switch only for above unit (supplied unmounted).....List Price .90

## LITTLE DEVIL RESISTOR ASSORTMENTS FOR SERVICE USE

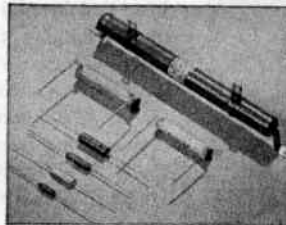


Serviceman's assortments of 125 Ohmite "Little Devil," 1/2-watt, 1-watt or 2-watt insulated composition resistors, in the 40 values (10 ohms to 10 megohms) most frequently used by servicemen. The assortment is offered at the price of the resistors

alone—the cabinet is furnished without extra cost! Cabinet is only 9" long, 4 3/4" high, and 5 1/4" deep.

Assortment	Stock No.	Quantity of Resistors	Wattages	Net Price
SERVICE				
±10% tolerance	CAB-1	125	1/2 watt	12.50
(40 resistance values)	CAB-2	125	1 watt	18.75
	CAB-3	125	2 watt	25.00

## OHMITE R.F. PLATE CHOKES



This series of seven Ohmite single layer wound solenoid radio frequency plate chokes covers the entire frequency range of 3 to 520 megacycles. The four highest frequency chokes are wound on low power factor plastic cores while the other three units

are wound on steatite tubes. Windings are insulated and protected by a moisture-proof coating. The single layer winding is designed to avoid adverse harmonic effects within the recommended operating range and also prevents breakdown from high r.f. potentials.

Stock Number	Operating Range Megacycles	Micro-henries	Core Dimensions	List Price
Z-7	3 to 20 Mc.	84.0	6" x 1/2"	\$1.86
Z-14	7 to 35 Mc.	44.0	2" x 1/2"	.81
Z-28	20 to 60 Mc.	21.0	1 3/4" x 1/2"	.53
Z-50	35 to 110 Mc.	7.0	1 1/4" x 1/2"	.39
Z-144	80 to 200 Mc.	1.8	3/4" x 1/2"	.39
Z-235	160 to 350 Mc.	0.84	3/4" x 1/2"	.39
Z-460	320 to 520 Mc.	0.20	1/2" x 3/8"	.39

Non-magnetic Brackets Furnished with Z-7. The Z-14 and Z-28 are rated at 600 ma. All others 1000 ma.

## OHMITE POWER LINE CHOKES



Prevents high-frequency currents of radio transmitters, diathermy and therapeutic equipment from going out over the power lines and interfering with nearby radio receiving sets. Used as a filter in connection with two grounding condensers of 0.1 microfarad capacity each. The Z-20 Choke is also used at radio receivers to keep out interference. All chokes consist of two single-layer windings on a single ceramic core—insulated and protected by moisture-proof coating. Recommended for use in suppressing radio (not audio) frequency interference.

Stock No.	Micro-henries	Current Rating	Total D.C. Resistance Ohms	Lgth.	Tube Dia.	List Price
Z-20	14	5 Amperes	0.15	4"	1 1/2"	\$2.56
Z-21	15	10 Amperes	0.07	6 1/2"	1 3/4"	4.31
Z-22	18	20 Amperes	0.045	8 1/2"	1 3/4"	9.22

## NEW OHM'S LAW CALCULATOR

Redesigned! This new, improved version of the famous Ohmite Ohm's Law Calculator—popular the world over with servicemen, engineers and students—now has scales for solving parallel resistance problems, AND a standard slide rule. More useful than ever! With one setting of the slide the calculator gives the answer to any Ohm's Law problem—reading directly in ohms, volts, amperes, and watts. Three of the new scales on the back provide a quick, one-setting means of solving parallel resistance problems. The slide rule scales will multiply, divide, find squares, and square roots.



Ohmite Ohm's Law Calculator.....NET Price \$0.25

For more complete information on OHMITE PRODUCTS, ask for Ohmite Stock Catalog.

# ALPHA WIRE PRODUCTS



**CONSTRUCTION:** Single conductor, extra flexible stranded tinned copper, cotton serve, insulated with special low loss SIC rubber compound, braided tinned copper shield, cotton serve, tough black rubber jacket overall.

## CRYSTAL MICROPHONE CABLE

**GENERAL PURPOSE:** Low loss design for use with crystal, ribbon, dynamic and velocity microphones, photo-electric cells. Use No. 1248 FOR LAPEL MICROPHONES and phonograph pickups.

No.	Put-up	Size	Strand	Max. Capacity Per Ft. Between Cond. & Shield	O.D.
1248	100 Ft. Spool	20	26/34	40 mmf.	.175"
1249	100 Ft. Spool	20	26/34	30 mmf.	.245"

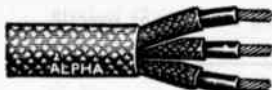


**CONSTRUCTION:** Each conductor flexible stranded tinned copper, cotton wrap, 1/64" "Hi-Tension" low capacity rubber, color coded, conductors twisted, cushioned with cotton fillers, braided tinned copper shield, cotton wrap, tough black rubber jacket overall.

## SHIELDED MICROPHONE CABLE

**GENERAL PURPOSE:** Adaptable for all indoor and outdoor crystal, carbon and condenser microphones as well as public address systems.

No.	Put-up	Size	Conductors	Max. Capacity Per Ft. Between Cond. & Shield	Conds.	O.D.
1250	100 Ft. Spool	20	2	70 mmf.	38 mmf.	.270"
1250/18	100 Ft. Spool	18	2	75 mmf.	40 mmf.	.300"
1251	100 Ft. Spool	20	3	65 mmf.	38 mmf.	.305"
1252	100 Ft. Spool	20	4	65 mmf.	36 mmf.	.345"
1253	100 Ft. Spool	20	5	60 mmf.	32 mmf.	.350"
1254	100 Ft. Spool	20	6	60 mmf.	30 mmf.	.375"
1255	100 Ft. Spool	20	7	60 mmf.	30 mmf.	.380"
1255/8	100 Ft. Spool	20	8	60 mmf.	30 mmf.	.400"



**CONSTRUCTION** Nos. 1256-7-8: Each conductor No. 20—10/30 stranded tinned copper, 1/64" rubber, color coded waxed cotton braid, conductors twisted, tinned copper shield overall. No. 1256V—2 conductors No. 20—10/30 stranded tinned copper, 1/64" plastic, conductors twisted, tinned copper shield overall.

Nos. 1264-3-4—Same construction as Nos. 1256-7-8 above, plus cotton braid over shield.

No. 1262V—Same as No. 1256V above, plus cotton braid over shield.

## SHIELDED MULTIPLE CONDUCTOR CABLE

**GENERAL PURPOSE:** For indoor permanent or portable P.A. systems, photo electric cell circuits, sound recording and auto radios.

### TINNED SHIELD OVERALL

No.	Put-up	Conductors	Maximum Capacity Per Ft. Between Cond. & Shield	Conds.	O.D.
1256	100 Ft. Spool	2	60.5 mmf.	32 mmf.	.215"
1256V	100 Ft. Spool	2	60.5 mmf.	32 mmf.	.170"
1257	100 Ft. Spool	3	54.0 mmf.	29 mmf.	.245"
1258	100 Ft. Spool	4	48.0 mmf.	26 mmf.	.270"

### COTTON BRAID OVER SHIELD

1262	100 Ft. Spool	2	60.5 mmf.	32 mmf.	.225"
1262V	100 Ft. Spool	2	60.5 mmf.	32 mmf.	.190"
1263	100 Ft. Spool	3	54.0 mmf.	29 mmf.	.240"
1264	100 Ft. Spool	4	48.0 mmf.	26 mmf.	.275"



**CONSTRUCTION:** Two conductors twisted, each #24 16/36 tinned copper, .015" vinyl insulation, color coded, very fine tinned copper shield overall.

## SHIELDED TWISTED PAIR CABLE

**GENERAL PURPOSE:** Where small diameter is required for sound recording, photo electric cell circuits, public address systems, etc.

No.	Put-up	Conductors	O.D.
1261	1000 Ft. Spool		.115"

NOTE: See Page 8-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS

## SHIELDED DUPLEX SPEAKER CABLE

GENERAL PURPOSE: For P.A. systems, photo-electric cell circuits, master control sound systems, etc.

### TINNED SHIELD OVERALL

No.	Put-Up	Conductors	Maximum Capacity Per Ft. Between		O.D.
			Cond. & Shield	Conds.	
1265	500 Ft. Spool	2	65 mmf.	23 mmf.	.250"

### WAXED COTTON BRAID OVER SHIELD

1266	500 Ft. Spool	2	65 mmf.	23 mmf.	.280"
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CONSTRUCTION: Two conductors twisted, each No. 18-16/30 stranded tinned copper, 1/32" "Hi-Tension" rubber, color coded, paper wrap over both conductors, close tinned copper shield overall.

CONSTRUCTION: Same as #1265 except with waxed cotton braid over shield.

## SHIELDED TRANSMISSION LINE

GENERAL PURPOSE: For inter-communication, short wave, P.A. systems, etc.

### TINNED SHIELD OVERALL

No.	Put-up	Max. Capacity Per Ft.	O.D.
1267	500 Ft. Spool	25 mmf.	.135"

### WAXED COTTON BRAID OVER SHIELD

1268	500 Ft. Spool	25 mmf.	.165"
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CONSTRUCTION: Two conductors twisted, each No. 20 solid tinned enameled copper, insulated, color coded, shielded braid overall.

CONSTRUCTION: Same as #1267 except with waxed cotton braid over shield.

## ARMORED DUPLEX SPEAKER CABLE

GENERAL PURPOSE: For P.A. systems, oil burner installations, automotive wiring, etc.

No.	Put-up	O.D.
1272	500 Ft. Spool	.132" x .182"



CONSTRUCTION: Two conductors parallel, each No. 18-16/30 stranded tinned copper, rubber insulated, color coded, lacquered cotton braid, galvanized steel armor overall.

## INTER-COMMUNICATION CABLE

### 3 CONDUCTORS

(1 SHIELDED — 2 UNSHIELDED)

GENERAL PURPOSE: This cable is ideal for general wiring from station to station where a shielded single conductor is essential to eliminate cross talk.

No.	Put-up	O.D.
1242	500 Ft. Spool	.155"



CONSTRUCTION: Three conductors, each conductor No. 22 stranded tinned copper wire, vinyl plastic insulation, color coded; one conductor tinned copper shield and two conductors unshielded; cotton braid overall.

## LEAD SHEATHED CABLE

GENERAL PURPOSE: For P.A. systems, communications, traffic control, mines, railroads and many other uses where severe moisture conditions are encountered. For all outdoor use including underground and underwater.

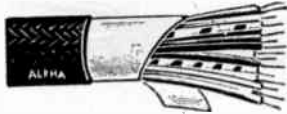
No.	Put-up	O.D.
1271	1,000 Ft. Reel	325"



CONSTRUCTION: Two conductors twisted, each No. 19 solid tinned copper, 1/32" "Hi-Tension" rubber, color coded; overall is a pure lead sheath.

NOTE: See Page S-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS



**CONSTRUCTION:** Each conductor solid tinned copper wire, two cotton reverse serves paraffined, color coded, conductors twisted into pairs, then covered with an impregnated double paper wrap, and overall a cotton braid saturated with a moisture-proof, flame retarding, rodent-proof compound.

## BRAIDED COMMUNICATION CABLE

(TWISTED PAIRS)

**GENERAL PURPOSE:** For interior use designed for connecting inter-communication systems, annunciators, telephones, etc.

No.	Put-up	Size	Pairs	O.D.
1276/2	1,000 Ft. Reel	22	2 ( 4 Conductors)	.185"
1276/3	1,000 Ft. Reel	22	3 ( 6 Conductors)	.210"
1276	1,000 Ft. Reel	22	6 (12 Conductors)	.240"
1277	1,000 Ft. Reel	22	10 (20 Conductors)	.300"
1277/13	1,000 Ft. Reel	22	13 (26 Conductors)	.360"
1277/15	1,000 Ft. Reel	22	15 (30 Conductors)	.380"
1277/25	1,000 Ft. Reel	22	25 (50 Conductors)	.445"



**CONSTRUCTION:** Similar to Communication System Cable above, but with lead antimony sheath instead of cotton braid over the twisted pairs.

## LEAD-COVERED COMMUNICATION CABLE

(TWISTED PAIRS)

**GENERAL PURPOSE:** For use indoors, outdoors, underground and in pipes for connecting inter-communication systems, annunciators, telephones, etc.

No.	Put-up	Size	Pairs	O.D.
1289	1,000 Ft. Reel	22	6 (12 Conductors)	.375"
1291	1,000 Ft. Reel	22	10 (20 Conductors)	.450"
1293	1,000 Ft. Reel	22	15 (30 Conductors)	.510"
1295	1,000 Ft. Reel	22	25 (50 Conductors)	.560"



**CONSTRUCTION:** Each conductor solid bare copper wire, thermo-plastic insulation, color coded, conductors twisted, waxed cotton braid overall.

## INTER-COMMUNICATION CABLE

(BRAIDED)

**GENERAL PURPOSE:** Designed for interior use for connecting inter-communication systems, annunciators, thermostat controls of oil burners, air conditioners, etc.

No.	Put-up	Size	Conductors	O.D.
1274	500 Ft. Spool	18	2	.150"
1275	500 Ft. Spool	18	3	.165"
1275/4	500 Ft. Spool	18	4	.180"
1275/5	500 Ft. Spool	18	5	.200"
1275/6	500 Ft. Spool	18	6	.220"



**CONSTRUCTION:** Each conductor 19 solid tinned copper, 1/64" telephone compound rubber, heavy cotton braid with specially treated compound to make it weather-proof for resistance against rain, snow, hail and cold.

## OUTDOOR INTER-COMMUNICATION WIRE

**GENERAL PURPOSE:** For outdoor and indoor use or in any damp location, for connecting communication systems, telephones, etc.

No.	Put-up	Size	Conductors	O.D.
1279	500 Ft. Coil	19	2	.200"
1280	500 Ft. Coil	19	3	.300"



**CONSTRUCTION:** Two conductors twisted, each No. 22 solid copper, insulated, color coded.

## INDOOR INTER-COMMUNICATION WIRE

**GENERAL PURPOSE:** For connecting sound and communication systems, telephones, etc.

No.	Put-up	O.D.
1269	500 Ft. Spool	.125"

NOTE: See Page 8-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS

## MULTI-CONDUCTOR FLEXIBLE CABLE

(RUBBER JACKETED)

GENERAL PURPOSE: For indoor and outdoor speakers, permanent or portable P.A. systems, sound recording and auto radios.

No.	Put-up	Conductors	Capacity Per Ft. Between Conductors	O.D.
1244	100 Ft. Spool	2	22 mmf.	.250"
1245	100 Ft. Spool	3	20 mmf.	.300"
1246	100 Ft. Spool	4	18 mmf.	.320"
1247	100 Ft. Spool	5	17 mmf.	.370"
1247/6	100 Ft. Spool	6	16 mmf.	.400"
1247/8	100 Ft. Spool	8	16 mmf.	.460"



CONSTRUCTION: Each conductor No. 20-26/34 flexible stranded tinned copper, cotton wrap, 1/32" "Hi-Tension" rubber, color coded, conductors twisted, cushioned with cotton fillers, cotton wrap, tough black rubber jacket overall.

## MULTI-CONDUCTOR FLEXIBLE CABLE

(COTTON BRAID)

GENERAL PURPOSE: For connecting speakers, analyzers, remote control units, P.A. systems or wherever a multiple circuit hook-up is required.

No.	Put-up	Conductors	Capacity Between Conductors	O.D.
1182	100 Ft. Spool	2	31.5 mmf.	.135"
1183	100 Ft. Spool	3	31.0 mmf.	.170"
1184	100 Ft. Spool	4	30.0 mmf.	.180"
1185	100 Ft. Spool	5	29.5 mmf.	.205"
1186	100 Ft. Spool	6	29.2 mmf.	.225"
1187	100 Ft. Spool	7	28.8 mmf.	.240"
1188	100 Ft. Spool	8	28.5 mmf.	.255"
1189	100 Ft. Spool	9	27.9 mmf.	.275"
1190	100 Ft. Spool	10	27.6 mmf.	.310"
1192	100 Ft. Spool	12	27.0 mmf.	.340"



CONSTRUCTION: Each conductor No. 20-10/30 stranded tinned copper, 1/64" thermoplastic insulation, color coded, conductors twisted, glazed brown cotton braid overall.

## RUBBER SHEATHED SERVICE CORD

(UNDERWRITERS APPROVED)

GENERAL PURPOSE: For amplifiers, sound systems, speakers, vacuum cleaners, electric tools, washing machines, refrigerators, appliances, trouble lights, garage lamps or wherever a rough usage power line is required.

No.	Put-up	Size	Conductors	Type	Current Carrying Capacity	Voltage Rating	O.D.
1951	250 Ft. Spool	18	2	SV	5 amps	300	.250"
1952	250 Ft. Spool	18	2	SJ	5 amps	300	.310"
1953	250 Ft. Spool	16	2	SJ	7 amps	300	.340"
1954	250 Ft. Coil	18	2	S	5 amps	600	.390"
1955	250 Ft. Coil	16	2	S	7 amps	600	.410"
1956	250 Ft. Coil	14	2	S	15 amps	600	.540"
1957	250 Ft. Coil	12	2	S	20 amps	600	.605"
1958	250 Ft. Coil	10	2	S	25 amps	600	.640"

Also Available with Additional Conductors.



CONSTRUCTION: Each conductor stranded bare copper, cotton separator, 1/32" "Hi-Tension" rubber, color coded, conductors twisted, cushioned with jute fillers, 40% tough rubber jacket overall.

## TYPE POSJ-E-Z STRIP LAMP CORD

(UNDERWRITERS APPROVED)

GENERAL PURPOSE: For line cord on radios, lamps, electric clocks, food mixers and other small devices.

No.	Put-up	O.D.
1966	100 Ft. Spool	.235" x .130"
1967	250 Ft. Spool	.235" x .130"

Standard Colors: Brown, Black and Ivory



CONSTRUCTION: Two conductors parallel, each conductor No. 18-41/34 extra flexible bare copper, color coded cotton serve, 40% tough rubber jacket overall. Slit in jacket to permit "E-Z" separation.

NOTE: See Page 8-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS



**CONSTRUCTION:** Very flexible tinned soft annealed copper, concentric strand, cotton wrap, 3/64" "Super Hi-Tension" rubber, satin finish. Standard Colors: Red, Black.



**CONSTRUCTION:** No. 18 - 65/36 tinned soft annealed copper, concentric strand, cotton wrap, 7/64" "Super Hi-Tension" rubber, satin finish. Standard Colors: Red, Black.

## KINKLESS TEST LEAD WIRE

**GENERAL PURPOSE:** As test leads in analyzers, oscillators and all other types of testing apparatus or wherever an EXTRA FLEXIBLE insulated wire is required.

No.	Put-up	Size	Strand	Voltage Breakdown (60 Cycles)	D.C. Insulation Resistance Per Ft. (Megohms)	O.D.
1633	100 Ft. Spool	20	41/36	10,000 V.	710	.140"
1635	500 Ft. Spool	20	41/36	10,000 V.	710	.140"
1636	500 Ft. Spool	18	65/36	12,000 V.	800	.150"

## Heavy Duty Type

**GENERAL PURPOSE:** For television, therapeutic equipment, analyzers, oscillators, etc., or wherever a heavy duty EXTRA FLEXIBLE high voltage line is required.

No.	Put-up	Voltage Breakdown (60 Cycles)	D.C. Insulation Resistance Per Ft. (Megohms)	O.D.
1637	100 Ft. Spool	22,000 V.	Over 1,000	.245"
1638	500 Ft. Spool	22,000 V.	Over 1,000	.245"



**CONSTRUCTION:** Composed of very fine soft annealed tinned copper wires braided and rolled flat.

## TINNED COPPER SHIELDING

**GENERAL PURPOSE:** For shielding speaker leads, lead-ins, amplifier wires, auto radio installations. Also for bonding.

No.	Put-up	I.D.
1229	50 Ft. Spool	1/8"
1230	50 Ft. Spool	3/16"
1231	50 Ft. Spool	1/4"
1232	50 Ft. Spool	3/8"
1233	50 Ft. Spool	5/8"
1234	50 Ft. Spool	3/4"
1235	50 Ft. Spool	1"



**CONSTRUCTION:** No. 1200 - 24 gauge flexible stranded tinned copper conductor, vinyl plastic insulation, close tinned copper shielded braid overall. No. 1201 same as No. 1200 plus cotton braid over shield. No. 1202 same as No. 1200 except two conductors with shield overall.

## SHIELDED PHONO AND GRID WIRE

**GENERAL PURPOSE:** Extreme flexibility and limpness make this an ideal wire for phonograph pick-up arm cable and grid wire.

No.	Put-up	Insulation	O.D.
1200	1000 Ft. Spool	.010"	.080"
1201	1000 Ft. Spool	.010"	.095"
1202	1000 Ft. Spool	.010"	.080" x .115"



**CONSTRUCTION:** Single conductor No. 20 - 10/30 stranded tinned copper, insulated with low loss rubber compound, white silk braid, tinned copper shield overall.

## SHIELDED LOW LOSS CABLE

**GENERAL PURPOSE:** For auto radios, lead-ins, short wave receivers and for grid leads in the input stages of P.A. amplifiers.

No.	Put-up	Capacity Per Ft.	O.D.
1241	100 Ft. Spool	26.6 mmf.	.225"



**CONSTRUCTION:** Stranded tinned copper, low loss insulation, highly lacquered braid, close tinned copper shield overall.

## SHIELDED HOOK-UP AND LEAD-IN WIRE

**GENERAL PURPOSE:** To reduce interference caused by motors, high tension wires, x-ray machines or other apparatus that radiates electrical impulses. Ideal for grid-lead use.

No.	Put-up	Size	Strand	O.D.
1194/22	1000 Ft. Spool	22	7/30	.105"
1194	1000 Ft. Spool	20	10/30	.110"
1196	1000 Ft. Spool	18	16/30	.145"
1197	1000 Ft. Spool	16	26/30	.160"
1198	1000 Ft. Spool	14	41/30	.180"

NOTE: See Page S-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS

## STRANDED



## SOLID

**CONSTRUCTION:** Single conductor, stranded and solid tinned copper wires with thermoplastic (Vinylite) insulation. High dielectric strength; 80°C (176 F) acid, alkali, oil and moisture resistant. Underwriters approved.

**Standard Colors:** Black, Red, Green, Yellow, Light Blue, Brown, White, Orange, Slate, Purple, Tan, Pink, Dark Blue

## PLASTIC SRIR HOOK-UP WIRE

**GENERAL PURPOSE:** For radio, radar, electronic devices, transmitters, aircraft instruments, fluorescent fixtures, rectifiers, electrical toys, etc.

No.	Put-up	Size	Strand	Insulation (60 cycles)	Volt. Break-down (60 cycles)	D.C. Insulation Resistance per ft. (Megohms)	O.D.
1550	1000 Ft. Spool	24	7/32	1/64"	8000	5000	.060"
1551	1000 Ft. Spool	22	7/30	1/64"	8000	5000	.065"
1552	100 Ft. Spool	22	7/30	1/64"	8000	5000	.065"
1553	1000 Ft. Spool	20	10/30	1/64"	8000	5000	.072"
1554	100 Ft. Spool	20	10/30	1/64"	8000	5000	.072"
1555	1000 Ft. Spool	18	16/30	1/64"	8000	5000	.087"
1557	1000 Ft. Spool	16	26/30	1/64"	8000	5000	.100"
1559	1000 Ft. Spool	14	41/30	1/64"	8000	5000	.125"
1561	1000 Ft. Spool	22	Solid	1/64"	8000	5000	.060"
1562	100 Ft. Spool	22	Solid	1/64"	8000	5000	.060"
1563	1000 Ft. Spool	20	Solid	1/64"	8000	5000	.066"
1564	100 Ft. Spool	20	Solid	1/64"	8000	5000	.066"

## TYPE WL HOOK-UP WIRE

**GENERAL PURPOSE:** For aircraft instruments and lighting and power, radio, electronic devices, radar, transmitters, rectifiers, etc.

### COTTON BRAID

No.	Put-up	Size	Strand	Insulation (60 cycles)	Volt. Break-down (60 cycles)	D.C. Insulation Resistance per ft. (Megohms)	O.D.
1480	1000 Ft. Spool	22	7/30	1000	200	.090"	
1481	1000 Ft. Spool	20	10/30	1000	200	.100"	
1482	1000 Ft. Spool	18	16/30	1000	200	.115"	
1483	1000 Ft. Spool	16	26/30	1000	200	.130"	
1484	1000 Ft. Spool	14	41/30	1000	200	.150"	
1485	1000 Ft. Spool	12	65/30	1000	200	.170"	

### GLASS BRAID

1490	1000 Ft. Spool	22	7/30	1000	200	.085"
1491	1000 Ft. Spool	20	10/30	1000	200	.095"
1492	1000 Ft. Spool	18	16/30	1000	200	.110"
1493	1000 Ft. Spool	16	26/30	1000	200	.125"
1494	1000 Ft. Spool	14	41/30	1000	200	.145"
1495	1000 Ft. Spool	12	65/30	1000	200	.165"

**CONSTRUCTION:** Single conductor, stranded tinned copper, vinyl plastic insulation, cotton or glass braid, lacquered, flame retarding and fungi proof.

(Specification JAN-C-76)

## LACQUERED HOOK-UP AND LEAD-IN WIRE

### (HIGH GLOSS LACQUERED BRAID)

**GENERAL PURPOSE:** For point to point soldering connections on transformers, amplifiers, panel hook-up, etc., where a low loss dielectric is required. It is not a pushback wire but will strip easily.

No.	Put-up	Size	Strand	Insulation (60 cycles)	Volt. Break-down (60 cycles)	D.C. Insulation Resistance per ft. (Megohms)	O.D.
1513	100 Ft. Spool	20	10/30	1/64"	7000	290	.090"
1515	500 Ft. Spool	20	10/30	1/64"	7000	290	.090"
1523	100 Ft. Spool	18	16/30	1/64"	7000	300	.110"
1525	500 Ft. Spool	18	16/30	1/64"	7000	300	.110"
1533	100 Ft. Spool	18	16/30	1/32"	8500	460	.125"
1535	500 Ft. Spool	18	16/30	1/32"	8500	460	.125"
1543	100 Ft. Spool	16	26/30	1/32"	8500	460	.140"
1545	500 Ft. Spool	16	26/30	1/32"	8500	460	.140"

**CONSTRUCTION:** Stranded tinned conductor, free stripping insulation, single braid highly lacquered. Bright colors.

**Standard Colors:** Black, Red, Green, Yellow, Blue, Brown, White

NOTE: See Page 8-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS

## "CL" PUSHBACK WIRE

**GENERAL PURPOSE:** Pushback hook-up wire in various bright colors for circuit identification; radio, radar, electronics, electrical toys, etc.

No.	Put-up	Size	Strand	Volt. Break-down (60 cycles)	D.C. Insulation Resistance (Megohms)	O.D.
1460	1000 Ft. Spool	22	7/30	1000	200	.065"
1460Q	100 Ft. Spool	22	7/30	1000	200	.065"
1461	1000 Ft. Spool	20	10/30	1000	200	.070"
1461Q	100 Ft. Spool	20	10/30	1000	200	.070"
1462	1000 Ft. Spool	18	16/30	1000	200	.082"
1462Q	100 Ft. Spool	18	16/30	1000	200	.082"
1463	1000 Ft. Spool	16	26/30	1000	200	.093"
1463Q	100 Ft. Spool	16	26/30	1000	200	.093"
1464	1000 Ft. Spool	14	41/30	1000	200	.105"
1464Q	100 Ft. Spool	14	41/30	1000	200	.105"
1465	1000 Ft. Spool	22	Solid	1000	200	.060"
1465Q	100 Ft. Spool	22	Solid	1000	200	.060"
1466	1000 Ft. Spool	20	Solid	1000	200	.065"
1466Q	100 Ft. Spool	20	Solid	1000	200	.065"
1467	1000 Ft. Spool	18	Solid	1000	200	.075"
1467Q	100 Ft. Spool	18	Solid	1000	200	.075"
1468	1000 Ft. Spool	16	Solid	1000	200	.085"
1468Q	100 Ft. Spool	16	Solid	1000	200	.085"
1469	1000 Ft. Spool	14	Solid	1000	200	.095"
1469Q	100 Ft. Spool	14	Solid	1000	200	.095"



STRANDED



SOLID

**CONSTRUCTION:** Single conductor stranded and solid tinned copper, heavy wrap of cellulose acetate, cotton braid with flame-retarding lacquer.

22-20-18 — Stranded and Solid  
Stock Colors: Black, Red, Green, Yellow, Blue, Brown, White, Orange.

16-14 — Stranded and Solid  
Stock Colors: Black, Red.

## LACQUERED PRIMARY WIRE

**GENERAL PURPOSE:** For automobile head, tail, side, dashboard lamps, horn, spotlight, instrument leads and general high voltage and primary voltage applications.

No.	Put-up	Size	Strand	Rubber	O.D.
1989	100 Ft. Spool	18	16/30	1/64"	.110"
1991	100 Ft. Spool	18	16/30	1/32"	.125"
1995	100 Ft. Spool	16	26/30	1/32"	.140"
1997	100 Ft. Spool	14	41/30	1/32"	.170"
1999	100 Ft. Spool	12	19/25	1/32"	.190"
1983	100 Ft. Spool	10	19/23	1/32"	.208"



**CONSTRUCTION:** Stranded soft annealed tinned copper, insulated with rubber, over which is a highly lacquered braid. Oil, heat, and moisture resistant.

## 7 MM LACQUERED CABLE

**GENERAL PURPOSE:** For high voltage leads in television receivers, cathode-ray tubes, oscilloscopes, etc.

No.	Put-up	O.D.
1981	100 Ft. Spool	.275"



**CONSTRUCTION:** Single conductor No. 16-19/29 stranded tinned copper, rubber insulated, cotton braid highly lacquered.

## 7MM SHIELDED IGNITION CABLE

**GENERAL PURPOSE:** For automotive and aircraft ignition systems requiring grounding to overcome interference.

No.	Put-up	O.D.
1193	100 ft. spool	.300"



**CONSTRUCTION:** Single conductor No. 16-19/29 stranded tinned copper, rubber insulated, cotton braid highly lacquered, braided tinned copper shield overall.

NOTE: See Page 8-12 for ALPHA Prices and Other Information.



# ALPHA WIRE PRODUCTS



**CONSTRUCTION:** Two conductors parallel, each conductor 7/28 bare copper flexible stranding, low loss polyethylene plastic insulation, smooth satin finish. Standard color: brown.

## TELEVISION AND FM TWIN-LEAD CABLE

**GENERAL PURPOSE:** For use especially in television and FM as the lead-in from the antenna to the receiver.

No.	Put-up	Impedance (Ohms)	Capacity Per Ft.	O.D.
1150	1000 Ft. Spool	300	4.5 mmf.	.070" x .395"
1151	1000 Ft. Spool	150	9.5 mmf.	.060" x .190"
1152	1000 Ft. Spool	75	20.0 mmf.	.070" x .120"



**CONSTRUCTION:** Conductors flat parallel, each conductor 7/30 stranded copper with one conductor bare and other conductors tinned. Durable rubber insulation. Very flexible.

## ROTARY TV-FM CABLE

**GENERAL PURPOSE:** Designed for use with TV or FM antenna rotators.

No.	Put-up	Conductors	O.D.
1150/3	1,000 Ft. Spool	3	.085" x .265"
1150/4	1,000 Ft. Spool	4	.085" x .345"
1150/5	1,000 Ft. Spool	5	.085" x .425"



**CONSTRUCTION:** Stranded galvanized steel wires with great tensile strength.

## GUY WIRE

**GENERAL PURPOSE:** To prevent sway of F.M., T.V. and radio receiver masts, poles or towers.

No.	Put-up	Strand	Breaking Strength	O.E.
1168	1,000 Ft. Spool	6/18	650 Lbs.	.156"
1169	1,000 Ft. Spool	6/20	470 Lbs.	.105"
1170	100 Ft. Coil	6/20	470 Lbs.	.105"
1171	50 Ft. Coil	6/20	470 Lbs.	.105"



**CONSTRUCTION:** Single conductor No. 22 solid copperweld, polyethylene insulation, bare copper shield, black vinyl plastic jacket overall.

## CO-AXIAL CABLE (RG-59U)

**GENERAL PURPOSE:** Co-axial cable is ideal for television, FM and facsimile reception. Is suitable for very high frequency and ultra high frequency ranges.

No.	Put-up	Nom. Imp. (Ohms)	Nom. Cap.	Mox. Oper. Volts RMS	O.D.
1157	1000 Ft. Reel	73	21 mmf./F+	2300	.242"



**CONSTRUCTION:** 6 feet E-Z Strip cord (Type POSJ-64), molded-on rubber plug attached to one end, TV molded-on rubber connector attached to other end.

## TELEVISION POWER CONNECTOR CORD

**GENERAL USE:** For replacement of worn out or damaged TV cords.

No.	Length
2126	6 Ft. Cord

## ALPHA E-Z STRIP LINE CORD



This is the modern and ideal power supply cord for replacement on radios, lamps, fans, etc. It is made of E-Z strip rubber parallel cord (UN-

DERWRITERS APPROVAL) with a small unbreakable soft rubber attachment plug. Free end stripped and tinned ready to attach.

No. 2106 - 6 Ft.	No. 2109 - 9 Ft.	No. 2112 - 12 Ft.
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Cords Available in Any Length

## GLASS INSULATOR



Will withstand great strain.

No. 2020	Per Carton 100
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## NAIL KNOB



A 2 piece knob of glazed porcelain and a heavy nail for secure holding.

No. 2031	Per Carton 100
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NOTE: See Page 8-12 for ALPHA Prices and Other Information.

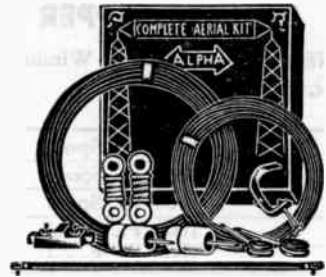
# ALPHA WIRE PRODUCTS

## AERIAL KITS

Alpha Aerial Kits are designed to meet the requirements of the various types of radio installations. Each kit is complete and boxed attractively.

**No. 301**  
 50 Ft. 7 Strand Copper Aerial  
 25 Ft. Lead-in Wire  
 2 No. 2022 Insulators  
 2 No. 2031 Nail Knobs  
 1 No. 2012 Ground Clamp  
 1 No. 2002 Lead-in Strip

**No. 304**  
 75 Ft. 7/24 Copper Aerial Wire  
 25 Ft. Lead-in Wire  
 1 No. 2001 Lightning Arrestor  
 1 No. 2002 Lead-in Strip  
 2 No. 2031 Nail Knobs  
 1 No. 2012 Ground Clamp  
 2 No. 2022 Insulators



## PHOSPHOR BRONZE AERIAL WIRE

**GENERAL PURPOSE:** Recommended especially for ship, short wave and transmitting aerials where high tensile strength is required.

No.	Put-up	Strand	Breaking Strength	O.D.
1160	500 Ft. Spool	7 22	420 Lbs.	.075"
1161	500 Ft. Spool	7 20	650 Lbs.	.100"
1163	500 Ft. Spool	7 18	1000 Lbs.	.122"
1164	500 Ft. Spool	7 16	1600 Lbs.	.150"
1165	500 Ft. Spool	7/14	2140 Lbs.	.190"
1166	500 Ft. Spool	7 12	3670 Lbs.	.240"



**CONSTRUCTION:** 7 strands Phosphor Bronze.

## LEAD-IN AND GROUND WIRE

**GENERAL PURPOSE:** Lead-in, ground, hook-up, all purpose wire.

No.	Put-up	Size	Strand	Insulation	O.D.
1114	1000 Ft. Spool	20	10/30	1/32"	.105"
1114E	500 Ft. Spool	20	10/30	1/32"	.105"
1131	500 Ft. Spool	18	16/30	1/32"	.125"



**CONSTRUCTION:** Stranded tinned or solid tinned copper conductor, insulated with live free stripping rubber, jet black waxed finish overall.

## COPPER AERIAL WIRE

### STRANDED — BARE

No.	Put-up
101	7/20 100 Ft. Coil
104	7/20 75 Ft. Coil
105	7/20 50 Ft. Coil
106	7/20 1000 Ft. Spool
107	7/22 100 Ft. Coil
110	7/22 75 Ft. Coil
111	7/22 50 Ft. Coil
112	7/22 1000 Ft. Spool
131	7/24 100 Ft. Coil
134	7/24 75 Ft. Coil
135	7/24 50 Ft. Coil
136	7/24 1000 Ft. Spool

### STRANDED — TINNED

No.	Put-up
161	7/22 100 Ft. Coil
164	7/22 75 Ft. Coil
165	7/22 50 Ft. Coil
166	7/22 1000 Ft. Spool

### SOLID — ENAMEL

No.	Put-up
269	14 100 Ft. Coil
274	14 1000 Ft. Spool
275	12 100 Ft. Coil
280	12 1000 Ft. Spool
281	10 100 Ft. Coil
283	10 1000 Ft. Spool

### SOLID — TINNED

No.	Put-up
284	14 100 Ft. Coil
286	14 1000 Ft. Spool
287	12 100 Ft. Coil
289	12 1000 Ft. Spool
290	10 100 Ft. Coil
292	10 1000 Ft. Spool



All Alpha Aerial Wire is pure electrolytic copper properly annealed to assure required flexibility and tensile strength.

## AC-DC ANTENNA WIRE

**GENERAL PURPOSE:** Ideal replacement wire for universal midgata, indoor aerials and loop antennas.

No.	Put-up
1281	Cotton 25 Ft. Disc.
1281V	Plastic 25 Ft. Disc.
1284	Cotton 1000 Ft. Spool
1284V	Plastic 1000 Ft. Spool

NOTE: See Page S-12 for ALPHA Prices and Other Information.



**CONSTRUCTION:** Single conductor No. 24-16/36 stranded bare copper, extra flexible, covered with dark brown cotton braid or plastic insulation.

# ALPHA WIRE PRODUCTS

## TINNED COPPER BUS-BAR WIRE

**GENERAL PURPOSE:** Winding of coils, antennas, point to point, bus bar, etc.

No.	Put-up	Size	O. D.
292	1000 Ft. Spool	10	.103"
289	1000 Ft. Spool	12	.082"
286	1000 Ft. Spool	14	.065"
295	1000 Ft. Spool	16	.051"
296	1000 Ft. Spool	18	.040"
297	1000 Ft. Spool	20	.033"
298	1000 Ft. Spool	22	.025"



## DIATHERMY CABLE

**GENERAL PURPOSE:** Its extreme flexibility and tough rubber jacket give it long life. This cable is used as a lead on therapy apparatus, charging cable, battery lead, underground cable, etc.

No.	Put-up	O.D.
1623	100 Ft. Spool	.300"
1625	1000 Ft. Reel	.300"



**CONSTRUCTION:** Single conductor extra flexible No. 14-104/34 copper, paper serve, 3/64" ASTM performance grade rubber, double cotton braid, .040" oil resistant neoprene rubber jacket.

## TWISTED PAIR TRANSMISSION LINE

(WEATHERPROOF BRAID)

**GENERAL PURPOSE:** For inter-com. hook-up. Also suitable for low loss coupling between antenna and receiver as doublet style twisted lead-in.

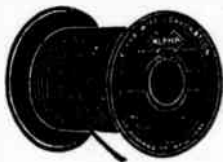
No.	Put-up	Capacity Bet. Conds. Per Ft.	Frequency (KC)	Power Factor Per Cent	O.D.
1146	500 Ft. Spool	21.8 mmf.	3,500	3.75	.175"
1148	100 Ft. Coil				
1149	50 Ft. Coil				
1135	500 Ft. Spool	21.8 mmf.	3,500	3.75	.190"



**CONSTRUCTION No. 1146:** Two conductors No. 22-7/30 stranded tinned copper, 1/32" "Hi-Tension" rubber, color coded, conductors twisted, cotton braid overall, saturated weather-proof finish.

**CONSTRUCTION No. 1135:** Two conductors No. 18-16/30 stranded tinned copper, 1/32" "Hi-Tension" rubber, color coded, conductors twisted, cotton braid overall, saturated weather-proof finish.

## PHOSPHOR BRONZE DIAL CABLE



**CONSTRUCTION:** Made of 42 strands (6 x 7 x .004) genuine phosphor bronze wire with a linen center for extra flexibility. Is guaranteed not to warp or stretch.

No.	Put-up	Tensile Strength	O.D.
1689	25 Ft. Spool	50 lbs.	.036"
1691	100 Ft. Spool	50 lbs.	.036"
1692	500 Ft. Spool	50 lbs.	.036"

## BRAIDED LINEN DIAL CABLE



**CONSTRUCTION:** Made of the finest linen obtainable. Composed of a very strong linen center over which is a smooth black braid.

### HEAVY

No.	Put-up	Tensile Strength	O.D.
1694	25 Ft. Spool	40 lbs.	.057"
1695	100 Ft. Spool	40 lbs.	.057"
1696	500 Ft. Spool	40 lbs.	.057"

### LIGHT

No.	Put-up	Tensile Strength	O.D.
1697	25 Ft. Spool	22.5 lbs.	.036"
1698	100 Ft. Spool	22.5 lbs.	.036"
1699	500 Ft. Spool	22.5 lbs.	.036"

### EXTRA-THIN

No.	Put-up	Tensile Strength	O.D.
1700	25 Ft. Spool	18 lbs.	.027"

NOTE: See Page 8-12 for ALPHA Prices and Other Information.

# ALPHA WIRE PRODUCTS

## FLEXIBLE VARNISHED TUBING AND SLEEVING



**RADIO VARNISHED TUBING** — (Spaghetti). A sleeving with a heavy coat of varnish, in high gloss vivid colors. Average dielectric strength: 4,000 volts.

**SATURATED SLEEVING** — A fibre yarn sleeving saturated with high grade insulating varnish. Cuts clean and has a smooth interior wall. Average dielectric strength: 2,000 volts.

**MAGNETO VARNISHED TUBING**—The production of this type of tubing is under rigid control so as to insure a maximum in quality. It is thoroughly impregnated with a varnish of maximum insulating value. It is resistant to heat, oil, gas and acids. Colors are bright and vivid. Average dielectric strength: 7,000 volts.

No.	Approx. I.D.
20	.034"
19	.038"
18	.042"
17	.047"
16	.053"
15	.059"
14	.066"
13	.076"

No.	Approx. I.D.
12	.085"
11	.095"
10	.106"
9	.118"
8	.133"
7	.148"
6	.166"
5	.186"
4	.208"

No.	Approx. I.D.
3	.234"
2	.263"
1	.294"
0	.330"
3/8"	.375"
7/16"	.438"
1/2"	.500"
5/8"	.625"

**Tolerances: Sizes:**  
 0 to 2—plus or minus .005"  
 3 to 13—plus or minus .004"  
 14 to 20—plus or minus .002"  
**Lengths—Standard 36"**

**Standard Color: Black. Other colors to order.**  
 Sizes follow the B & S System of gauging wires. For instance, a No. 10 tubing will fit over a No. 10 bare wire or any wire with an insulation of which the O.D. is equivalent to No. 10 B & S gauge. If in doubt, it is best to submit a sample of the wire or product to be covered.

**LONGER LENGTHS AVAILABLE**

## SPAGHETTI TUBING



A superior varnished tubing for radio work. It will retain its dielectric and flexibility indefinitely. Takes up to No. 14 wire.

**Colors: Black, Red, Yellow, Green and Brown**

No. 2091 — 36" Lengths

## UNBREAKABLE SOFT RUBBER PLUG



Made of sturdy live soft rubber. Brass blades. Unbreakable, easy to attach.  
 No. 1964 Per Carton 100

## RADIO LIGHTNING ARRESTER



Made of high quality glazed porcelain with nicked screws and nuts. For indoor or outdoor use.

No. 2001 Individually boxed

## GROUND CLAMP



Heavy gauge strap, Fahnestock terminal and brass screw and nut. This ground clamp makes a quick and positive connection. Fits a 3/8" to 2" pipe.

No.	Type	Per Carton
2012	Strap	50

## LEAD-IN STRIP-CLIP TYPE



Strips are waterproofed being fully covered with a heavily lacquered braid. Fahnestock clips are riveted to strap for firm contact.

No.	Length	Per Carton
2002	12"	50

# ALPHA WIRE PRODUCTS

## NOTE: USEFUL INFORMATION FOR ORDERING

- All tests on specifications are approximate and subject to normal manufacturing tolerances.
- Lengths other than those regularly listed can be furnished.
- Other wires and cables made to specifications.
- Use the following symbols alongside catalog number for other than standard put-ups.

COILS		COILS		COILS		SPOOLS		SPOOLS		SPOOLS	
25 Ft.....H	100 Ft.....K	500 Ft.....B	25 Ft.....N	100 Ft.....Q	250 Ft.....D	50 Ft.....Z	150 Ft.....L	1000 Ft.....C	50 Ft.....T	150 Ft.....R	500 Ft.....E
75 Ft.....J	200 Ft.....M	250 Ft.....A	75 Ft.....P	200 Ft.....S	1000 Ft.....F						

### G — LONGER LENGTHS ON SPOOLS OR REELS

The constant development of new and improved designs and manufacturing processes results in continually changing specifications. In every case where Alpha wires shipped are different in specifications from those shown in this catalog, an improvement will be noted.

Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
301	\$ 1.30	1254	\$30.00	1490	\$27.38	1989	\$ 3.13	4	\$13.90
304	2.38	1255	33.75	1491	31.88	1991	3.38	3	15.65
1114	9.35	1255/8	37.50	1492	39.38	1995	4.63	2	17.25
1114E	5.00	1256	8.25	1493	48.75	1997	5.00	1	19.50
1131	7.50	1257	11.50	1494	63.75	1999	6.88	0	23.25
1135	23.75	1258	13.75	1495	92.38	2001	per C 50.50	3/8	28.15
1146	17.00	1259	40.00	1513	2.75	2002	per C 11.25	7/16	33.65
1148	3.50	1261	57.50	1515	12.50	2012	per C 10.00	1/2	38.90
1150/3	35.00	1262	9.00	1523	3.25	2020	per C 8.75	5/8	45.40
1150/4	48.75	1263	14.00	1525	15.00	2031	per C 8.75		
1150/5	60.00	1264	17.00	1533	3.50	2091	21.55		
1150	40.00	1265	45.00	1535	16.25	2106	.40		
1151	37.50	1266	51.25	1543	5.00	2109	.55		
1152	35.00	1267	27.50	1545	23.75	2112	.65		
1157	108.75	1268	34.38	1551	13.00	2126	.70		
1160	22.50	1269	17.50	1552	1.55	101	2.65		
1161	37.50	1271	155.00	1553	15.00	104	2.00		
1163	40.00	1272	40.00	1554	1.75	105	1.38		
1164	55.00	1274	18.38	1555	20.00	106	25.75		
1165	85.00	1275	23.75	1557	28.75	107	1.45		
1166	127.50	1275/4	33.75	1559	37.50	110	1.13		
1168	25.00	1275/5	43.75	1561	11.25	111	.75		
1169	15.00	1275/6	55.00	1562	1.38	112	13.88		
1170	1.63	1276/2	87.50	1563	13.25	131	1.05		
1171	.88	1276/3	110.00	1564	1.58	134	.83		
1182	4.50	1276	200.00	1565	17.00	135	.55		
1183	5.75	1277	280.00	1567	22.50	136	9.75		
1184	7.50	1277/13	350.00	1569	30.00	161	1.83		
1185	9.00	1277/15	400.00	1571	22.50	164	1.40		
1186	11.25	1277/25	625.00	1573	26.25	165	.95		
1187	12.50	1279	20.00	1575	33.00	166	17.50		
1188	14.25	1280	30.00	1577	43.75	269	1.90		
1189	16.25	1281	.28	1579	59.00	274	18.38		
1190	18.75	1282	1.00	1581	20.00	275	2.85		
1192	22.50	1283	4.50	1583	24.00	280	27.75		
1193	15.00	1284	8.75	1585	30.25	281	4.15		
1194/22	40.00	1289	375.00	1587	40.00	283	40.63		
1194	42.50	1291	550.00	1589	51.75	284	1.85		
1196	55.00	1293	712.50	1623	13.13	286	17.88		
1197	67.50	1295	975.00	1625	125.00	287	2.75		
1198	87.50	1460	16.25	1633	2.88	289	26.75		
1200	40.00	1460-Q	1.88	1635	13.75	290	4.08		
1201	50.00	1461	19.25	1636	19.38	292	40.00		
1202	57.50	1461-Q	2.17	1637	6.88	295	13.38		
1229	2.75	1462	24.00	1638	33.13	296	11.38		
1230	3.50	1462-Q	2.71	1689	1.13	297	7.13		
1231	3.75	1463	31.88	1691	3.75	298	4.75		
1232	6.00	1463-Q	3.54	1692	16.25				
1233	9.75	1464	43.13	1694	1.13				
1234	13.00	1464-Q	4.58	1695	3.88				
1235	16.25	1465	14.00	1696	18.00				
1241	11.00	1465-Q	1.65	1697	1.00				
1242	40.00	1466	16.25	1698	3.50				
1244	9.50	1466-Q	1.88	1699	16.88				
1245	11.50	1467	18.50	1700	.68				
1246	13.25	1467-Q	2.11	1951	18.75				
1247	16.50	1468	25.63	1952	21.25				
1247/6	22.50	1468-Q	2.83	1953	26.25				
1247/8	30.00	1469	35.00	1954	33.75				
1248	9.00	1469-Q	3.65	1955	37.50				
1249	11.00	1480	25.13	1956	62.50				
1250	13.50	1481	29.00	1957	85.00				
1250/18	18.75	1482	35.63	1958	115.00				
1251	16.50	1483	45.13	1964	.15				
1252	20.50	1484	62.70	1966	4.13				
1253	25.75	1485	82.75	1967	9.38				
				1981	8.75				
				1983	8.25				

### SATURATED SLEEVING

Cat. No.	List Price
4	\$ 4.00
3	15.65
2	17.25
1	19.50
0	23.25
3/8	28.15
7/16	33.65
1/2	38.90
5/8	45.40

### MAGNETO VARNISHED TUBING

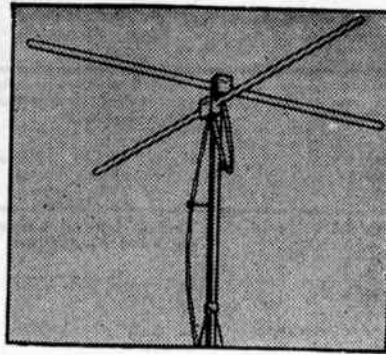
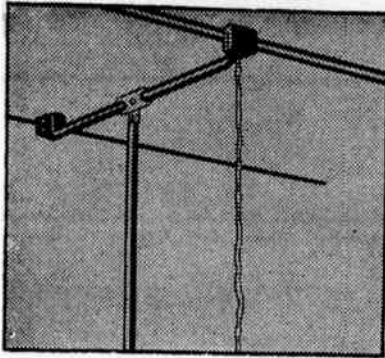
Cat. No.	List Price
24	\$ 6.65
20	6.65
19	6.85
18	6.85
17	6.85
16	7.15
15	7.50
14	7.90
13	8.15
12	8.25
11	8.55
10	10.40
9	11.25
8	11.50
7	13.00
6	14.25
5	15.40
4	16.75
3	18.00
2	19.40
1	20.85
0	24.75
3/8	31.00
7/16	35.15
1/2	41.25
5/8	47.50

### RADIO VARNISHED TUBING

Cat. No.	List Price
24	\$ 5.50
20	5.50
19	5.90
18	6.25
17	6.65
16	6.75
15	7.00
14	7.15
13	7.50
12	7.50
11	8.25
10	8.65
9	9.65
8	10.00
7	10.40
6	10.90
5	12.00

ALL PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

# BELDEN • FM antenna systems



- Highly efficient
- Broad response
- Low standing wave ratio
- Perfect matching
- Mechanically strong
- Light in weight
- Factory assembled
- Weather resistant
- Wind resistant

Trade Number	†Pkg.	Description	Net Weight in Lb	Contents
<b>FM DIPOLE ANTENNA</b>				
<b>8320</b>	1K	The Belden FM Dipole Antenna System is scientifically engineered and may be used on all FM radios. It can be used for Standard Broadcast as well as FM reception. Its performance has been proven in laboratory and field service tests. Careful electrical design has resulted in excellent response over the entire FM band. Maximum signal and trouble-free reception are assured.	2.5	1—65' 300-OHM Transmission Line 8225 1—Aluminum Antenna Element 1—Porcelain Junction Block 1—5' Aluminum Standard 2—Stand-off Insulators 8126 2—Mounting Straps 1—Instruction Sheet
<b>FM REFLECTOR</b>				
<b>8321</b>	1K	For greater radio signal strength, use the Belden FM Reflector with the No. 8320 Belden FM Dipole Antenna to form an antenna-reflector array. The addition of a reflector improves FM reception for any installation and is necessary in locations where the radio signal is weak, for example, due to its distance from radio stations or its location among buildings. Also, a reduction in interference may be effected to the rear or reflector side of the antenna.	.8	1—Aluminum Reflector Element 1—Porcelain Junction Block 1—Aluminum Cross Member 1—Instruction Sheet

Trade Number	†Pkg.	DESCRIPTION
<b>8304</b>	1K	1—75' 7x22 Beldenamel Antenna Wire 8005 1—35' 16 Stranded Lead-in Wire 8201 1—Arrester 8896 1—Type "C" Ground Clamp 8897 1—12" Lead-in Strip 8890 2—Antenna Insulators 8103 2—Porcelain Nail-on-knobs 8102 1—Stand-off Insulator 8104 1—Instruction Sheet
<b>8305</b>	1K	1—75' 7x22 Bare Copper Antenna Wire 8000 1—35' 16 Stranded Lead-in Wire 8201 1—Arrester 8896 1—Type "C" Ground Clamp 8897 1—12" Lead-in Strip 8890 2—Antenna Insulators 8103 2—Porcelain Nail-on-knobs 8102 1—Stand-off Insulator 8104 1—Instruction Sheet

## arresters • ground clamps • lead-in strips • insulators

Trade Number	DESCRIPTION
<b>8895</b>	1K Belden doublet-type bakelite arrester. Listed as approved by Underwriters
<b>8896</b>	1K Belden single-type bakelite arrester. Listed as approved by Underwriters
<b>8890</b>	1K 12" Single lead-in strip—rubber insulated—clips both ends
<b>8126</b>	10K 3" Stand-off insulator for flat transmission line

<b>8309</b>	1K	1—50' 7x24 Bare Copper Antenna Wire 8002 1—25' 18 Stranded Lead-in Wire 8200 1—Arrester 8896 1—Type "C" Ground Clamp 8897 2—Antenna Insulators 8103 1—Porcelain Nail-on-knob 8102 1—Stand-off Insulator 8104 1—Instruction Sheet
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### litz wire

<b>8817</b>	100'S	For rewinding antenna primaries and for hand-wound r-f coils. 5x44 Celenamel with wrap of nylon.
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## aerial wire (FULL GAUGE AND WEIGHT)

STRANDED BARE COPPER			SOLID TINNED COPPER (Bus Bar Wire)			SOLID BELDENAMEL		
Trade Number	Length and †Package	Size	Trade Number	Length and †Package	Size	Trade Number	Length and †Package	Size
<b>8000</b>	50' C	7x22	<b>8011</b>	100' CK	12	<b>8008</b>	100' CK	12
	75' C			200' S				
	100' C			300' S				
<b>8002</b>	50' C	7x24	<b>8012</b>	100' CK	14	<b>8009</b>	100' CK	14
	75' C			200' S				
	100' C			300' S				



†CK—Coiled in carton K—Carton CR—Crate reel S—Spool C—Coil SK—Spooled in carton

# BELDEN • aerial wire • lead-in wire

## shielded lead-in wire

Trade Number	Length and Package	Size	DESCRIPTION	Stranding	Insulation Thickness (inches)	Finished O.D. (inches)
 <b>8206</b>	250' S	18	Tinned copper, flexible stranding; rubber insulation; tinned copper braid shield	7x27	.040"	.165

## lead-in wire

 <b>8200</b>	100' S 500' S 1000' S	18	Tinned copper, flexible stranding; rubber insulation	7x27	.040	.126
 <b>8201</b>	50' CK 100' S 250' S 500' S 1000' S	18	Tinned copper, flexible stranding; rubber insulation	7x25	.040	.135

## voice coil lead wire



<b>8127</b>	10***	25	Bare copper wire braided	32x40		.024
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\*\*\*Packaged 10 ft on card, 5 cards in carton.

## indoor aerial wire—EXTRA FLEXIBLE

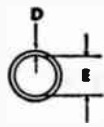
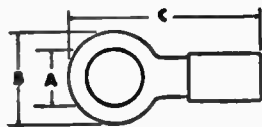


<b>8014</b>	25' S 500' SK	25	Tinned copper, flexible stranding; chrome vinyl plastic insulation	13x36	.010	.044
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\*Packaged 25 ft on card, 5 cards in carton.

## terminals

Tinned; easy to solder











DIMENSIONS—INCHES

A	B	C
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DIMENSIONS—INCHES

A	B	C
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Trade Number	Quantity and Package	For Screw Size	Hole Size or Space Opening	Over-all Width	Over-all Length
 <b>8989</b>	*25c pkg. 100 K 1000 K	12	.219	3/8	1 1/16
 <b>8992</b>	*25c pkg. 100 K 1000 K	8	.165	1 1/2	2 1/2
 <b>8993</b>	*25c pkg. 100 K 1000 K	10	.191	3/8	3/8
 <b>8995</b>	*25c pkg. 100 K 1000 K	8	.165	3/8	3/8

Trade Number	Quantity and Package	For Screw Size	Hole Size or Space Opening	Over-all Width	Over-all Length
 <b>8996</b>	*25c pkg. 100 K 1000 K	10	.191	3/8	3/8
 <b>8997</b>	*25c pkg. 100 K 1000 K	8	.165	1 1/2	1 1/2
 <b>8998</b>	*25c pkg. 100 K 1000 K	8	.172	3/8	3/8
 <b>8999</b>	*25c pkg. 100 K 1000 K	8	.172	3/8	3/8

**8994** 100 K 100 Assorted Belden Terminals, including 20-8995, 25-8997 10-8996, 10-8998, 35-8999







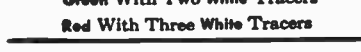






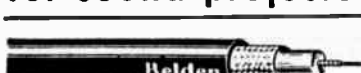

\*25c package — Sealed Cellophane Envelopes 20 Envelopes in carton

## magnet wire






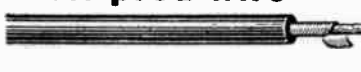

SINGLE NYLTEXENAMEL					SINGLE COTENAMEL					BELDENAMEL				
Size	Turns Per Linear Inch	Turns Per Square Inch	APPROX. LENGTH IN FEET		Size	Turns Per Linear Inch	Turns Per Square Inch	APPROX. LENGTH IN FEET		Size	Turns Per Linear Inch	Turns Per Square Inch	APPROX. LENGTH IN FEET	
			1/4-Lb Spool	1/2-Lb Spool				1/4-Lb Spool	1/2-Lb Spool				1/4-Lb Spool	1/2-Lb Spool
14	34.9	1218	....	248	14	14.1	199	....	39	14	15.2	231	....	40
24	43.1	1857	....	390	16	17.4	303	....	61	16	19.1	365	....	62
26	52.9	2798	309	618	18	21.4	458	....	97	18	23.9	571	....	100
28	64.5	4160	487	974	20	26.1	681	....	154	20	29.9	894	....	160
30	78.1	6069	770	1540	22	31.9	1018	....	241	22	37.4	1289	....	250
32	93.4	8723	1202	2404	24	38.6	1490	....	376	24	46.9	2200	....	400
34	113.0	12769	1892	....	26	46.4	2153	295	590	26	59.0	3481	....	638
36	134.2	18009	2854	....	28	55.1	3036	458	916	28	73.8	5446	505	1010
					30	64.7	4186	710	1420	30	92.2	8501	805	1610
					32	74.6	5565	1090	2180	32	114.0	12996	1270	2540
					34	86.6	7500	1606	....	34	144.0	20736	2015	4030
					36	97.6	9526	2425	....	36	180.0	32400	3200	6400
										38	225.0	50625	5070	....
										40	290.0	84100	8050	....

fCK—Coiled in carton K—Carton CR—Crate Reel S—Spool C—Coil SK—Spooled in carton

# BELDEN • auto and aircraft radio wires and shielding

ILLUSTRATION AND COLOR	Trade Number	Lengths and Package	A.W.G.	GENERAL CONSTRUCTION	Stranding	Finished Cable O.D. (Inches)	Nominal Capacitance Per Ft (mmf)
 Black	8664	100' S	28	.013" Tinned steel wire, solid; cellulose yarn braid; polyethylene insulation; tinned copper braid shield; black vinyl plastic jacket	solid	.250	14.5
 Black	8667	100' S	16	Tinned copper, flexible stranding; rubber insulation; cotton braid; lacquer coating	19x29	.280	
 Black	8665	100' S	19	Stainless steel alloy, flexible stranding; rubber insulation; glass yarn web braid; neoprene jacket; tinned copper braid shield; neoprene jacket	6x.013"+ 1x.011" steel alloy	.365	
 Black, Blue, Green, Red, Yellow, White	8833	100' S 1000' S	18	Tinned copper, flexible stranding; paper wrap; rubber insulation; cellulose acetate yarn braid; lacquer coating	16x30	.136	
 Black With One White Tracer	8652	100' S	16	Tinned copper, flexible stranding; cellophane wrap; rubber insulation; black cotton braid with one white tracer; lacquer coating	19x29	.140	
 Green With Two White Tracers	8651	100' S	14	Same as 8652 except green cotton braid with two white tracers	19x27	.163	
 Red With Three White Tracers	8650	100' S	12	Same as 8652 except red cotton braid with three white tracers	19x25	.195	
 Black	8656	100' S	16	Tinned copper, flexible stranding; cellophane wrap; rubber insulation; cotton braid; blue lacquer coating; tinned copper braid shield	19x29	.170	
 Black	8655	100' S	14	Tinned copper, flexible stranding; cellophane wrap; rubber insulation; cotton braid; blue lacquer coating; tinned copper braid shield	19x27	.195	
 Black	8654	100' S	12	Tinned copper, flexible stranding; cellophane wrap; rubber insulation; cotton braid; blue lacquer coating; tinned copper braid shield	19x25	.225	
 Black	8660	50' SK 250' S		Tinned copper braid in form of tubing	96x34	13/64 ID	
 Black	8668	50' SK 250' S		Tinned copper braid in form of tubing	120x34	1/8 ID	
 Black	8661	50' SK 250' S		Tinned copper braid in form of tubing	192x34	3/8 ID	
 Black	8669	50' S 250' S		Tinned copper braid in form of tubing	336x34	1/2 ID	
 Black	8662	50' S 250' S		Tinned copper braid in form of tubing	576x34	25/32 ID	

## photoelectric cell cable for sound projectors • instrument and lead wires

ILLUSTRATION AND COLOR	Trade Number	Lengths and Package	A.W.G.	GENERAL CONSTRUCTION	Stranding	Finished Cable O.D. (Inches)	Nominal Capacitance Per Ft (mmf)
 Black	8221	100' S	25	Tinned copper and tinned steel, flexible stranding; cellulose yarn braid, polyethylene insulation; tinned copper braid shield; black vinyl plastic jacket	3x33 copper 4x33 steel	.240	20
 Brown	8431	100' S	24	Tinned copper, flexible stranding; rubber insulation; tinned copper braid shield; fine brown cotton braid	16x36	.010	.085*
 Chrome	8014	25' ** 500' SK	25	Tinned copper, flexible stranding; chrome vinyl plastic insulation **Packaged 25 ft on card, 5 cards in carton	13x36	.010	.044
 Red with Two White Tracers	8869	25' S 100' S	20	Tinned copper, flexible stranding; polyethylene plastic insulation; red cotton braid with 2 white tracers; lacquer coating	7x28	.035	.145 10000
 Red	8868	25' S 100' S	20	Same as 8869 except heavier insulation and solid red braid	7x28	1/16	.205 20000
 Red	8899	††14' CK 100' S 1000' S	18	Tinned copper, extra flexible stranding; cotton wrap; rubber insulation	65x36	.043	.140 5000
 Red	8898	100' S 500' S	18	Tinned copper, extra flexible stranding; cotton wrap; rubber insulation	65x36	.088	.230 10000

\*Suggested values.

††7' Red and 7' Black






# BELDEN • microphone cables




Performance and appearance are the outstanding features built into Belden microphone cables. Polyethylene insulation is used for outstanding dielectric properties and vinyl plastic jackets for protection.

Dielectrically, Belden microphone cables have low capacitance, high insulation resistance, and low attenuation at audio frequencies. In addition, they provide resistance to physical abuse, aging, and moisture.

## plastic microphone cable

ILLUSTRATION AND APPLICATION	Trade Number	Lengths †Package and Color	A.W.G. and No. Condrs.	GENERAL CONSTRUCTION	Stranding	Fin-ished Cable O-D (Inches)	Nom. Capacitance Per Ft (mmf)
 For lapel microphones	8411	25' CK 100' S 500' S Chrome	25-1	Tinned copper and tinned steel, flexible stranding; cellulose yarn braid; polyethylene insulation; tinned copper braid shield; chrome vinyl plastic jacket	3x33 copper plus 4x33 steel	.140	40.
 For crystal, ribbon and carbon microphones	8401	25' CK 50' CK 100' S 500' S Chrome	25-1	Tinned copper and tinned steel, flexible stranding; cellulose yarn braid; polyethylene insulation; tinned copper braid shield; chrome vinyl plastic jacket	3x33 copper plus 4x33 steel	.200	25.
 For carbon microphones	8422	25' CK 50' CK 100' S 500' S Chrome	22-2	Tinned copper, flexible stranding; polyethylene insulation, color coded; conductors cabled with fillers; rayon braid; tinned copper braid shield; chrome vinyl plastic jacket	16x34	.235	**28.

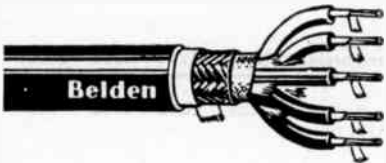
## rubber microphone cable

 For crystal ribbon and carbon microphones	8410	25' CK 50' CK 100' S 500' S Black	25-1	Tinned copper and tinned steel, flexible stranding; cellulose yarn braid; waxed; rubber insulation; rayon braid; tinned copper braid shield; rayon wrap; black rubber jacket	3x33 copper plus 4x33 steel	.245	33.
 For carbon microphones	8412	25' CK 50' CK 100' S 500' S Black	20-2	Tinned copper, flexible stranding; cotton wrap; rubber insulation, color coded; conductors cabled with fillers; rayon braid; tinned copper braid shield; cotton wrap; black rubber jacket	26x34	.280	***63.
 For carbon microphones	8423	50' CK 250' S Black	20-3	Tinned copper, flexible stranding; cotton wrap; rubber insulation, color coded; conductors cabled; rayon braid; tinned copper braid shield; cotton wrap; black rubber jacket	26x34	.280	††54.

\*\*Between one conductor and other conductor connected to shield. Nominal capacitance between conductors only, 16 mmf per foot.  
\*\*\*Between one conductor and other conductor connected to shield. Nominal capacitance between conductors only, 36 mmf per foot.  
††Between one conductor and other conductors connected to shield. Nominal capacitance between conductors only, 41 mmf per foot.

## shielded multiple conductor cables

Belden multiple conductor cables are developed for long service life, excellent mechanical and electrical characteristics, and uniform quality. These cables are used for a multitude of applications including power and interconnecting cords on radio receivers, electronic devices, speakers, analyzer test equipment, remote control circuits, and press-to-talk microphone circuits.


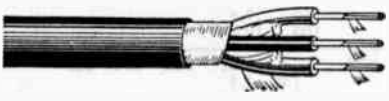
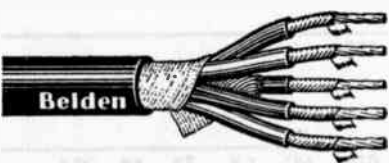
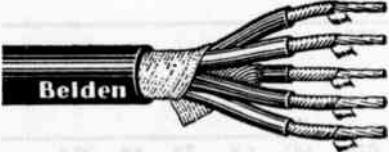


ILLUSTRATION	Trade Number	Lengths †Package and Color	A.W.G. and No. Condrs.	GENERAL CONSTRUCTION	Stranding	Nom. Insulation Thick. (Inches)	Nom. Jacket Thick. (Inches)	Fin-ished Cable O D (Inches)
	*8424	50' CK 250' S Black	20-4	Tinned copper, flexible stranding; cotton wrap; rubber insulation, color coded; conductors cabled; rayon braid; tinned copper braid shield; cotton wrap; black rubber jacket	26x34	.020	.040	.305
	8425	50' CK 250' S Black	20-5	Same as 8424 except five conductors	26x34	.020	.040	.335
	8426	100' S Black	20-6	Same as 8424 except six conductors	26x34	.020	.040	.355
	8427	100' S Black	20-7	Same as 8424 except seven conductors	26x34	.020	.040	.370

\*Also used as microphone cable.

†CK—Coiled in carton K—Carton CR—Crate reel S—Spool C—Coil SK—Spooled in carton

# BELDEN • multiple conductor cables

## RUBBER-JACKETED PORTABLE CORD






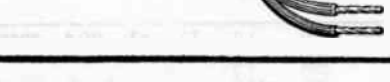

ILLUSTRATION	Trade Number	Lengths †Package and Color	A.W.G. and No. Condr.	GENERAL CONSTRUCTION	Stranding	Insulation Thick. (inches)	Jacket Thick. (inches)	Finished Cable O. D. (inches)
 Underwriters' Approved Type SV	8452	100' \$ 500' \$ Black	18-2	Bare copper, flexible stranding; cotton wrap; rubber insulation, color coded; conductors cabled with fillers; cotton wrap; black rubber jacket	41x34	1/64	1/32	.245
 Underwriters' Approved Type POSJ-64	8453	100' \$ 500' \$ Black	18-3	Bare copper, flexible stranding; cotton wrap; rubber insulation, color coded; conductors cabled with fillers; cotton wrap; black rubber jacket	41x34	1/64	1/32	.275
 Underwriters' Approved Type POT-64	8454	100' \$ 500' \$ Black	18-4	Same as 8453 except four conductors	41x34	1/64	1/32	.265
 Belden	8455	100' \$ 250' \$ Black	20-3 18-2	Bare copper, flexible stranding; cotton wrap; rubber insulation; color coded; conductors cabled with fillers; cotton wrap; black rubber jacket	26x34 41x34	1/64	1/32	.285
 Underwriters' Approved Type POSJ-64	8462	100' \$ 250' \$ Brown	18-2	Bare copper, flexible stranding; cotton wrap, color coded; parallel conductors with rubber insulation and jacket integral	41x34	1/32		.123x .223
 Underwriters' Approved Type POT-64	8888	250' \$ Black	18-2	One bare and one tinned copper conductor, flexible stranding; parallel conductors with vinyl plastic insulation and jacket integral	41x34	1/32		.114x .231

Flexible, light weight and small diameter.

Applications include control, annunciator, and communications circuits.

## BRAIDED PLASTIC-INSULATED CABLE

(See intercommunications cables, page 12, for shielded types.)

	8443	100' \$ 500' \$ Brown	22-3	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; conductors cabled; over-all brown cotton braid	7x30	.010		.140
	8444	100' \$ 500' \$ Brown	22-4	Same as 8443 except four conductors	7x30	.010		.153
	8445	100' \$ 500' \$ Brown	22-5	Same as 8443 except five conductors	7x30	.010		.167
	8446	100' \$ Brown	22-4 16-2	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; conductors cabled; over-all brown cotton braid	7x30 19x29	.010 .018		.218
	8447	100' \$ Brown	22-5 16-2	Same as 8446 except seven conductors	7x30 19x29	.010 .018		.235
	8448	100' \$ Brown	22-6 16-2	Same as 8446 except eight conductors	7x30 19x29	.010 .018		.240
	8449	100' \$ Brown	22-7 16-2	Same as 8446 except nine conductors	7x30 19x29	.010 .018		.260

## headphone cords



8872

1 K 5 Ft  
Brown

Headphone Set, Pin tips all ends. 5 Ft of extra-flexible moisture-resistant rubber insulated tinsel cord. Over-all durable brown cotton braid. "Y" arm sections 15", coupled in series.















8873

1 K 5 Ft  
Brown

Headphone Set, Spade tips 4 phone ends. Pin tips plug end. 5 Ft of extra-flexible moisture-resistant rubber insulated tinsel cord; over-all durable brown cotton braid. "Y" arm sections 15", coupled in series.

†CK—Coiled in carton K—Carton CR—Crate reel S—Spool C—Coil SK—Spooled in carton

# BELDEN • transmission line cables

ILLUSTRATION AND TYPE	Trade Number	Lengths and Package	A.W.G.	GENERAL CONSTRUCTION	Stranding	Finished Cable O.D. (inches)	NOMINAL ELECTRICAL PROPERTIES					
							Frequency (mc)	Attenuation Per 100 Ft (decibels)	Impedance (ohms)	Velocity of Propagation (per cent)	Capacitance Per Ft (mmf)	Insulating Voltage (volts)
 Coaxial	8216	50' S 250' S	14	Tinned copper, flexible stranding; low-loss rubber insulation; tinned copper braid shield; rubber jacket	19x27	.460	.5 1.0 5.0 10. 50. 100.	.30 .51 1.8 2.9 10.0 17.0	72.	56.	37.	30000
 Twisted Pair	8204	500' S	18	Tinned copper, flexible stranding; cotton wrap; low-loss rubber insulation, color coded; two conductors cabled; white cotton braid treated with weather-resistant compound	7x26	.190	.5 1.0 5.0 10. 50. 100.	.37 .53 1.4 2.3 7.4 12.3	72.	61.	21.	
 Twisted Pair (Shielded)	8209	500' S	18	Tinned copper, flexible stranding; cotton wrap; low-loss rubber insulation, color coded; two conductors cabled; paper wrap; tinned copper braid shield; white cotton braid, treated with weather-resistant compound	7x26	.235	.5 1.0 5.0 10. 50. 100.	.91 1.1 2.1 3.2 9.5 14.9	72.	57.	32.*	
 Twisted Pair	8205	500' S	22	Tinned copper, flexible stranding; paper wrap; rubber insulation, color coded; two conductors cabled; black cotton braid, treated with weather-resistant compound	7x30	.175						
 Parallel	8222	100' S 500' S	20	One bare and one tinned copper conductor, flexible stranding; conductors parallel; polyethylene plastic insulation Color: Browns	7x28	.075 x.128	50. 100. 200. 300. 400. 500.	5.3 7.7 11.0 13.6 15.9 17.8	72.	69.	20.7	
 Parallel	8223	100' S 500' S	20	Same as 8222	7x28	.075 x.143	50. 100. 200. 300. 400. 500.	3.5 5.1 7.2 8.9 10.3 11.5	100.	72.	16.3	
 Parallel	8224	100' S 500' S	20	Same as 8222	7x28	.075 x.182	50. 100. 200. 300. 400. 500.	1.9 2.8 4.2 5.4 6.4 7.3	150.	76.	9.8	
 Parallel	8225	100' S 500' S 1000' S	20	Same as 8222 Colors: White and Browns	7x28	.075 x.390	50. 100. 200. 300. 400. 500.	.72 1.1 1.7 2.2 2.7 3.1	300.	85.	4.6	
 Parallel	8235	100' S 500' S	18	Bare copper, flexible stranding; conductors parallel; polyethylene plastic insulation	7x26	.200 x.530	50. 100. 200. 300. 400. 500.	.70 1.10 1.73 2.28 2.74 3.18	300.	82.	5.8	35000
 Parallel	8210	100' S 500' S	13	Bare copper, flexible stranding; conductors parallel; polyethylene plastic insulation Color: Browns	7x21	.166 x.278	50. 100. 200. 300. 400. 500.	2.2 3.1 4.4 5.5 6.3 7.0	72.	85.	22.	15000
 Parallel (Shielded)	8226	100' S 500' S	20*	One bare and one tinned copper conductor, flexible stranding; conductors parallel; polyethylene plastic insulation; tinned copper braid shield; black vinyl plastic jacket	7x28	.190 x.310	50. 100. 200. 300. 400. 500.	5.8 8.3 12.0 14.8 17.2 19.4	100.	64.	18.2*	
 Twisted Pair (Shielded)	8227	100' S 250' S	20	One bare and one tinned copper conductor; flexible stranding; polyethylene plastic insulation; two conductors cabled; polyethylene plastic jacket; tinned copper braid shield; black vinyl plastic jacket	7x28	.335	50. 100. 200. 300. 400. 500.	2.6 4.1 6.4 8.4 10.2 11.8	100.	62.	22.*	
 Coaxial	8229	100' S 500' S	22	Bare copper, solid; polyethylene plastic insulation; tinned copper braid shield; black vinyl plastic jacket	solid	.242	50. 100. 200. 300. 400. 500.	3.2 5.0 7.7 10.0 12.1 14.1	72.	67.	20.5	20000
 Coaxial	8228	100' S 500' S	20	Bare copper, solid; polyethylene plastic insulation; tinned copper braid shield; black vinyl plastic jacket	solid	.195	50. 100. 200. 300. 400. 500.	2.75 4.46 7.2 9.6 11.8 13.6	52.	66.	28.5	20000

\*Capacitance between conductors.

†CK—Coiled in carton

K—Carton

CR—Crate reel

S—Spool

C—Coil

SK—Spooled in carton

# BELDEN • hookup and lead wires

There is a Belden hook-up and lead wire construction for every service requirement—for receivers, transmitters,

amplifiers, rectifiers, aircraft radio, geophysical instruments, and in all other types of electric equipment.

## HOOKUP WIRE CELLULOSE BRAID LACQUERED



Black, Blue, Green, Red, Yellow,  
White, Brown, Orange

Black, Blue, Green, Red,  
Yellow, White



Black, Blue, Green, Red, Yellow,  
White, Brown, Orange

Black, Blue, Green, Red,  
Yellow, White



Black, Green, Red,



8864  
8865

## RUBBER-INSULATED PUSH-BACK

Colors:  
Black, Blue, Green, Red, Yellow, White



## SHIELDED HOOKUP WIRE



## R-F PUSH-BACK WIRE CELLULOSE ACETATE BRAID WAXED



Trade Number	Lengths and Package	A.W.G.	GENERAL CONSTRUCTION AND COLORS	Stranding	Insulation Thick. (inches)	Finished OD (inches)	Normal *B-C Ins. Res. Per Ft (meg-ohms)	Normal **Break-down Voltage (volts)
8941	25' CK 100' SK 1000' S	20	Tinned copper, solid; heavy cellulose acetate yarn wrap; cellulose acetate yarn braid; fungus-resistant lacquer coating	solid		.072	200	1000
8945	25' CK 100' SK 1000' S	18	Tinned copper, flexible stranding; heavy cellulose acetate yarn wrap; cellulose acetate yarn braid; fungus-resistant lacquer coating	10x30		.077	200	1000
8943	25' CK 100' SK 1000' S	20	Tinned copper, flexible stranding; heavy cellulose acetate yarn wrap; cellulose acetate yarn braid; fungus-resistant lacquer coating	16x30		.087	200	1000
8947	25' CK 100' SK 1000' S	18	Tinned copper, flexible stranding; heavy cellulose acetate yarn wrap; cellulose acetate yarn braid; fungus-resistant lacquer coating	26x30		.099	200	1000
8942	100' SK 1000' S	14	(2 colors only; Red or Black)	41x30		.115	200	1000
8938	100' SK 500' S	14	(2 colors only; Red or Black)					

## DISPLAY ASSORTMENT

8864

Contents: 6 Rolls 8941, Size 20 solid; cellulose acetate wrap and braid lacquered. One each Black, Blue, Green, Red, Yellow, and White.

8865

Contents: 6 Rolls 8943, Size 20 flexible; cellulose acetate wrap and braid lacquered. One each Black, Blue, Green, Red, Yellow, and White.

General-use hook-up wire and as leads for transformers, speakers, and controls, in audio and power circuits. Furnished in the following 6 colors: Black, Blue, Green, Red, Yellow, and White. SPECIFY COLOR.

8837	.100' SK 1000' S	20	Tinned copper, solid; cotton wrap; unvulcanized rubber insulation; cellulose acetate yarn braid; fungus-resistant lacquer coating	solid	.010	.075	2000	2000
8838	100' SK 1000' S	20	"SAME AS 8837 EXCEPT FLEXIBLE STRANDING"	10x30	.010	.081	2000	2000
8833	100' S 1000' S	18	Tinned copper, flexible stranding; paper wrap, rubber insulation; cellulose acetate yarn braid; fungus-resistant lacquer coating	10x30 16x30	.031 .031	.127 .136	10000 10000	8000 8000
8885	25' CK 100' SK 500' S	20	Tinned copper, flexible stranding; rubber insulation; cellulose acetate yarn braid; fungus-resistant lacquer coating; tinned copper braid shield	10x30	.015	.117	5000	4000

Used in circuits where shielded grid return is required and to shield a circuit conductor from stray fields.

Used on r-f circuits where low-loss properties are required. Furnished in following colors: Black, Blue, Green, Red, each with White Tracer, and Yellow and White, each with Black Tracer. SPECIFY COLOR.

8841	25' CK 100' SK 1000' S	20	Tinned copper, solid; two cellulose acetate yarn braids, waxed  Colors: Black—White Tracer Blue—White Tracer Green—White Tracer Red—White Tracer	solid		.067	1000	1000
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\*Measurements for d-c insulation resistance were made by means of a megohm bridge at 300 volts on specimens in mercury after subjection to 90% relative humidity and 100 F for 24 hours.

\*\*Measurements for insulation breakdown were made on specimens in mercury by application of gradually increasing 60-cycle a-c potential.

# BELDEN • hook-up and lead wires

R-F PUSH-BACK WIRE CELLULOSE ACETATE BRAID WAXED



PLASTIC INSULATED



Trade Number	Lengths and Package	A.W.G.	GENERAL CONSTRUCTION AND COLORS	Stranding	Insulation Thick. (inches)	Finished O D (inches)	Nominal *D-C Ins. Res. per Ft (meg-ohms)	Nominal **Break-down Voltage (volts)
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## DISPLAY ASSORTMENT

**8860** Contents: 2 Rolls 8941. Size 20 solid; cellulose acetate wrap and braid lacquered, Black and Red; 2 rolls 8943. Size 20 flexible; cellulose acetate wrap and braid lacquered, Blue and Green; 2 rolls 8913. Size 20 flexible; vinyl plastic, Yellow and White.

<b>8839</b>	100' SK 1000' S	20	Tinned copper, flexible stranding; two cellulose acetate yarn braids, waxed	10x30		.072	1000	1000
<b>8844</b>	100' SK 1000' S	18	Colors: Black—White Tracer Blue—White Tracer Green—White Tracer Red—White Tracer	16x30		.092	1000	1000

General-use hook-up wire and as leads for radio components such as transformers, chokes, and controls. Furnished in the eight following colors: Black, Blue, Green, Red, Yellow, White, Brown, and Orange. SPECIFY COLOR.

Wires with 1/4" plastic insulation are designed for use within the chassis of radio receivers, amplifiers, instruments, controls, and other electronic devices. Wires with .025" plastic insulation are designed for use inside or outside the chassis but within the radio cabinet. The operating temperature limit for these wires is 80 C (176 F).

Tinned copper, solid; vinyl plastic insulation

<b>8901</b>	100' SK 1000' S	20	Colors: Black, Yellow, Blue, Red, Green,	solid	.015	.066	5000	8000
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## DISPLAY ASSORTMENT

**8858** Contents: 6 Rolls 8909. Size 20 solid vinyl plastic. One each Black, Blue, Green, Red, Yellow, and White.

<b>8905</b>	100' SK 1000' S	20	Tinned copper, flexible stranding; vinyl plastic insulation	10x30	.015	.075	5000	8000
<b>8913</b>	100' SK 1000' S	20	Colors: Black, Yellow, Blue, White, Green, Brown, Red, Orange	10x30	.025	.093	5000	12000

## DISPLAY ASSORTMENT

**8859** Contents: 6 Rolls 8913 Size 20 flexible; vinyl plastic. One each Black, Blue, Green, Red, Yellow, and White.

## • replacement and extension cords

each cord bears Underwriters' label of approval

Trade Number	Lengths and Color	A.W.G.
<b>1701</b>	1 K	10 Ft Brown
<b>1702</b>	1 K	15 Ft Brown
<b>1705</b>	1 K	6 Ft Brown



Extension Cord—Size 18, Type POSJ-64. Extra-flexible all-rubber parallel lamp cord. Both ends unbreakable rubber. Does not mar floors or furniture. Safe for use on table tops.



<b>1751</b>	1 K	25 Ft Black
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Extension Cord—Size 18, Type SV. All-rubber portable cord with Belden molded-on all-rubber connector and Belden unbreakable soft rubber plug.



<b>1725</b>	1 K	7 Ft 6 In. Brown
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Replacement Cord—Size 18, Type POSJ-64. Extra-flexible all-rubber parallel lamp cord with Belden unbreakable soft rubber plug; opposite end stripped and tinned—ready for easy attachment. For lamps, radios, small appliances.

Trade Number	Lengths and Package	A.W.G.
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**1749**

1 K	6 Ft 3 In. Black
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Replacement Cord—Size 18, Type SV. All-rubber portable cord with Belden unbreakable soft rubber plug; opposite end stripped and tinned—ready for easy attachment. For amplifiers, test equipment and small appliances.



**8874**

1 K	6 Ft Brown
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Television Power Supply Connector Cord. Original equipment on most television sets. Size 18, Type POSJ-64. Extra-flexible all-rubber parallel lamp cord with Belden molded-on all-rubber connector and Belden unbreakable soft rubber plug.



**8125**






10 K
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Male Connector—Flush mounting for use with 8874 cord connector set.

†CK—Coiled in carton K—Carton CR—Crate reel S—Spool

C—Coil SK—Spooled in carton

# BELDEN • intercommunicating and sound system cables

ILLUSTRATION AND APPLICATION	Trade Number	Lengths and Package	A. W. G. and No. Condr.	No. Pairs	GENERAL CONSTRUCTION	Tinned Copper Shielding	Stranding	Condr. Insulation Thickness (Inches)	Finished Cable O D (Inches)
 <p>For Station-to-Station and Extension Wiring (Unshielded)</p>	8740	100' S 500' S	22-2	1	Bare copper, solid; heavy formvar enamel coating; cotton braid; waxed; color coded; conductors cabled; over-all brown cotton braid	None	solid		.130
	8741	100' S 500' S	22-4	2		None	solid		.200
	8742	100' S 500' S	22-6	3		None	solid		.225
	8743	100' S 500' S	22-12	6	Tinned copper, solid; vinyl plastic insulation, color coded; conductors cabled in pairs; over-all brown cotton braid	None	solid	.010	.275
	8744	100' S 500' S	22-18	9		None	solid	.010	.320
	8745	100' S 500' CR	22-30	15		None	solid	.010	.415
 <p>For Station-to-Station and Extension Wiring (Shielded)</p>	8746	100' S 500' CR	22-54	27		None	solid	.010	.535
	8734	100' S 500' S	22-3	Not paired	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; three conductors cabled, one conductor tinned copper braid shield, and two conductors unshielded; over-all brown cotton braid	Over 1 conductor	7x30	.010	.155
	8735	100' S 500' S	22-3	Not paired	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; three conductors cabled; tinned copper braid shield; over-all brown cotton braid	Over 3 cabled conductors	7x30	.010	.170
	8737	100' S 500' S	22-2	1	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; conductors cabled; tinned copper braid shield; over-all brown cotton braid	Over 2 cabled conductors	7x30	.010	.155
	8738	100' S 500' S	22-2	1	Bare copper, solid; heavy formvar enamel coating; cotton braid; waxed; color coded; conductors cabled; tinned copper braid shield	Over 2 cabled conductors	solid		.125
	8739	100' S 500' S	22-2	1	Same as 8738 plus over-all brown cotton braid	Over 2 cabled conductors	solid		.160
 <p>For Station-to-Terminal Wiring (Unshielded)</p>	8747	100' S	22-12	6	Tinned copper, flexible stranding; vinyl plastic insulation, color coded; conductors cabled in pairs; over-all brown cotton braid	None	7x30	.010	.305
	8748	100' S	22-18	9		None	7x30	.010	.350
	8749	100' S	22-30	15		None	7x30	.010	.445
	8750	100' S	22-54	27		None	7x30	.010	.565
	 <p>For Station-to-Terminal Wiring (Shielded)</p>	8751	100' S	25-12 16-2	Not paired	Bare copper, flexible stranding; vinyl plastic insulation, parallel thread for color coding; 12 conductors 25-ga individually shielded, cabled (not paired) with 2 conductors 16-ga unshielded; over-all brown cotton braid	Over each 25-ga conductor only	7x33 19x29	.015 .012
8752		100' S	25-22 16-2	Not paired	Same construction as 8751 except 22 conductors 25-ga individually shielded	Over each 25-ga conductor only	7x33 19x29	.015 .012	.485
 <p>P. A. Cable—Amplifier-to-Speaker</p>	8799	100' S 500' S	18-2	1	Bare copper, solid; heavy formvar enamel coating; cotton wrap; cotton braid; waxed; color coded; conductors cabled; tinned copper braid shield	Over 2 cabled conductors	solid		.165
	8432	100' S 500' S	20-2	Not paired	Tinned copper, flexible stranding; paper wrap; rubber insulation; cotton braid; lacquer coating; color coded; conductors cabled; tinned copper braid shield	Over-all	10x30	.015	.215
	8433	100' S 500' S	20-3	Not paired		Over-all	10x30	.015	.230

†CK—Coiled in carton    K—Carton    CR—Crate reel    S—Spool    C—Coil    SK—Spooled in carton

# BELDEN • Price List

Belden Trade Number	Unit Package & Length**	Suggested List Price Each	Belden Trade Number	Unit Package & Length**	Suggested List Price Each	Belden Trade Number	Unit Package & Length**	Suggested List Price Each	Belden Trade Number	Unit Package & Length**	Suggested List Price Each
1701	Brown	\$1.30	8422	100'	\$.09'	8817	100'	.40	8905†	25'	\$.40
1702	Brown	1.45	8422	500'	.09'	8833†	100'	.03'	8905†	100'	1.25
1705	Brown	1.20	8423	50'	5.00	8833†	1000'	.03'	8905†	1000'	.015'
1706	Brown	2.40	8423	250'	.11'						
1709	Brown	2.75	8424	50'	6.25						
1712	Brown	3.00	8424	250'	.14'						
1715	Brown	3.25	8425	50'	7.25	8837†	25'	.50	8913†	25'	.45
1725	Brown	.55	8425	250'	.16'	8837†	100'	1.95	8913†	100'	1.55
1749	Black	.70	8426	100'	.20'	8837†	1000'	.02'	8913†	1000'	.015'
1751	Black	2.15	8427	100'	.21'	8838†	25'	.55	*8918	250'	.025'
*1777		.90	8431	100'	.04'	8838†	100'	2.00	*8918	1000'	.025'
8000	50'	.70	8432	100'	.07'	8838†	1000'	.02'	8920		1.25
8000	75'	1.00	8432	500'	.07'	8839†	25'	.55	8921		1.25
8000	100'	1.25	8433	100'	.09'	8839†	100'	2.00	8922		1.25
8000	1000'	11.40	8433	500'	.09'	8839†	1000'	.02'	8923		1.25
8002	50'	.53	8443	100'	.045'	8841†	25'	.50	8924		1.25
8002	75'	.70	8443	500'	.045'	8841†	100'	1.85	8925		1.25
8002	100'	.90	8444	100'	.06'	8841†	1000'	.02'	8929		1.25
8002	1000'	7.75	8444	500'	.06'						
			8445	100'	.07'						
			8445	500'	.07'						
			8446	100'	.10'	8844†	25'	.60	8938†	100'	2.90
			8447	100'	.11'	8844†	100'	2.25	8938†	500'	.015'
			8448	100'	.12'	8844†	1000'	.025'	8941†	25'	.45
			8449	100'	.12'				8941†	100'	1.65
8008	100'	1.95	8449	100'	.12'				8941†	1000'	.015'
8008	200'	3.75	8452	100'	.05'						
8008	500'	9.00	8452	500'	.05'						
8009	100'	1.35	8453	100'	.07'				8942†	100'	2.40
8009	500'	6.00	8453	500'	.07'				8942†	1000'	.025'
8011	100'	1.95	8454	100'	.08'				8943†	25'	.50
8012	100'	1.40	8454	500'	.08'				8943†	100'	1.80
8013	100'	1.05	8455	100'	.10'				8943†	1000'	.02'
8014	25'	.30	8455	250'	.10'				8945†	25'	.50
8014	500'	.015'	8462	100'	.03'				8945†	100'	1.90
			8462	250'	.03'				8945†	1000'	.02'
			*8472		.08'				8947†	25'	.55
			*8482		.015'				8947†	100'	2.10
			*8483		.025'	8864		2.70	8947†	1000'	.025'
8125		.20	8484	500'	.045'	8865		3.00	8976		1.25
8126		.15	8484	1000'	.045'	8868	25'	1.55	8977		1.25
8127	10'	.23	8484	1000'	.045'	8868	100'	.055'	8977	25c pkg.	.25
8200	100'	.015'	8650	100'	.08'	8869	25'	1.00	8989	100	.75
8200	500'	.015'	8651	100'	.06'	8869	100'	.03'	8989	1000	5.00
8200	1000'	.015'	8652	100'	.05'	8872	1.25		8989	25c pkg.	.25
			8654	100'	.10'	8873	1.15		8992	100	.75
						8873	1.15		8992	1000	5.00
						8874	.70		8993	25c pkg.	.25
			8656	100'	.07'	8885	25'	1.00	8993	100	.65
						8885	100'	.04'	8993	1000	3.75
						8885	500'	.04'	8994		.65
						8888	250'	.05'	8995	25c pkg.	.25
						8890		30	8995	100	.65
									8995	1000	3.75
									8996	25c pkg.	.25
									8996	100	.65
									8996	1000	3.75
									8997	25c pkg.	.25
									8997	100	.65
									8997	1000	3.75
									8998	25c pkg.	.25
									8998	100	.50
									8998	1000	2.50
									8999	25c pkg.	.25
									8999	100	.50
									8999	1000	3.10

\*New Item. †Specify Color. All prices subject to change without notice.  
 \*\*Please indicate length desired, immediately following trade number, when more than one length is listed under the same trade number.

BELDENAMEL MAGNET WIRE				SINGLE COTENAMEL MAGNET WIRE				SINGLE NYLTEXENAMEL MAGNET WIRE			
Size	Suggested List Price			Size	Suggested List Price			Size	Suggested List Price		
	1/4 lb. Spools	1/2 lb. Spools			1/4 lb. Spools	1/2 lb. Spools			1/4 lb. Spools	1/2 lb. Spools	
14	—	—	\$.70	14	—	—	\$.75	18	—	—	—
16	—	—	.70	16	—	—	.80	20	—	—	—
18	—	—	.70	18	—	—	.85	22	—	—	\$1.10
20	—	—	.70	20	—	—	.90	24	—	—	1.25
22	—	—	.70	22	—	—	.95	26	\$.80	—	1.45
24	—	—	.70	24	—	—	1.05	28	.90	—	1.70
26	—	—	.75	26	\$.65	—	1.15	30	1.15	—	2.15
28	\$.50	—	.80	28	.70	—	1.30	32	1.35	—	2.50
30	.50	—	.95	30	.85	—	1.60	34	1.70	—	—
32	.55	—	.95	32	1.00	—	1.85	36	2.50	—	—
34	.60	—	1.05	34	1.35	—	—				
36	.75	—	1.30	36	1.60	—	—				
38	.95	—	—								
40	1.35	—	—								



# RADIO AND TELEVISION WIRE PRODUCTS

## P-A WIRES and CABLES

### HOLLYWOOD MICROPHONE CABLES (Shielded-Jacketed)

Substantially made to withstand rough usage. Special low capacity color coded conductors. Braided with tinned copper shield. Tough weatherproof polished jacket overall.

Single Conductor — unusually low capacity. Can be used up to 100 ft. with high impedance ribbon microphones and up to 50 ft. with crystal microphones.



Cat. No.	Conductors	Approx. Feet on Spool	Approx. Outside Diam.	List Price M ft.
1105	1	100	.260"	\$85.00
2104	1	500	.260"	82.00
2101	1	1000	.260"	80.00



Two Conductor, for low impedance microphones and transmission lines.

1152	2	100	.280"	\$105.00
1153	2	250	.280"	102.00
2152	2	500	.280"	100.00
1154	3	100	.280"	130.00
1155	3	250	.280"	127.00
2153	3	500	.280"	125.00
1156	4	100	.305"	160.00
1157	4	250	.305"	157.00
2154	4	500	.305"	155.00

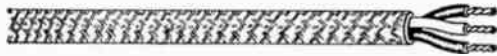
### LAPEL MICROPHONE CABLE



Similar to No. 2101 except smaller in diameter.

1160	1	100	.175"	\$75.00
1161	1	500	.175"	72.00
2160	1	1000	.175"	70.00

### SHIELDED CABLES



These cables are recommended for sound recording equipment and P.A. systems where a flexible shielded cable is necessary. Each conductor consists of multi-strand copper wire cotton served, rubber covered and braided with color-coded cotton. Conductors No. 20 gauge unless otherwise specified.

Cat. No.	Put-Up	List Price per M ft.
1114	100' Spool 2 Conductor	\$ 78.00
1115	250' Spool 2 Conductor	75.00
1116	100' Spool 3 Conductor	108.00
1117	250' Spool 3 Conductor	105.00
1118	100' Spool 4 Conductor	135.00
1119	250' Spool 4 Conductor	132.00
1120	100' Spool 5 Conductor	161.00
1121	250' Spool 5 Conductor	158.00
1122	100' Spool 6 Conductor	183.00
1123	250' Spool 6 Conductor	180.00

### SHIELDED CABLES—COTTON BRAID OVERALL

Cat. No.	Put-Up	List Price per M ft.
1125	250' Spool 2 Conductor	\$ 95.00
1127	250' Spool 3 Conductor	132.00
1129	250' Spool 4 Conductor	160.00
1131	250' Spool 5 Conductor	190.00
1133	250' Spool 6 Conductor	220.00

### RADIO BATTERY CABLE AND DYNAMIC SPEAKER EXTENSION CABLE

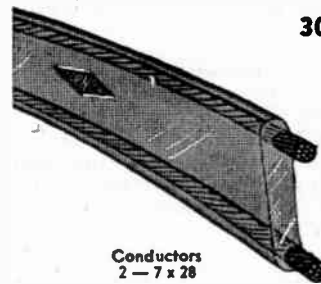
Multi-conductor cables having flexible conductors with overall heavy cotton braid. Individual conductor consists of stranded copper, rubber covered with color-coded cotton braid. Suitable to all types of P.A. Systems. Conductors No. 20 gauge.

Cat. No.	Put up in spool	List Price per M ft.	Cat. No.	Put up in spool	List Price per M ft.
228	3 Wire-100 Ft.	\$ 70.00	241	7 Wire-100 Ft.	\$137.00
219	4 Wire-100 Ft.	85.00	222	8 Wire-100 Ft.	153.00
221	5 Wire-100 Ft.	100.00	223	9 Wire-100 Ft.	170.00
231	6 Wire-100 Ft.	120.00	224	10 Wire-100 Ft.	186.00

### SHIELDED LEAD-IN AND GROUND WIRE

These products are made of flexible stranded copper conductors insulated with a substantial wall of high grade rubber with an overall of close tinned copper shield. They are most frequently used as a shielded down lead to ground out interference noises.

No. 20 1/32" R.C.	List Price Price	No. 18 1/32" R.C.	List Price Price
1143— 50 Ft. Coll....	\$ 1.90	1146— 50 Ft. Coll....	\$ 2.10
1144— 250 Ft. Spool....	8.00	1147— 250 Ft. Spool....	9.25
1145—1000 Ft. Spool....	30.00	1148—1000 Ft. Spool....	35.00



### 300-OHM TELEVISION DOWN-LEAD

Furnished in three web thicknesses shown below, in order to meet all weather and operating conditions.

Supplied in brown and clear.

Cat. No.	Web Thickness	List Price per M Ft. 250' Spool	List Price per M Ft. 1000' Spool	*Mill Reel	Approx. Wt. per M Ft.
500	.045"	\$28.25	\$27.50	\$26.75	17 lbs.
501	.065"	30.75	30.00	29.25	20 lbs.
502	.100"	40.75	40.00	39.25	28 lbs.

### TELEVISION ANTENNA ROTATOR CABLE

Consists of 4 conductors, each 7 x 28 (3 bare and 1 tinned), poly-ethylene insulated, ribbed to permit easy stripping.

Cat. No.	250' Spool	List Price per M Ft. 1000' Spool	*Mill Reel	Approx. Wt. per M Ft.
510	\$40.75	\$40.00	\$39.25	30 lbs.

### BRAIDED TINNED COPPER TUBULAR SHIELDING

Recommended for wires up to 1/4" O.D.

Cat. No.	Put-Up	Width	List Price Each
1109	100 Ft. Spool	1/4"	\$ 6.25
1110	250 Ft. Spool	1/4"	14.00

\*About 2500 Feet.

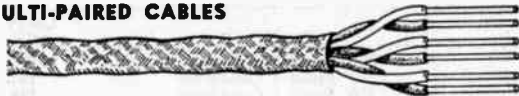




# RADIO AND TELEVISION WIRE PRODUCTS

## INTERCOMMUNICATION CABLES

### MULTI-PAIRED CABLES



Conductors are No. 22 solid tinned copper insulated with either vinyl plastic or double cotton impregnated braid—cabled in color-coded twisted pairs—with overall cotton braid.

Cat. No.	Put-Up	Width	List Price per M ft.
1225	2 Pair (O.D. approx. $\frac{1}{8}$ " )		\$ 54.00
1226	6 Pair (O.D. approx. $\frac{1}{4}$ " )		153.00
1227	18 Pair (O.D. approx. $\frac{3}{8}$ " )		325.00
1228	26 Pair (O.D. approx. $\frac{7}{8}$ " )		640.00

### TWO CONDUCTOR SHIELDED CABLE



Consists of two No. 20 stranded tinned copper plastic insulated conductors, color-coded and twisted with overall close tinned copper shield.

No. 1230 .....\$45.00

### THREE CONDUCTOR CABLE

3 Conductors are No. 20 solid tinned copper, plastic insulated, color-coded, twisted, with overall treated cotton braid.

No. 1231 .....\$42.00

### THREE CONDUCTOR (One Shielded)

Consists of a twisted pair of No. 20 solid tinned copper plastic insulated wires, and a single No. 20 solid tinned copper plastic insulated and shielded, all twisted, with over-all dry cotton braid.

No. 1232 .....\$75.00

No. 1233—Same as No. 1232 except conductors are No. 22 solid .....\$63.00

### FLEXIBLE CORDS (Fixture Wires — Lamp Cords)

Fixture wires often used as all-purpose radio and lead-in wire. Lamp cords used for power supply and extension cords. Colors: Brown, Black, Ivory.

Cat. No.	Put-Up	List Price per M ft.
3050—No. 18 Single, Type F, Cotton.....	1000 ft.....	\$17.50
*3020—No. 18 Parallel, Type PO, Rayon.....	250 ft.....	40.00
*3000—No. 18 Parallel, Type POSJ, All Rubber..	250 ft.....	32.50
*3800—No. 18 All Rubber Service Cord, Type SJ..	250 ft.....	60.00
*3500—Replacement Cord Set—6 ft. 18/2, POSJ,		
1/64 with Molded Rubber Plug.....		.40 ea.

\*Has Underwriter's Labels.

## AERIAL WIRE

### STRANDED BARE WIRE — Copper

No.	Ft.	Size	List Price
40A	75-ft. coil	7/22	\$ 1.07
40	100-ft. coil	7/22	1.40
40B	1000-ft. spool	7/22	14.00
42A	75-ft. coil	7/24	.75
42	100-ft. coil	7/24	.95
42B	1000-ft. spool	7/24	9.50

## LEAD-IN WIRE

### STRANDED—Rubber Covered

No.	Ft.	Size	List Price	No.	Ft.	Size	List Price
800	50' coil	18- $\frac{1}{32}$ "	\$ .60	302	500' spool	18- $\frac{1}{32}$ "	\$5.50
801	100' spool	18- $\frac{1}{32}$ "	1.10	303	1000' spool	18- $\frac{1}{32}$ "	10.50

## LEAD-IN WIRE

### SOLID—Rubber Covered

No.	Ft.	Size	List Price	No.	Ft.	Size	List Price
320	25' coil	18- $\frac{1}{32}$ "	\$ .32	330	25' coil	20- $\frac{1}{32}$ "	\$ .28
321	50' coil	18- $\frac{1}{32}$ "	.57	331	50' coil	20- $\frac{1}{32}$ "	.51
322	500' spool	18- $\frac{1}{32}$ "	5.25	332	500' spool	20- $\frac{1}{32}$ "	4.75
323	1000' spool	18- $\frac{1}{32}$ "	10.00	333	1000' spool	20- $\frac{1}{32}$ "	9.00

### TWISTED PAIR DOWNLOAD

Two conductors, each No. 22 stranded copper, 1/32" rubber-covered (one black, one red), twisted and covered with overall black weatherproof braid.

No. 122—List Mft. ....\$30.00



Note UL label

### "NOFLAME-COR"—

The Television Hook Up Wire

For the first time a hook-up wire for the trade with Underwriters' Label attached. The famous "NoFlame-Cor" wire is approved for 90°C—600 volt usage.

SOLID				STRANDED			
Cat. No.	Size	Put-up	List Each	Cat. No.	Size	Put-up	List Each
470	22	100' spool	\$2.25	473	22	100' spool	\$2.45
471	20	"	2.55	474	20	"	2.80
472	18	"	3.15	475	18	"	3.40

## RADIO HOOK-UP WIRE

### "CORLAC" HOOK-UP WIRE

Special under-insulation makes this hook-up wire moisture-proof and gives voltage break-down of 3100 volts (as per certified report of Electrical Testing Laboratory, N. Y. C.). Excellent push-back in waxed finish. Tinned copper conductors.

WAXED			LACQUERED		
Cat. No.	Put-Up	List Each	Cat. No.	Put-Up	List Each
No. 22 SOLID					
434—	25 Ft. Cartons...	.40	452—	25 Ft. Cartons...	.46
436—	1000 Ft. Spools....	10.60	454—	1000 Ft. Spools....	12.50
No. 20 SOLID					
437—	25 Ft. Cartons...	.48	455—	25 Ft. Cartons...	.56
439—	1000 Ft. Spools....	13.00	457—	1000 Ft. Spools....	16.00
No. 22 STRANDED					
443—	25 Ft. Cartons...	.44	461—	25 Ft. Cartons...	.50
445—	1000 Ft. Spools....	12.00	463—	1000 Ft. Spools....	14.00
No. 20 STRANDED					
446—	25 Ft. Cartons...	.52	464—	25 Ft. Cartons...	.58
448—	1000 Ft. Spools....	14.50	466—	1000 Ft. Spools....	17.00
No. 18 STRANDED					
449—	25 Ft. Cartons...	.64	467—	25 Ft. Cartons...	.72
451—	1000 Ft. Spools....	19.00	469—	1000 Ft. Spools....	22.50

### AC-DC ANTENNA WIRE

Flexible Bare copper conductor with brown cotton braid.

661	1000 Ft. Spools	\$10.00
661A	25 Ft. on Fibre	.33

### TEST LEAD WIRE

A super flexible conductor covered with heavy live rubber. Will not wear, kink or crack. Made in Black and Red. Mention color when ordering. O.D.—.140".

1140	100 Ft. Spools	\$ 3.00
1141	500 Ft. Spools	13.00
1142	1000 Ft. Spools	25.00



# TV Lead-in Cables by Federal



Transmission Lines for Every Television Application by America's Largest Manufacturer of Solid Dielectric HF Cables

## Type K-1046 300-Ohm TV Lead-In



Insulated with Federal "Silver" polyethylene—the revolutionary development that provides greater resistance to weather, heat and sunlight. Unchanging electrical and physical char-

acteristics assure long, trouble-free service. Installations are more attractive—silver insulation blends with any color scheme in home decoration.

Federal		Nominal Impedance Ohms	Nominal Attenuation DB per 100 feet			Suggested Retail Price per ft.
Catalog No.	Code No.		50 Mc	100 Mc	200 Mc	
3025	K-1046	300	1.4	2.0	3.5	\$.03

## Type K-111 Shielded 300-Ohm TV Lead-In



Shielded and balanced 300-ohm TV lead-in that minimizes "snow," "ghosts" and electrical noise due to lead-in pick-up. For use in high signal strength, high noise level areas.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3024	K-111	300	2.4 at 50 Mc. 3.4 at 100 Mc. 4.6 at 200 Mc.	\$.2083

## Type K-117 Shielded 185-Ohm TV Lead-In



185-ohm shielded TV lead-in for use in matching multi-stacked arrays, multiple outlet installations, and long unsupported runs in noisy localities.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3069	K-117	185	2.4 at 50 Mc. 3.8 at 100 Mc. 6.0 at 200 Mc.	\$.2222

## Type K-200 Ultra Low-Loss 200-Ohm TV Lead-In



A 200-ohm TV lead-in that is the answer to satisfactory reception in extreme fringe areas where weak signal strength demands a lead-in with absolute minimum losses.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3027	K-200	200	.45 at 50 Mc. .56 at 100 Mc. .66 at 200 Mc.	\$.2485

## Type TV-59 Coaxial 72-Ohm TV Lead-In Cable



An economical, high-quality 72-ohm coaxial cable for use as lead-in with unbalanced input TV receivers.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3023	TV-59	72	3.8 at 100 Mc.	\$.08

## Type RG-59/U Coaxial 72-Ohm TV Lead-In Cable



72-ohm (U. S. Government approved) coaxial cable. For use with unbalanced input TV receivers where top quality installation is essential.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3059	RG-59/U	72	2.7 at 50 Mc. 3.8 at 100 Mc. 6.0 at 200 Mc.	\$.13

## Type RG-8/U Coaxial 52-Ohm TV Lead-In Cable



52-ohm low-loss (U. S. Government approved) coaxial cable. Characteristics and quality proved in every installation where this type cable is indicated. For special applications and experimental work.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3035	RG-8/U	52	1.25 at 50 Mc. 2.0 at 100 Mc. 3.2 at 200 Mc.	\$.22

## Type RG-11/U Coaxial 75-Ohm Low-Loss TV Lead-In Cable



75-ohm low-loss (U. S. Government approved) coaxial cable. For use with unbalanced input TV receivers in low signal strength areas.

Federal		Nominal Impedance Ohms	Attenuation DB/100 ft.	Sugg'd Retail Price, per ft.
Catalog No.	Code No.			
3038	RG-11/U	75	1.35 at 50 Mc. 2.1 at 100 Mc. 3.1 at 200 Mc.	\$.22

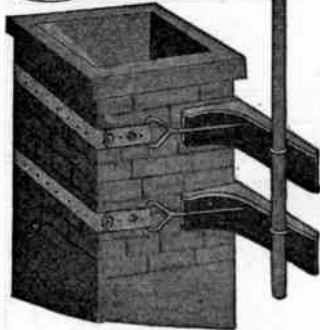
Intelin High Frequency Cables, Manufactured by Federal Telephone and Radio Corporation, Are Available in a Complete Line for All Electronic Requirements.



\*Trade Mark



# Birnbach TV-FM ANTENNA ACCESSORIES



## THE NEW MODEL No. 6000

### CHIMNEY MOUNT ANTENNA BASE

Installation men have for years shown their preference for Birnbach Products — now, once again Birnbach shows the way. The New Birnbach Chimney Mount Antenna Base No. 6000 has received a ready and sensational acceptance. Its ease of installation, its unusual durability, versatility, and last but not least its very low price have all added up now once again, as in the past, that Birnbach has shown the way to quality at a low, low price.

Here it is . . . The New Birnbach Chimney Mount Antenna Base Model 6000 for . . .

FM • TELEVISION • AMATEURS

#### A Few of Its Many Features:

- **Simple — One Man Operation**  
Sharply reduces installation time and cost.
- **No Drilling**  
No special tools — no special equipment.
- **Fits All Chimneys and adaptable for posts, corners of buildings, etc.**
- **Two Separate Sections**  
Longer distance between sections allows maximum mast support.
- **Base Castings Made of Strong Corrosion-Resistant Die Cast Aluminum Alloy** — highest possible tensile strength.
- **Easily Installed at Highest Elevation.**
- **Fits Masts 3/8" to 1 1/2" O.D.**
- **Complete With All Hardware** — 2 — 12-ft. steel strapping, etc., ALL COMPLETELY RUST-RESISTANT.
- **Simple Instructions.**

No. 6000 — Complete.....List Price \$5.50 Per Pair

#### WOOD SCREW ANCHOR



Especially designed to give permanent anchorage in any kind of masonry for insulated ribbon, coaxial or similar type standoffs. Threaded to take No. 10 Wood Screws and to fit 3/8" dia. hole. After partially inserting the threaded end of the standoff into this wood screw anchor and then using a pair of pliers to dig deeper into the anchor you have positive assurance of trouble-free installation. Rustproof, galvanized steel. Free tamping tool with each 100 anchors.

a permanent Free tamping tool with each 100 anchors.

No. 7039 Standard Package 100 List Price \$11.00 per C

#### MACHINE SCREW ANCHORS



These anchors are tapped for 1/4" machine screw bolts. Takes a 1/2" dia. hole and comes with a 3/4" long bolt. Gives permanent anchorage. Used for fastening wall mounts brackets and pipe straps to any type of masonry. Free tamping tool with each 100 anchors.

No. 7040 Stand. Pack. 100 List Price \$20.00 per C

#### ANCHOR BOLT ASSEMBLIES



This is the standard anchor used by installation companies for fastening wall mounts and pipe straps to masonry. Cannot pull out. Rustproofed. The 1/4" bolt comes with anchor and nut complete. Hole dia. 1/2". Available in 2" and 3" lengths of bolt. Designed to give permanent anchorage. Corrosion-proof. Fee tamping tool with each 100 bolts.

No. 7041—2" Standard Package 100 List Price \$15.00 per C  
No. 7042—3" Standard Package 100 List Price 15.00 per C

#### PIPE HANGER



Made of galvanized steel, this pipe hanger can be used for fastening poles, masts and other objects to walls, roofs, gables, etc.

No. 7038 Stand. Pack. 100 List Price \$0.10 ea.

#### LAG BOLTS



For permanently holding brackets, etc., in place. Made of galvanized steel, this sturdy bolt screws easily into wood, brick, etc. Available in four sizes: 1", 1 1/2", 2", 3". Specify size.

No. 7043 Stand. Pack. 100 List Price \$9.00 per C

#### EYE BOLT ASSEMBLIES



Designed for permanent anchoring of guy wires, cables, brackets, etc., in brick or masonry. Cannot pull out. Made of 1/4" material. Overall length 2 1/2". Dia. of eye 3/8". Hole dia. 3/8". Rustproofed. Use tamping tool No. 7046.

No. 7044 Stand. Pack. 100 List Price \$18.00 per C

#### PIPE BOLT ANCHORS



Used to mount pipe poles or antenna masts directly onto brick or masonry. Cannot pull out. Made of 1/4" stock for 1/2", 3/4" and 1" pipe. A very useful and superior bolt. Rustproofed. Use tamping tool No. 7046.

No. 7045 Stand. Pack. 100 List Price \$28.00 per C

#### TAMPING TOOLS



Special Tamping Tool for anchoring eye bolts and pipe bolts. No. 7046.....List Price \$4.75 ea.



Tamping Tool for 1/4" anchor bolts. No. 7047.....List Price \$2.00 ea.

#### 3 IN 1 TOGGLE BOLTS



Strongest toggle bolt obtainable. Used for bolting or mounting to wood, hollow concrete, tile partitions or plaster walls. Can be used with nut end or screw end in wall. Bolt dia. 3/4". Bolt length 3". Rustproofed.

No. 7048 Stand. Pack. 100 List Price \$22.00 per C

#### STAR DRILLS



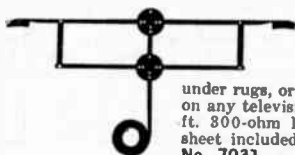
Made of hand-tempered and hand-forged high-grade tool steel for hand drilling in brick, stone and concrete. Standard package 12. No. 7049—3/8" x 8" long.....List Price \$0.85 ea.  
No. 7050—1/2" x 8" long.....List Price .90 ea.



# Birnbach

## TV-FM ANTENNA ACCESSORIES

### NEW ALL CHANNEL INDOOR TELEVISION ANTENNA



Can be Used on All Television Sets  
Flexible Folded Dipole Antenna for Television—covers all Television Channels (1-13) and FM. No problem to install indoors. Can be placed anywhere; in attic, under rugs, or any out-of-the-way location. Works on any television set. Freq. range 44-216 mc. 10 ft. 300-ohm lead transmission line. Instruction sheet included. Individually boxed.

No. 7031.....List Price \$2.95 ea.

### FLEXIBLE FOLDED DIPOLE ANTENNAS For Television (TV)



The flexible folded dipole antenna for Television is perfect for indoor use. This antenna can be placed in attics or in apartment houses; it can be placed under rugs, behind large couches, behind drapes covering windows, etc. This aerial can be oriented for best reception over all television stations. The new Birnbach indoor Television Antenna should prove a real seller for you. Transition loss measures 2.85 DB in television band.

No. 7027—Flexible Folded Dipole Antenna for Television (TV).....List Price (Individually Boxed).....\$1.95 ea.  
No. 7027HF—List Price (Individually Boxed)..... 1.50 ea.

### For Frequency Modulation (FM)

The flexible folded dipole antenna for FM is excellent for all FM receivers. With the new FM Converters and Tuners now on the market you can enjoy a very lucrative sale on this low-priced antenna. Losses in line measure .85 DB per 100 feet at 100MC.

No. 7026—Flexible Folded Dipole Antenna for Frequency Modulation (FM).....List Price (Individually Boxed).....\$1.65 ea.

For above antennas with 50 ft. lengths of 300 ohm Transmission Line add \$2.00 to the list price.

An attractive display card furnished to aid you in the sale of our two new products.

### GUY WIRE CABLE CLAMPS (VIBRATION-PROOF)



New Vibration-Proof Lock Clamps for positive grip on guy wire. Weather-proofed throughout. Standard package 100.

No. 782.....List Price \$0.20 ea.

### KNIFE SWITCHES



Made of special nickel-plated spring brass on a porcelain base. Screw terminals located conveniently for easy connections in circuit. Has two holes for mounting.

No.	Description	Standard Package	List Price
6100	S.P. S.T.	10	\$0.45 ea.
6102	S.P. D.T.	10	.55 ea.
6103	D.P. S.T.	10	.77 ea.
6104	D.P. D.T.	10	1.00 ea.

No. 6104 is widely used for switching from one television antenna to another.

### U BOLT



Useful for mounting poles to steel plates, wooden sections, etc. Nuts and washers supplied. 2 1/4" overall; 1 1/4" thread length; 1 1/2" distance between legs. 1/4"-20 size thread.

No. 7035....Standard Package 50....List Price \$0.30 ea.

### TELEVISION LOOM



This 3/8" Non Metallic Loom is used for the protection of twin lead and Coax Cable on television installations. Use short sections of this

loom over that part of the twin lead or Coax cable which comes in contact with any sharp edges such as corners of buildings, fire escapes, etc. Use friction tape to keep loom in place by binding the end of the loom to the cable.

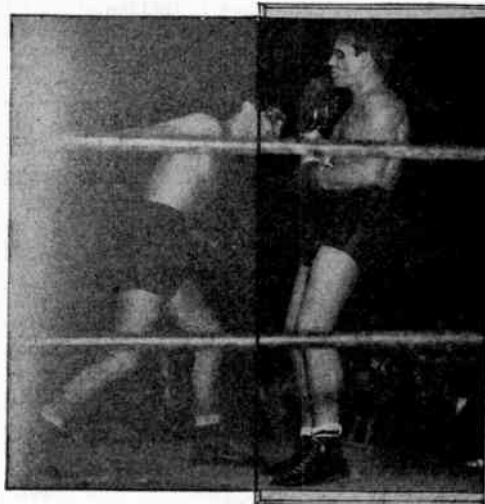
No.	Description	List Price
No. 1013	25 ft.	\$2.75 ea.
No. 1014	50 ft.	5.25 ea.
No. 1015	100 ft.	10.00 ea.

### PERFORATED HANGER STRAPPING



Can be used and adapted for mounting Antenna Masts to various odd shaped objects; chimneys, towers, etc. Made of 3/8" x .023 galvanized steel strap. Tough but flexible.

No.	Description	Standard Package	List Price
7032	12 ft. coll.	25	\$0.75 ea.
7033	100 ft. coll.	8	5.50 ea.



### TELE-RAY FILTERS FOR BETTER TELEVISION IMAGE VIEWING

#### Outstanding Features:

- Scientifically compounded, optically perfected filtering for all models.
- Engineered to give a stereoscopic, life-like effect to the Television screen.
- Instantly and easily attached by special adhesive.
- Picture Contrast increased by elimination of unwanted light — softens grays — sharpens blacks.
- Image becomes sharp and clear with increased detail in room illumination.
- Glare from screen eliminated with resulting restfulness to eyes.
- Unbreakable.
- Bevelled edges (Super Quality).
- Both gauges have the correct rigidity for your viewing pleasure and are guaranteed not to bend or buckle under the most extreme operating conditions.
- Not to be confused with any cheap imitations of these quality-engineered products.
- Works on all Television sets.
- Individually packed with simple instructions.

Deluxe TELE-RAY FILTER—40 gauge		Super Quality TELE-RAY FILTER—80 gauge (Bevelled Edges)	
No.	List Price	No.	List Price
7051—7" tube size	Each \$1.50	7056—7" tube size	Each \$3.25
7052—10" tube size	Each 2.00	7057—10" tube size	Each 4.25
7053—12" tube size	Each 3.25	7058—12" tube size	Each 7.00
7054—15" tube size	Each 5.50	7059—15" tube size	Each 8.50
7055—20" tube size	Each 8.00	7060—20" tube size	Each 14.50

### DRIVE RING



Can be used for securing guy wire. Made of steel galvanized. When hammered in at an angle will remain secure under any condition.

No.	Standard Package	List Price
7036	100	\$0.10 ea.

### BRIDLE RING



Ruggedly constructed. Will stand up under maximum strain. Made of galvanized steel.

No.	Standard Package	List Price
7037	100	\$0.10 ea.

### GUY SCREW ANCHOR



Designed to be added to existing masts where guy wires are necessary. By drilling a 1/4" hole through mast, secure any size guy wire. Rustproof. Complete with nut and washer.

No. 1071.....Standard Package 50.....List Price \$0.10 ea.

### INSULATED WIRING NAILS



Perfect for twin lead indoors. The minimum of metal, in the head and wide fibreboard giving firm support to plastic band creates an extremely low capacity effect which does not interfere with TV reception. Fully insulated. Standard package 100 to a box (1000 to a carton).

No. T42—White or Brown.....List Price \$7.50 per M



# Birnback

## TV-FM ANTENNA ACCESSORIES

### LEADIN STRIPS



Covered with a heavy cotton braid, weather-proofed.

No.	Lgth.	Std. Pkg.	List Price Each
611—Black 12"	.....	50	.....\$0.11
613—White 12"	.....	50	..... .12

### Screw Terminal Leadin Strip



Locks the wire together with the strip in a secure connection assuring perfect contact. Has weather-proof covering over a copper strip with cadmium plated terminals. Available in white or black.

No.	List Price Std. Pkg. Each
617—Leadin Strip	.....50..\$0.17
2617—Doublet Leadin Strip	25.. .35

### COPPER STRAP CLAMP



Will take 3/4" to 2" Pipe.  
No. 600—Std. pkg. 50. Ea. \$0.10 List

### ADJUSTABLE FLEXIBLE PIPE CLAMP

This outstanding adjustable pipe clamp fits all masts and poles from 3/4" to largest size pipe. This clamp, when placed under the Birnback free floating guy ring provides an excellent anchor for attaching guy wires.



No. 627—Std. pkg. 50. Ea. \$0.25 List

### SADDLE GROUND CLAMPS

These ground clamps have a hard pointed screw which digs through rust and makes a positive contact. Fits a 3/4" to 2" pipe.



No.	List Price Std. Pkg. Each
625—Heavy Saddle Clamp	50..\$0.20

### FLOATING GUY WIRE RING

This free floating ring fits 1", 1 1/4", 1 1/2" O.D. Masts and telescopes easily over smaller upper mast, and rests on shoulder of mast section.



No.	List Price Std. Pkg. Each
7034—Std. Pkg. 100	.....List \$0.25

### MAST Standoff ASSEMBLY

For fast mounting of twin lead. Lead slips easily into sturdy insulated insert. This assembly will fit around all size masts from 3/4" to 2" pipes. Standard package 50.



No. 628.....Ea. \$0.40 List Price

### GLASS INSULATORS



Made of crystal clear glass and have a smooth surface which prevents dirt or ice to collect.

No.	Std. Pkg.	List Price
00—3"	.....100	..C \$8.00

### PORCELAIN INSULATORS AND NAIL-IT KNOBS



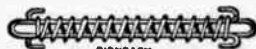
No.	Porcelain Insulators	Std. Pkg.	List Price
666	Brown or White	100	..C \$8.75
668	Glazed Nail-It Knobs	100	..C 7.50

### GROUND RODS



No.	Std. Pkg.	List Price
616—4 Ft.	.....12	..ea. \$1.50
818—6 Ft.	.....12	..ea. 2.25

### AIRPLANE SPRINGS



This rustproof steel spring cadmium-plated throughout provides a compact compression spring for taking up slack in the guy due to any great pull or strain on antenna during a heavy storm.

No. 764. Std. Pkg. 100. Ea. \$0.33 List

### AERIAL SPRING ADJUSTER



Prevents swinging and swaying of antennas. Consists of two hooks with porcelain rings interconnecting with a powerful compression spring. Cadmium-plated.

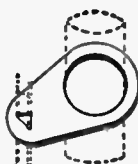
No. 765.....Ea. \$0.90 List Price

### PORCELAIN TUBES



No.	% Dia. Hole.	Std. Pkg.	List Price
42—2"	.....	100	.....C \$5.00
43—3"	.....	100	.....C 6.00
44—4"	.....	100	.....C 7.50
46—6"	.....	100	.....C 10.50
48—8"	.....	100	.....C 15.00

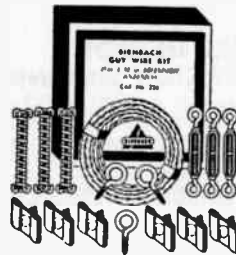
### RUBBER STANDOFF INSULATOR



Can be used with either RG59U type cable or ribbon type line. It is heavy, rugged, and weather-proof. Will fit all antenna masts up to 1 1/4". Tough, resilient rubber. It will keep all cables away from poles.

**SPECIFY SIZE DESIRED.**

Standard Package 100.  
No. 968.....Ea. \$0.10 List Price



### TV-FM GUY WIRE KIT

A compact and complete kit. Do not allow your new television installation to be destroyed by the first windstorm. A necessary addition for successful television service. Assures a trouble-free and efficient installation with a minimum of effort and cost. Simple and complete directions with each individually boxed kit. Contains 50 ft. 6 strands heavy No. 20 guy wire, 3 No. 665 screw eyes, 3 Birnback No. 768 turnbuckles, 3 Birnback No. 764 Springs, 6 Birnback Vibration-proof No. 762 Clamps. Boxed.

No. 226 Standard Package 24 List Price, Each \$3.40  
A "Natural" for your customer's Television pleasure

### GUY WIRE

Finest quality guy wire obtainable. Constructed of high tensile strength galvanized steel stranded twisted wire. Ideal for guying up television transmitter, receiver masts and poles. Made of 6 strands No. 20. Fully weather-proofed. A real necessity for television installers.



No.	450 lbs. Tensile Strength.	List Price
19—25 ft. coil	.....	Each \$0.44
20—50 ft. coil	.....	Each .88
221—100 ft. coil	.....	Each 1.76
220—500 ft. spool	.....	Each 8.38
1220—1000 ft. spool	.....	Each 16.75

### GUY WIRE

This low priced guy wire can be used on short runs and where maximum tensile strength is not required. It has 4 strands of No. 20 high tensile twisted steel galvanized wire. Fully weather-proofed.

225 lbs. Tensile Strength.

No.	List Price
20A—50 ft.	.....Each \$0.65
221A—100 ft.	.....Each 1.25
220A—500 ft.	.....Each 6.25
1220A—1000 ft.	.....Each 12.00

### DOUBLET LIGHTNING ARRESTERS



This Arrester is of the air gap type which is the accepted means of protecting doublet antennas from lightning. Installation instructions are printed on the box.

No. 2650—Doublet Lightning Arrester Std. Pkg. 25.....List \$0.50

RADIO LIGHTNING ARRESTER  
No. 2650—Std. Pkg. 50. Ea. \$0.56 List

### INSULATED STANDOFFS TWIN LEAD TYPE



This insulated twin lead standoff is quality engineered and is constructed of low loss insulating material.

These sturdy insulators are slotted to take the 300-ohm ribbon type line and are solidly held by the eye of the cadmium-plated steel screws. The No. 1965—5" machine screw twin lead standoff is designed for mounting directly on a metal mast—uses a 10/32 thread.

No.	Standard Package	List Price
1963—3"	.....100	.....Each \$0.10
1965—3" M.B.	.....100	.....Each .15
1964—7"	.....100	.....Each .15
1967—12"	.....25	.....Each .25

### SCREW EYES — BAKELITE EYES



No.	Standard Package	List Price
963—3"	.....100	Per C \$11.25
964—7"	.....50	Per C 13.75
967—12"	.....25	Per C 37.50



### TURNBUCKLES

Constructed of rustproofed galvanized steel. Used to take up any slack in guy wire. Convenient, durable, dependable.

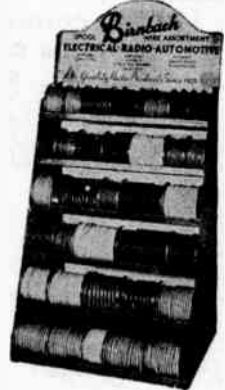
No. 763.....Standard Package 100.....Each \$0.27 List Price

# Birnbach HOOK-UP WIRE



## SPECIAL SPOOL ASSORTMENT \$1.10 LIST PRICE

No.	Ft.	Size	Type	No.	Ft.	Size	Type
3000	65	22	Solid Pushback	3013	60	18	Solid Leadin
3001	55	20	Solid Pushback	3014	65	18	Stranded Leadin
3002	45	18	Solid Pushback	3015	35	18	Stranded Lacquered
3003	35	16	Solid Pushback	3016	75	18	Brown & White AC-DC Wire
3004	30	14	Solid Pushback	3017	30	18	Kinkless Wire
3005	55	22	Stranded Pushback	3018	20	18	Twisted Lamp Cord
3006	45	20	Stranded Pushback	3019	45	18	Single Fix. Wire
3007	40	18	Stranded Pushback	3020	25	18	Parallel Silk
3008	30	16	Stranded Pushback	3021	15	18	Blk., Wht., Brn. Zip Cord
3009	20	14	Stranded Pushback	3022	100	18	Solid Tinned
3010	50	18	Colored Rubber	3023	75	18	Bell Wire
3011	35	16	Colored Rubber	3024	15	18	Shielded Wire
3012	30	14	Stranded Leadin				



### FREE DISPLAY

One Display is given with each initial order for 100 spools. Each Display made of strong, re-inforced steel, mahogany crackle finish with attractive 3 color Display at top. Space provided to indicate YOUR resale price.

EXTRA DISPLAY RACKS AVAILABLE AT \$3.25 EACH, NET

Height — 24" Width — 12 1/2"

## Thermoplastic Synthetic Insulated Radio and Electronic Hook-up Wire (Fungus Proof)

### ★ SPECIFICATION JAN - C - 76 ★

#### Type SRIR—1000 Volt



**COLORS:**  
Black Red  
Gray Yellow  
Brown Purple  
White Green  
Blue Orange  
Dk. Blue Pink  
Tan

Note: For 25,000 feet of on color, deduct 10% of List Prices above.

Approx. AWG Cat. No.	Navy Standard Conductor Designation	Conductor Construction	Nom. Wall	Max. O.D.	List Price Per M Ft.
7024-24 Stranded	(18)	16 wires .005"	.012"	.052"	\$16.50
7000-22 Solid	3/5 (1)	.0253 solid	.015"	.062"	12.50
7001-22 Stranded	3/5 (7)	7 wires .010	.015"	.066"	16.00
7002-20 Solid	1 (1)	.032 solid	.015"	.068"	15.00
7003-20 Stranded	1 (10)	10 wires .010	.015"	.074"	19.50
7004-18 Solid	1 1/2 (1)	.0403 solid	.015"	.076"	19.00
7005-18 Stranded	1 1/2 (16)	16 wires .010	.015"	.083"	22.50
7007-16 Stranded	2 1/2 (26)	26 wires .010	.015"	.096"	37.50
7009-14 Stranded	4 (41)	41 wires .010	.018"	.120"	55.00
7011-12 Stranded	6 (65)	65 wires .010	.018"	.140"	60.00

#### SPECIFICATIONS FOR THE JAN-C-76

- I—Electrical Properties:
  - A—Dielectric strength
  - B—Insulation resistance
  - C—Creepage resistance
- II—Mechanical Properties:
  - A—Low temperature flexibility
  - B—High temperature stability
  - C—Resistance to heat deformation
  - D—Abrasion resistance
  - E—Low moisture absorption
- III—Chemical and Other Properties:
  - A—Resistance to common solvents
  - B—Flame resistance
  - C—Fungus resistance

The above items meet all requirements of Army-Navy joint specification JAN-C-76. Type SRIR for plain resin construction where highest resistance to fungus growth is required.

### SHIELDED LEAD-IN WIRE



Used to prevent the pickup of interference or man-made static. Consists of a stranded tinned copper conductor with a wall of live rubber over which a tinned copper braid is woven.

No. 20—1/64"

Cap. mmfd. List per Ft. O.D. P-111

810—500 Spool .105... .090... \$25.00

No. 18—1/64"

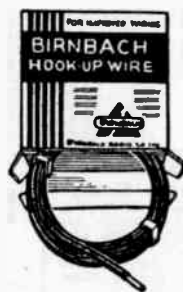
807—25 Coll .125... .100... \$ 1.30  
808—100 Spool .125... .100... 5.00  
803—250 Spool .125... .100... 12.50

No. 16—1/32"

825—25 Coll .90... .145... \$ 1.75  
851—100 Spool .90... .145... 6.50  
802—250 Spool .90... .145... 15.00

No. 14—3/64"

804—25 Coll .95... .185... \$ 2.25  
806—100 Spool .95... .185... 8.50  
801—250 Spool .95... .185... 22.50



### RADEX SLIPBACK HOOKUP WIRES

It has a covering of rubber over a cotton wrap and is then covered with a bright color cotton braid and dipped into paraffin. This construction will not cause the cotton insulation to fray or bunch up when pushed back. It has a high dielectric strength and will withstand all climatic changes without breakdown.

25 FT. COILS		100 FT. SPOOLS		500 FT. SPOOLS	
Size	List Price	Stranded List Price	Solid List Price	Stranded List Price	Solid List Price
20	280	281	360	480	481
18	282	283	382	482	483
16	284	285	384	484	485
14	286	287	386	486	487
12	288	289	388	488	489

1000 FT. SPOOLS		SOLID WIRE PUNCTURE VOLTAGE	
Size	List Price	60 Cycle A.C.	18
20	560	2100	2100
18	582	2100	2100
16	584	2100	2100
14	586	2100	2100
12	588	2100	2100

STRANDED WIRE PUNCTURE VOLTAGE		SOLID WIRE PUNCTURE VOLTAGE	
Size	List Price	60 Cycle A.C.	18
20	581	2100	2100
18	582	2100	2100
16	583	2100	2100
14	584	2100	2100
12	585	2100	2100

COLORS—Black, Red, Blue, Yellow, Green, White, Brown

### BIRNTEX SLIPBACK WIRE

This wire is constructed of quality materials and carefully insulated with a cotton wrap over which a cotton braid is closely woven, and then saturated with paraffin.

SOLIO COLORS—Red, Black, Green, Blue, Yellow, White.  
TRACER COLORS—Red, Black, Green, Blue, Yellow, Brown.

25 FT. COILS		100 FT. COILS	
Size	List Price	Stranded List Price	Solid List Price
22	70	71	72
20	80	81	82
18	82	83	84

500 FT. SPOOLS		1000 FT. SPOOLS	
Size	List Price	Stranded List Price	Solid List Price
22	74	75	76
20	88	89	90
18	90	91	92

Puncture Voltage 80 Cycle A.C. 1500



# Birnbach

## CABLE and TRANSMISSION LINE — COAXIAL CABLE —

### PA and COMMUNICATING SYSTEM CABLES



#### Shielded Twisted Pair

Constructed of solid enameled wire with a cotton wrap color coded cotton braid twisted pair waxed, and bare copper braid woven overall.

No.	Size	O.D.	List Price
821—100 Ft.	22	.125	\$ 6.75
822—500 Ft.	22	.125	32.00
823—100 Ft.	19	.145	8.00
824—500 Ft.	19	.145	37.50



#### Armored Speaker Cable

Constructed of 2 No. 18 stranded parallel conductors with rubber color coded cotton braid waxed, paper wrap and closely armored.

No.	Size	O.D.	List Price
1110—100 Ft.	18	.155 x .260"	\$10.00
1111—250 Ft.	18	.155 x .260"	20.00
1112—500 Ft.	18	.155 x .260"	40.00
1113—1000 Ft.	18	.155 x .260"	80.00

### Rubber Shielded Microphone Cable



Consists of individual flexible tinned copper conductors, each insulated with a heavy wall of colored rubber for easy identification. A tinned copper shield is woven over all conductors, and then cotton wrapped. A 1/32 wall of tough rubber is placed overall. It is a weatherproof cable, ideal for outdoor use, and will withstand hard and rough usage.

No.	No. Conds.	Ft.	Size	Cap. bet. Shield & bet. Conds. mmfds.	Cap. bet. Conds. mmfds.	O.D.	List Price
772	2	100	20	55	31	.270	\$15.00
1772	2	250	20	55	31	.270	35.00
773	2	100	20	58	33	.305	19.50
1773	3	250	20	58	33	.305	48.75
774	4	100	20	48	28	.345	22.50
1774	4	250	20	48	28	.345	59.75
775	5	100	20	51	29	.395	27.50
1775	5	250	20	51	29	.395	68.75
776	6	100	20	45	27	.405	32.00
1776	6	250	20	45	27	.405	80.00
777	7	100	20	49	27	.420	35.00
1777	7	250	20	49	27	.420	87.50



### RUBBER S. J. CABLE

Consists of individual flexible tinned copper conductors, each insulated with a heavy wall of colored rubber for easy identification. A 1/32 wall of tough polished rubber is placed overall. It is a weatherproof cable, ideal for outdoor use, and will withstand hard and rough usage.

Cat. No.	No. Conds.	Ft. on Spool	O.D.	List Price
788	2	100	.250	\$12.00
789	2	250	.250	28.25
790	3	100	.300	15.25
791	3	250	.300	35.00
792	4	100	.325	19.50
793	4	250	.325	45.00
794	5	100	.370	24.00
796	6	100	.400	30.00
797	6	250	.400	70.00
798	7	100	.400	35.00
749	8	100	.460	40.00

### FM and TELEVISION TWIN LEAD 300 OHM TRANSMISSION WIRE



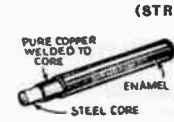
Has full thickness insulation throughout Polyethylene insulation resists oil, acids and abrasions. Minimizes the effects of attenuation. Reduces distortion.

#### R.M.A. STANDARD

Conductors, Bare Copper.....7/No. 28 AWG  
Insulating Material.....Polyethylene  
Weight per 1000 ft.....14.1 lbs.  
Impedance.....300 Ohms  
Attenuation in Decibels per 100 ft.:  
50 MC.....0.68  
100 MC.....0.85

No. 7028—50 ft. coils.....List Price \$2.25 ea.  
No. 7029—100 ft. coils.....List Price 4.50 ea.  
No. 7030—1000 ft. spools.....List Price 40.00 ea.  
50-ft. and 100-ft. coils individually boxed

### COPPERWELD ANTENNA WIRE (STRETCHLESS)



Has steel core covered with copper heavily enameled. High tensile strength—several times that of enameled copper wire. Low R.F. resistance, ideal for transmitting doublet and directional antenna systems. Will maintain frequency characteristics of antenna.

Feet	No. 10	No. 12	No. 14
100	\$ 4.50	\$ 3.15	\$ 1.90
250	11.25	7.75	5.25
500	22.50	15.50	10.25
1000	43.75	30.50	20.00
2500	108.00	76.00	49.50

No. 10	TENSILE STRENGTH	No. 12	No. 14
No. 10	1130 lbs.	No. 12	720 lbs.
No. 12	400 lbs.	No. 14	400 lbs.

SPECIAL LENGTHS AVAILABLE ON ORDER



### Crystal Microphone Cable

For use with crystal and ribbon microphones. They are designed for low capacity and low losses. Constructed of tinned stranded conductor with a wall of low capacity rubber and closely woven shield and tough rubber wall overall.

No.	Ft.	Size	Cap. bet. Shield & bet. Conds. mmfds.	O.D.	List Price
872	100 Crystal	20	37	.270	\$12.00
1872	250 Crystal	20	37	.270	28.50
870	100 Lapel	20	60	.175	9.00
1870	250 Lapel	20	60	.175	22.50
871	100 Lapel	20	50	.155	9.00
1871	250 Lapel	20	50	.155	22.50



### Shielded Battery Cable

Constructed of flexible stranded conductors covered with quality rubber compound and coded. A tinned copper shield is woven overall. Used to prevent interference from being picked up.

No.	No. Conds.	Ft.	Size	Cap. bet. Shield & bet. Conds. mmfds.	Cap. bet. Conds. mmfds.	O.D.	List Price
972	2	100	20	76	61	.205	\$9.50
973	3	100	20	90	50	.240	11.00
974	4	100	20	62	35	.285	14.00
975	5	100	20	64	43	.290	17.00
976	6	100	20	95	48	.300	20.00
977	7	100	20	87	41	.340	25.00
978	8	100	20	103	61	.345	29.00
979	9	100	20	100	57	.360	32.50
980	10	100	20	107	80	.375	37.00

### HEAVY DUTY S. J. CABLE

Cat. No.	No. Conds.	Ft.	Gauge	O.D.	List Price each
574	2	500	No. 18	.300	\$45.00
578	2	500	No. 16	.325	54.00

### 73 OHM COAXIAL CABLE RG-59/U

Constructed of No. 22 solid plain copperweld with .146 O.D. Dielectric insulation, then with copper inner shield and Black Vinyl jacket. Overall O.D. is .242. Nominal impedance 73 ohms. Nominal capacitance 21 mmf. per ft. Permits peak receiver performance without distortion. Meets all requirements for Television and FM range.

Attenuation (Mc)	10	80	100	300	400
DB per 100 ft.	1.0	2.0	3.8	7.0	7.9

No.	List Price
907—100 ft. Spool	\$15.00
908—250 ft. Spool	36.00
909—500 ft. Spool	70.00
910—1000 ft. Reel	137.50

### SHIELDED TRANSMISSION CABLE



Twisted, shielded 2-cond. 72-ohm transmission cable. Weather-proof, reduces interference. A matching stub is recommended with this cable in place of 300-ohm line. 2-cond. No. 22 strands shielded.

No.	List Price
No. 1978—100 ft.	List Price \$10.50 ea.
No. 1978—100 ft.	List Price \$10.50 ea.
No. 1980—1000 ft.	List Price \$7.50 ea.

### Commercial Type Twisted Pair (No. 18 STRANDED)



This cable is used extensively as original equipment of master antenna systems. It is constructed of 2 No. 18 tinned stranded conductors insulated with a special grade of rubber color coded and covered with a white weatherproof cotton braid.

No.	Ft.	List Price	Surge Imp. per 100'	D.B. (Ohms)
916—50 Spool		\$3.25		
917—100 Spool		6.00	10 Mcs.... 82	2.1
918—250 Spool		12.00	20 Mcs.... 82.5	3.9
919—500 Spool		23.75	40 Mcs.... 82.3	6.8
920—1000 Spool		47.50		



### BATTERY CABLE

Constructed of individual rubber insulated stranded conductors, cotton braided and color coded. A closely woven cotton braid overall.

No.	No. Conds.	Ft.	Size	O.D.	List Price
172	2	100	20	.200	\$6.00
173	3	100	20	.205	8.00
174	4	100	20	.260	10.00
175	5	100	20	.300	12.00
176	6	100	20	.320	14.50
177	7	100	20	.340	17.50
178	8	100	20	.370	20.50
179	9	100	20	.400	23.00
180	10	100	20	.410	25.00
182	12	100	20	.430	30.00

All Cables Available in Special Lengths



### Shielded Battery Cable (Cotton Braid Overall)

Constructed of individual tinned stranded copper with a wall of rubber and covered with a colored cotton braid.

No.	No. Conds.	Ft.	Size	Cap. bet. Shield & bet. Conds. mmfds.	Cap. bet. Conds. mmfds.	O.D.	List Price
1972	2	100	20	120	65	.215	\$10.50
1973	3	100	20	86	49	.240	15.00
1974	4	100	20	108	46	.295	18.00
1975	5	100	20	73	38	.312	21.00
1976	6	100	20	70	36	.330	25.00
1977	7	100	20	68	35	.350	28.00



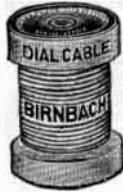
### Diathermy Cable

Specially designed for use with electrotherapy apparatus. It is extremely flexible with a special grade of tough live flexible jacket to withstand the exacting service required.

No.	Ft.	Breakdown Voltage	List Price
756	100 Spool	60 Cycles A.C. O.D.	.300 \$14.00
757	1000 Reel	20,000	.300 126.00

# Birnbach

## BIRACO TUBING DIAL and MAGNET WIRE



### DIAL CABLE 42 Strond Phosphor Coble

Constructed of the finest phosphor bronze wire over a linen thread center. Due to its high tensile strength, it will not stretch.

- No. 1025—25' Spool List Price \$1.20 each  
 No. 1050—50' Spool List Price 2.25 each  
 No. 1051—100' Spool List Price 4.00 each  
 No. 1052—1000' Spool List Price 33.00 each

### Phosphor Bronze (Light Cable) A lower quality cable than No. 1025, but cable that will give good service. This is a braided Phosphor Bronze cable.

- No. 1053—25' Spool List Price \$0.88 each  
 No. 1054—50' Spool List Price 1.25 each  
 No. 1055—100' Spool List Price 2.50 each  
 No. 1056—1000' Spool List Price 18.50 each

### Extra Heavy Linen Dial Cable Made of the finest linen for replacement on all receivers, same as used for Philco. It is extra heavy for exceptional long service.

- No. 1057—25' Spool List Price \$1.30 each  
 No. 1058—50' Spool List Price 2.50 each  
 No. 1059—100' Spool List Price 4.50 each  
 No. 1060—1000' Spool List Price 36.00 each

### Heavy Linen Coble This braided cable is used for replacement for all Philco Receivers.

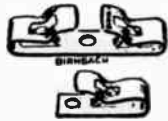
- No. 2025—25' Spool List Price \$1.30 each  
 No. 2050—50' Spool List Price 2.50 each  
 No. 2051—100' Spool List Price 4.50 each  
 No. 2052—1000' Spool List Price 36.00 each

### Light Linen Dial Cable (Silk Core) High quality linen cable used on many receivers specially treated to prevent slipping.

- No. 3025—25' Spool List Price \$1.20 each  
 No. 3050—50' Spool List Price 2.25 each  
 No. 3051—100' Spool List Price 4.00 each  
 No. 3052—1000' Spool List Price 25.00 each

### Extra Light Linen Cable It is a strong extra thin linen cable for replacement. Braided of the finest black linen.

- No. 4025—25' Spool List Price \$0.75 each  
 No. 4050—50' Spool List Price 1.40 each  
 No. 4051—100' Spool List Price 2.50 each  
 No. 4052—1000' Spool List Price 18.50 each



### SPRING WIRE CLIPS

They will hold a wire, up to No. 10 B&S Gauge, in a secure contact. All clips are brass nickel-plated.

- List Price—Length Std. Pkg. Per C  
 32—Spring Clip 1".....100.....\$2.00  
 33—Twin Clip .1%".....100..... 8.50

### ALL RUBBER LAMP CORD This cord is an all rubber covered insulated parallel cord which can be separated by starting with a knife. Connects easily and cannot fry. Sanitary and neat.

- COLORS: Black, White, Brown  
 570—100 Spool.....18.....\$ 4.25  
 572—250 Spool.....18.....10.00  
 573—500 Spool.....18.....20.00

### BUS BAR WIRE Used to hook up all types of transmitters, especially ultra short wave equipment. Made of hard drawn copper, tinned, straightened, and cut 2 ft. lengths.

- List Price—per 100 lengths  
 2010—No. 10 Round Tinned...\$8.50  
 2012—No. 12 Square Tinned... 6.75  
 2013—No. 12 Round Tinned... 6.00  
 2014—No. 14 Square Tinned... 6.10  
 2015—No. 14 Round Tinned... 4.30

### MAGNET WIRE Special Spools—\$0.56 List Price

On attractive spools, even sizes from 14 to 40 inclusive, in Double Cotton, Plain Enamel, and Double Silk. Here is a really sensational seller for the dealer who will put this display on the counter. It is a Silent Salesman which will bring you real profit the year around! FREE DISPLAY! One Display is given with each initial order for 100 spools. Each Display made of strong, re-inforced steel, mahogany crackle finish with attractive 3 color Display at top. Space provided to indicate YOUR resale price.

Extra Display Racks available at \$3.50 each, Net.

LENGTH OF WIRE OF SPECIAL SPOOLS

Size B&S	Plain Enamel	Double Cotton	Double Silk	Size B&S	Plain Enamel	Double Cotton	Double Silk	Size B&S	Plain Enamel	Double Cotton	Double Silk
12....	15 ft.....	9 ft.....	— ft.	22....	112 ft.....	75 ft.....	37 ft.	32....	870 ft.....	180 ft.....	124 ft.
14....	26 ft.....	20 ft.....	11 ft.	24....	134 ft.....	97 ft.....	50 ft.	34....	905 ft.....	195 ft.....	131 ft.
16....	34 ft.....	34 ft.....	19 ft.	26....	244 ft.....	116 ft.....	71 ft.	36....	1275 ft.....	206 ft.....	142 ft.
18....	56 ft.....	43 ft.....	23 ft.	28....	401 ft.....	131 ft.....	90 ft.	38....	1725 ft.....	210 ft.....	116 ft.
20....	86 ft.....	56 ft.....	29 ft.	30....	525 ft.....	158 ft.....	112 ft.	40....	1975 ft.....	215 ft.....	125 ft.

### 1/4 LB., 1/2 LB., 1 LB., MAGNET WIRE—Approximate Feet and List Prices

Double Cotton (White)				Plain Enamel				Double Silk (Green)					
1/4 lb. Spool	1/2 lb. Spool	1 lb. Spool	List	1/4 lb. Spool	1/2 lb. Spool	1 lb. Spool	List	1/4 lb. Spool	1/2 lb. Spool	1 lb. Spool	List		
12	12	\$0.56	24	\$0.88	49	\$1.78	12	12	\$0.80	24	\$1.57	49	\$2.97
14	19	.58	39	1.00	78	1.82	14	19	.84	39	1.61	78	3.01
16	31	.62	62	1.02	123	1.86	16	31	.91	62	1.75	123	3.18
18	48	.63	97	1.13	194	1.92	18	48	1.01	99	1.83	198	3.50
20	78	.69	157	1.26	304	2.16	20	78	1.16	157	2.27	314	4.27
22	119	.77	238	1.43	477	2.45	22	123	1.34	247	2.62	495	4.60
24	134	.90	269	1.69	738	3.05	24	201	.61	403	1.08	806	1.86
26	284	1.08	568	2.02	1136	3.56	26	320	.73	640	1.29	1280	2.32
28	435	1.27	871	2.45	1742	4.16	28	507	.77	1015	1.36	2030	2.45
30	641	1.53	1284	2.88	2596	6.94	30	805	.84	1610	1.54	3220	2.80
32	976	1.89	1953	3.57	3906	4.79	32	1282	.93	2564	1.85	5128	3.05
34	1385	2.66	2735	5.04	5470	9.72	34	2037	1.05	4075	1.90	8150	3.82
36	1827	3.64	3654	6.97	7309	13.09	36	3221	1.22	6442	2.23	12887	4.17
38	2738	7.00	5476	13.09	10952	24.50	38	5132	1.40	10246	2.59	20492	4.86
40	3408	10.50	6811	19.60	13623	36.40	40	8143	2.10	16286	3.88	32573	7.35

### BIRACO TUBING (Extruded)



It is an extruded tubing made of the new synthetic plastic material. Extremely flexible and when stretched returns to its original form. Withstands the effects of heat and will not support combustion. Will only soften at 300°F and will not flow at 425°F. Its dielectric strength—750 volts per mil, when dry and 350 volts when wet. It is not affected by oil and is resistant to most coal tar solvents and petroleum solvents. Resists acids, alkalies in concentrations up to 30% by weight. Available in continuous lengths. Dielectric strength—10,000 volts.

COLORS: Black, Red, Green, White and Yellow

No.	Size	I.D.	List Price per 36" lengths
313.....	20	.034	\$0.17
314.....	18	.042	.17
315.....	16	.053	.17
316.....	14	.066	.17
317.....	12	.085	.17
318.....	8	.135	.50
319.....	4	.208	.50
320.....	2	.283	.70
321.....	5/16	.375	.75
322.....	1/4	.500	1.25
323.....	3/8	.625	1.35



### SERVICE CORDS

Constructed of all rubber Underwriters Approved lamp cord and plug on one end and with the other end stripped and tinned all ready for use.

COLORS: Black or Brown

No.	Ft.	List Price
816-B.....	6	\$0.50
817-B.....	7 1/2	.80
818-B.....	10	.85

### VARNISHED TUBING

Provides quality insulation for wires used on radio sets, small electrical equipment and instruments. The outside is impervious to oil, acid and water. It is highly flexible and will not crack after aging. Average dielectric strength 5000 volts.

COLORS: Black, Red, Green, White and Yellow

No.	Size	I.D.	List Price per 30" lengths
291.....	20	.034	\$0.17
293.....	18	.042	.17
294.....	16	.053	.17
295.....	14	.066	.17
300.....	12	.085	.17
301.....	8	.133	.50
302.....	3/16	.208	.50
303.....	1/4	.283	.75
304.....	5/16	.375	.75
305.....	3/8	.500	1.50
298.....	1/2	.625	1.50

### BIRACO & VARNISHED TUBING IN HANDY PACKAGES

Both BIRACO Extruded TUBING and VARNISHED TUBING are also available on convenient paper spools in a variety of lengths to meet practically every demand. Put up in handy packages to fill the requirements of servicemen and manufacturers. Wide assortment of colors.

BIRACO TUBING					VARNISHED TUBING				
Cat. No.	Gauge Size	Approx. I. D.	Length Package	List Price Package	Cat. No.	Gauge Size	Approx. I. D.	Length Package	List Price Package
314B.....	.18	.042	25 ft.	\$0.75	293V.....	.18	.042	25 ft.	\$ 1.50
315B.....	.16	.038	25 ft.	.75	294V.....	.16	.038	25 ft.	1.50
316B.....	.14	.068	25 ft.	.75	295V.....	.14	.066	25 ft.	1.50
317B.....	.12	.085	25 ft.	.75	300V.....	.12	.085	25 ft.	1.50
325B.....	.10	.106	15 ft.	.75	307V.....	.10	.106	20 ft.	1.50
318B.....	8	.135	15 ft.	.75	309V.....	8	.135	15 ft.	1.50
328B.....	6	.166	15 ft.	.75	302V.....	6	.166	10 ft.	1.50
319B.....	2	.283	10 ft.	.75	305V.....	4	.208	10 ft.	1.50
320B.....	18	.042	100 ft.	2.75	306V.....	2	.283	10 ft.	1.50
314BC.....	.18	.053	100 ft.	2.75	293VC.....	.18	.042	100 ft.	5.25
315BC.....	16	.038	100 ft.	2.75	294VC.....	16	.038	100 ft.	5.25
316BC.....	14	.068	100 ft.	2.75	295VC.....	14	.066	100 ft.	5.25
317BC.....	12	.085	100 ft.	2.75	300VC.....	12	.085	100 ft.	5.25
325BC.....	10	.106	100 ft.	4.40	307VC.....	10	.106	100 ft.	9.00
318BC.....	8	.135	100 ft.	4.40	309VC.....	8	.135	100 ft.	9.00
328BC.....	6	.166	100 ft.	4.40	302VC.....	6	.166	100 ft.	9.00
319BC.....	4	.208	100 ft.	6.75	305VC.....	4	.208	100 ft.	15.00
320BC.....	2	.283	100 ft.	6.75	306VC.....	2	.283	100 ft.	15.00







# Birnbach

## TEST LEADS and ACCESSORIES

### High Voltage Test Leads

The high dielectric strength and low leakage resistance of these test leads recommend them for testing high voltage high sensitivity devices such as Meggers and Megohmmeters. They are particularly well suited for use in testing breakdown voltages up to 1200 volts. The prods and the tip handles are made of black and red bakelite with special designed tips for application. The prods are 6" long and 1/2" dia. and have a guard ring near the metal tip to prevent accidental touching of the exposed metal part. Extra heavy kinkless test lead wire 7/32" dia. is used throughout. The leads are 60" long.

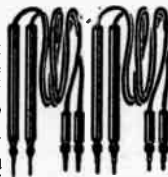
No. 582—High Voltage Test Leads \$5.00



### Deluxe Test Leads

Constructed with 5" long cast phenolic red and black handles with removable needlepoint chucks or solderless tips. Black and red heavy kinkless instrument 48" long is used to connect the prods with the insulated red and black cast phenolic solderless tips. Either needlepoint or solderless tip available.

No. 580—Solderless prod test leads.. \$1.75  
581—Needlepoint prod test leads 1.75



### Bakelite Pencil Type Test Leads

Red and black bakelite handles. 6" long and 5/16" in dia. and red and black bakelite insulated phone tips. Heavy kinkless wire is used together with the Birnbach Scrulok system of solderless wire connection. The universal needle and phone tip prod have the same dimensions as the standard phone tip and are useful for piercing insulation without damage. The needlepoint is extra heavy to prevent breakage and should it become broken can be readily replaced. Available only in combination of needlepoint prods and insulated phone tips. Length overall 60".

No. 408—Bakelite Pencil Type Test Lead \$2.50  
439—Needlepoint Prod Tip for Replacement ..... .25



### Test Leads (Bakelite Handles)

Have 4" red and black insulated handles. Needles can be replaced when broken simply by loosening the knurled collar. Available with either phone tips or spade lugs. Length overall 50".

No. 420—Phone Tip Test Leads \$1.12 1/2  
421—Spade Lug Test Leads ..... 1.12 1/2



### Standard Test Leads

Same as above with a Sr. solderless phone tip.

No. 422—Phone Tip Test Leads... \$1.00  
423—Spade Lug Test Leads... 1.00

### Insulated Solderless Phone Tips

Insulated handles 3/4" dia. 1 1/2" long fitted to solderless phone tips. The wire can be easily attached by threading through the hole in the handle and tightening the knurled nut. Colors:—red, black, green, and yellow.

No. 409—Insulated Sr. Solderless Tip—2 1/2" Long... each \$0.20  
415—Insulated Jr. Solderless Tip—1 1/2" Long... each .18



### Insulated Phone Tip

The insulated handle is 1" long, 1/4" dia. Connection is made by threading wire through the Scrulok threaded bushing (see drawing). Colors: red, black, green and yellow.

412—Scrulok Pin Tip, 1 1/2" Long... each \$0.24  
419—Scrulok Pin Tip, 1 3/8" Long... each .30



### Phone Tip

Ideal for replacement on headset, speaker and extension cords.

No. 402—Std. Pkg. 100 List Price \$2.25 per C



### Solderless Phone Tips

Milled of solid brass and nickel-plated. Designed for easy insertion of the wire.

No. 24—Junior... \$1.50  
24—Senior... 12.50  
Std. Pkg. 100.



### No. 26 Phone Tip Jack

Milled of brass and nickel plated. The bronze springs are specially made to hold the phone tip tight and straight. Mounts in a 1/4" dia. hole.

No. 26—Std. Pkg. 100. List Price \$12.50 per C



### No. 407 Insulated Tip Jack

Has a 1/8" insulated top and mounts in a 1/8" dia. hole. The specially designed bronze springs hold the phone tip tight and straight. Colors:—red, black, yellow, and green. Std. Pkg. 100.

No. 407—Insulated Phone Tip Jack... \$0.18



### No. 411 Bakelite Pencil Test Prods

These prods have the Birnbach Scrulok solderless needlepoint tips. They are made of bakelite and are 6" long and 1/4" dia. The connection is made by threading the wire through the handle and securing to the needlepoint tip by locking the Scrulok. The tip is then screwed into the handle. Available in red or black only.

No. 411—Bakelite Pencil Test Prods \$1.10



### Solderless Tip Prod

Made of highly polished cast phenolic resin. A solderless phone tip is threaded at end permitting replacement of tip. Available in red or black.

No. 343—4" Handle... \$0.50  
343—5" Handle... .50



### Needlepoint Test Prod

A threaded shank needlepoint chuck is threaded into the end of handle. Made of highly polished cast phenolic handle. Available in red or black.

No. 344—Needlepoint Test Prod, 4" Handle... \$0.45  
345—Needlepoint Test Prod, 5" Handle... .50



### SCRULOK Needlepoint Test Prods

These insulated prods have the Scrulok solderless system of wire connection. Wire is easily attached without soldering. An extra heavy needle is fitted into the tip. Colors:—black or red.

No. 417—Needlepoint Test Prod, 4" Handle... \$0.45  
418—Needlepoint Test Prod, 5" Handle... .50



### Headset Phone Cords

These cords are closely woven and are very durable and strong. They are used for replacement of worn headset cords. Standard cords are listed which will match practically all headsets manufactured. We will be glad to quote on cords having special terminal requirements.

No. 104—5 ft. Pin & Spade Tips... \$1.15  
105—5 ft. Pin & Spade Tips... 1.15  
107—5 ft. Pin & Eye Tips... 1.15  
108—8 ft. Pin & Eye Tips... 1.50  
109—10 ft. Pin & Eye Tips... 2.15



### AC-DC Resistance Cords



Designed for replacement of the internal voltage dropping resistor on the present and older type of AC-DC sets. It consists of a line cord into which a third element has been incorporated. The voltage dropping resistor reduces the voltage to that needed for the filament of the tubes.

No.	Rating	Cord	Sets Following Tubes	List Price Each
35	.135 ohm	2525-43-4"	...	\$1.15
36	.180 ohm	2525-43-3"	...	1.15
34	.180 ohm	1223-43-4"	...	1.15
49	.200 ohm	2525-43-3"	...	1.15
37	.220 ohm	1223-43-3"	...	1.15
41	.250 ohm	1223-43-2"	...	1.15
38	.290 ohm	2525	...	1.15
45	.300 ohm	1223	...	1.15
39	.330 ohm	1223	...	1.15
40	.350 ohm	1223	...	1.15
47	.390 ohm	1223	...	1.15
125	.220-110 Volt Voltage reducing cord	...	...	2.25
126	.280 ohm	4 Wire	...	2.00
127	.190 ohm	4 Wire	...	2.00
128	.165 ohm	4 Wire	...	2.00

\* 6.3 volt tubes. † For Emerson Radio.

### Speaker Extension Cords



Constructed of stranded annealed copper wire insulated with rubber over which a brown mercerized cotton braid is closely woven. Complete with easily attached bakelite connector.

No.	Length	List Price
186	10 ft. Cord	each \$1.50
121	50 ft. Cord	each 2.90
122	30 ft. Cord	each 2.75
122	40 ft. Cord	each 3.10
123	50 ft. Cord	each 3.50
124	100 ft. Cord	each 6.50
151	Bakelite Extension Cord, Connector only	each .60

### Alligator Clips

Made of steel nickel plated. The jaws match accurately permitting them to grip all kinds of wire securely. The insulated handle is 3/4" dia. and 3/4" long and comes in red or black.

No.	Length Pkg.	Std. List Price
31	—Alligator clip 2"	\$.50... \$0.09
310	—Insulated Alligator clip 2 1/4"	.50... .23



### Test Clips

The teeth mesh correctly permitting good contact to be made. The No. 27-8 is a solid copper clip with a brass screw designed for high frequency work. Sturdily constructed. Standard Package 50.

No.	Length	Std. List Price
27	—Pee Wee 1 1/4" x 3/8"	\$0.09
28	—Midget 2" x 3/8"	.09
29	—Medium 2 1/2" x 1"	.11
30	—Large 4" x 1 1/4"	.20
27C	—Pee Wee Copper 1 1/4" x 3/8"	.17
27R	—Rubber Sleeve red or black	..... .16

### Kinkless Test Lead Wire

Abrasion resisting live rubber that will not kink or break down in service. No. 20 has 41 strands and No. 13 has 66 strands of No. 36 tinned annealed copper wire.



No.	Ft.	Price	Size	Rubber Thicknesses	Puncture Voltage 60 Cycles A.C.	O.O.
60	25	\$0.78	20#	.045	12,000	.140
61	100	3.78				
62	500	17.00				
64	25	1.35	18#	.045	12,000	.155
68	100	4.55				
67	500	21.00				
HIGH VOLTAGE TEST LEAD WIRE						
63	25	\$2.80	15#	.076	16,500	.218
68	100	7.00				
69	500	42				

COLORS—Red and Black.

# Birnbach WIRE, AUTO CABLE and ACCESSORIES



## 7 MM HIGH TENSION CABLE



Useful in reducing interference from auto secondary circuits. Also used as photo electric cell leads and wherever a low loss shielded lead is required.

No.	List Price Per 100'
1600—7 MM. High Tension Cable.....	\$10.00
781—7 MM. Shielded Secondary Wire	16.00

## FORD V-8 DISTRIBUTOR SUPPRESSOR



Designed to be inserted in the distributor of Ford V-8. Unit consists of a resistor brush which replaces the regular brush.

No. 365.....	List Price \$0.35
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## AUTO ANTENNA CONNECTOR

Permits quick connection of the auto antenna lead-in to the receiver.



No. 366—Auto Connector.....	per C \$20.00
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## FUSED ANTENNA CONNECTOR



This connector takes a standard 8 AG automobile fuse. Used in auto radio power supply cables.

No. 367—Fused Connector	List Price per C \$25.00
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## HIGH VOLTAGE LACQUERED WIRE

Recommended for use as leads for wiring high voltage devices, and transmitter power supplies. Constructed of tinned stranded copper conductor with a wall of rubber covered with a highly lacquered cotton braid.



No.	Ft.	Size	Puncture Voltage	O.D.	List Price
2810	—100	.....10 $\frac{1}{2}$	9500	.....225	\$10.50
2812	—100	.....12 $\frac{1}{2}$	9500	.....192	7.00
2814	—100	.....14 $\frac{1}{2}$	9500	.....167	4.75
2816	—100	.....16 $\frac{1}{2}$	9500	.....153	4.00
2818	—100	.....18 $\frac{1}{2}$	9500	.....145	3.50

## SHIELDED VARNISHED CAMBRIC WIRE

Used where an oil and water resistant wire with a shielded covering is required. Constructed of tinned stranded conductor with 2 layers of varnished cambric and a lacquered cotton braid with a tinned copper shield overall.



No.	Ft.	Size	Capacity per Ft. m.mfd.	O.D.	List Price
1800	—100	.....16	.....142	.....145	\$10.50
1818	—100	.....18	.....102	.....181	9.50
1820	—100	.....20	.....100	.....125	8.75

## SHIELDED GRID LEAD WIRE

High insulation of this wire will reduce the loss in shielded grid circuits. Constructed of tinned stranded conductor with a rubber insulation, waxed cotton braid with closely woven shield overall.



No.	Ft.	Size	Capacity per Ft. m.mfd.	O.D.	List Price
818	—100	.....18 $\frac{1}{2}$	.....75	.....180	\$8.50
820	—100	.....20 $\frac{1}{2}$	.....70	.....150	7.50

## SOLID TINNED WIRE

### SOFT DRAWN

No.	Ft.	Size	List Price
<b>No. 10</b>			
1400	—25 ft. coil	.....	\$ 1.30
1401	—50 ft. coil	.....	2.55
1402	—100 ft. coil	.....	5.00
1403	—1000 ft. spool	.....	46.00
<b>No. 12</b>			
1404	—25 ft. coil	.....	.85
1405	—50 ft. coil	.....	1.60
1406	—100 ft. coil	.....	3.00
1407	—1000 ft. spool	.....	28.00
<b>No. 14</b>			
1408	—25 ft. coil	.....	.60
1409	—50 ft. coil	.....	1.10
1410	—100 ft. coil	.....	2.00
1411	—1000 ft. spool	.....	20.00
<b>No. 16</b>			
1412	—25 ft. coil	.....	.42
1413	—50 ft. coil	.....	.68
1414	—100 ft. coil	.....	1.10
1415	—1000 ft. spool	.....	11.00

No.	Ft.	Size	List Price
<b>No. 18</b>			
1416	—25 ft. coil	.....	\$0.33
1417	—50 ft. coil	.....	.60
1418	—100 ft. coil	.....	1.10
1419	—1000 ft. spool	.....	11.00
<b>No. 20</b>			
1420	—25 ft. coil	.....	.30
1421	—50 ft. coil	.....	.50
1422	—100 ft. coil	.....	1.00
1423	—1000 ft. spool	.....	10.00
<b>No. 22</b>			
1424	— $\frac{1}{4}$ lb. spool	.....	.75
1425	— $\frac{1}{2}$ lb. spool	.....	1.20
1426	—1 lb. spool	.....	2.25
<b>No. 24</b>			
1427	— $\frac{1}{4}$ lb. spool	.....	.82
1428	— $\frac{1}{2}$ lb. spool	.....	1.50
1429	—1 lb. spool	.....	2.65
<b>No. 26</b>			
1430	— $\frac{1}{4}$ lb. spool	.....	.90
1431	— $\frac{1}{2}$ lb. spool	.....	1.65
1432	—1 lb. spool	.....	3.00

## SOLID ENAMEL WIRE

No.	Ft.	Size	List Price
<b>No. 10</b>			
597	—25 ft. coil	.....	\$1.50
697	—50 ft. coil	.....	2.50
497	—100 ft. coil	.....	4.40
1497	—1000 ft. spool	.....	44.00
<b>No. 12</b>			
192	—25 ft. coil	.....	.85
292	—50 ft. coil	.....	1.70
492	—100 ft. coil	.....	2.75
492A	—150 ft. coil	.....	4.15
492B	—200 ft. coil	.....	5.50
1492	—1000 ft. spool	.....	27.50
<b>No. 14</b>			
190	—25 ft. coil	.....	.50
290	—50 ft. coil	.....	1.00
490	—100 ft. coil	.....	1.80
490A	—150 ft. coil	.....	2.70
490B	—200 ft. coil	.....	3.60
1490	—1000 ft. spool	.....	18.00
<b>No. 15</b>			

## RAYON BRAID LACQUERED WIRE

Constructed of stranded tinned copper conductor for easy soldering, with heavy wall of live rubber over which a rayon braid is woven. A high gloss lacquered finish over braid. Conductor consists of 16 strands of No. 80.



No.	Ft.	Puncture Voltage	Size	List Price
3425	—25 Coil	.....9000	.....18 $\frac{1}{2}$	\$1.00
3450	—50 Coil	.....9000	.....18 $\frac{1}{2}$	2.00
3460	—100 Coil	.....9000	.....18 $\frac{1}{2}$	4.00
3600	—500 Spool	.....9000	.....18 $\frac{1}{2}$	18.00

Colors: Black, red, green, yellow, brown, blue

## VARNISHED CAMBRIC WIRE

Widely used in automotive wiring because of oil and waterproof construction. Consists of tinned stranded conductor with two layers of varnished cambric over which a lacquered cotton braid is woven.



No.	Ft.	Size	Puncture Voltage	O.D.	List Price
3416	—100	.....16	.....1000	.....108	\$6.75
3418	—100	.....18	.....1000	.....107	5.75
3420	—100	.....20	.....1000	.....0.94	4.50

## No. 340 WHEEL STATIC ELIMINATOR

An effective means of reducing static created by the front wheels. Installation is made by placing the broad base of the spring against the hub cap and the cone point into the hole of the axle. No. 340—Std. Pkg. 50



List Price.....\$10.00 per 100

## PHONO-PICKUP WIRE

Small diameter—ideally suited for replacement in pickup arms of any make.

No.	Ft.	Size	List Price
1822A	100 ft. Spool	22	\$ 6.00
1822B	500 ft. Spool	22	28.00
1822C	1000 ft. Spool	22	52.50



## BIRNBACH IGNITION FILTERS

These Ignition Filters completely eliminate all ignition and high tension circuit interference, making clear auto radio reception a certainty. The only ignition filters having a copper wound inductance, which accounts for the low resistance of 120 ohms for the Ignition Filter. Less gasoline is consumed than when high resistance filters are used.

No.	List Price each
350—Ignition Filter—Bracket Type.....	\$0.85
351—Ignition Filter—Cable Type.....	.85
352—Distributor Filter.....	.85
353—Ignition Filter—Screw Type.....	.85
359—Ignition Filter—Slip-on Type.....	.85

## BIRNBACH MASTER FILTER

Eliminates all ignition interference and does away with the necessity of having a separate filter for each spark plug. Available in two types, namely, the Distributor type for easy insertion into distributor head, and the Cable type to be placed into the distributor lead where it is impossible to insert it into the distributor head.



No.	List Price each
354—Cable or Distributor Type.....	\$3.50

## AUTO NOISE FILTER



These are especially designed for the elimination of noise created by generator commutator, electrical windshield wiper, horn, and especially dome, tail, and stop light cables. Connections made by bolting down the flange of container to chassis. The long insulated lead with a convenient screw lug is connected to the source of interference.

No.	List Price
355—Auto Noise Filter— $\frac{1}{2}$ Mfd.....ea.	\$0.75
356—Auto Noise Filter—1 Mfd.....ea.	.75



# Birnbach PLUGS and JACKS

## GIANT PLUGS



Used for heavy current, they are rated at 25 amps. The long life nickel silver alloy spring is secured over a pin preventing a collapse of the spring and also maintaining the full action of the spring when inserted into the Jack. The No. 398A plug has a hole in the threaded shank to permit soldering to it. It is used extensively on diathermy electrode pad cables. Standard Package 25.



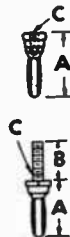
No.		A	B	C	List Price
396	Plug	1 1/8"	—	10-32	each \$0.30
397	Plug	1 1/8"	—	1/4-20	each .35
398	Plug	1 1/8"	1/2"	1/4-28	each .30
398A	Plug	1 1/8"	1/2"	1/4-28	each .30



Large area of contact is one of the outstanding features of these jacks and plugs. The No. 400 series of packages have a nickel silver contact spring secured over a full length central pin, making these plugs non-collapsible and assuring a low resistance contact. Capacity 5 amperes. Standard Package 100.



No.		A	B	C	List Price
400	Plug	3/4"	—	6-32	each \$0.12
401	Plug	3/4"	—	6-32	each .13
404A	Plug	3/4"	3/4"	1/4-28	each .18



## BANANA PLUGS

### No. 403 BANANA JACK



Accurately milled and has a precision reamed hole to help maintain the tight and smooth action of the plug. It is made of brass nickel plated and comes complete with nut and lug. Standard Package 100.

No.		A	B	C	List Price
403	Jack	1/2"	3/8"	1/4-28	\$0.12



## INSULATED BANANA JACKS



The No. 391 Jack is very popular with the electric therapeutic manufacturers. The 1/2" dia. Insulated head admits all of the exposed metal part of the metal plug when inserted. Mounts in a 1/8" dia. hole on a panel up to 3/8" thick. The No. 406 Jack has a 1/8" dia. Insulated top. It fits into a 1/8" dia. hole and takes up to a 3/8" panel. Both come complete with insulating shoulder washer, nut and lug.

No.		Std. Pkg.	List Price
391—Insulated Jack—red or black		50	\$0.19
406—Insulated Jack—red, black, yellow, or green		50	.18

391

406

## SHAFT COUPLINGS, REDUCERS AND EXTENDERS

By the use of these units all 1/4" and 3/8" dia. shafts and knobs can be assembled together. The insulated units are for use where electrical isolation is desired. Furnished complete with set screws shown. Be sure to specify whether Brass or Insulated is desired.

Brass No.	Insulated No.	Shaft A	Hole B	List Price
534	634	1/4"	1/4"	each \$0.16
535	635	1/4"	3/8"	each .16
536	636	3/8"	3/8"	each .16
537—Reducer for 3/8" Dia. Hole to 1/4" Dia. Shaft.				each .10

### COUPLINGS

Brass No.	Insulated No.	Shaft A	Hole B	List Price
531	631	1/4"	1/4"	each \$0.16
532	632	1/4"	3/8"	each .16
533	633	3/8"	3/8"	each .16

### EXTENDERS

No.	Length	Hole I.D.	O.D.	List Price
538—Brass	1 1/2"	1/4"	1/4"	each \$0.25
538—Insulated	1 1/2"	1/4"	1/4"	each .25

### BRASS SHAFTING

No.	Length	List Price
540—1/4" Dia. 6" Long.		each \$0.20
541—1/4" Dia. 12" Long.		each .40
542—3/8" Dia. 8" Long.		each .35

### FIBRE SHAFTING

No.	Length	List Price
543—1/4" Dia. 6" Long.		each \$0.25
544—1/4" Dia. 12" Long.		each .50
545—3/8" Dia. 8" Long.		each .60

## GIANT JACKS



Milled with the central hole being reamed to size to insure a tight fit with all Giant Plugs. The No. 394 and No. 399A have a 10-32 thread tapped at the end permitting connection to be made. They are all made of brass and nickel-plated and come complete with nut and lug.



No.	Std. Pkg.	A	B	C	List Price
399A...Jack	25	1 1/8"	1/2"	1/4-24	each \$0.30
394...Jack	25	1 1/8"	1/2"	1/4-20	each .25
395...Jack	25	1 1/8"	1/2"	1/4-20	each .30
399...Jack	25	1 1/8"	1/2"	1/4-24	each .35

## No. 392 INSULATED GIANT PLUG



Made so that no projecting edges are exposed, thereby protecting the user from unnecessary contact. Connection is made by soldering into the hole at the end of the threaded shank of the plug. Handle is 1 1/2" long by 3/8" dia.; length overall 3". Colors: red or black.

No. 392—Insulated Giant Plug.....List Price \$0.50

## No. 393 INSULATED GIANT JACK



Designed to leave no metal part exposed on the panel. The 3/4-24 brass nickel plated sleeve has a 10-32 threaded hole at the end permitting a connection at the end of the jack or to the lug under the head. Either assembly available complete with nut insulating shoulder washer, lock-washer and lug. Length overall 1 1/2". Colors: red or black.

No.	List Price
393 —Insulated Giant Jack under head lug	\$0.45
393A—Insulated Giant Jack end lug	.45

## HARD RUBBER INSULATED GIANT PLUG



Especially designed for use with diathermy cables. It has a 3/8" dia. hole in the handle to take the largest cable. It is made of polished black hard rubber. The handle is 3" long by 3/8" dia. Overall length is 4 1/2".

No. 342—Hard Rubber Insulated Plug.....List Price \$2.00

## No. 341 Insulated Banana Plug



This plug consists of our No. 404A plug with a larger handle 1 1/2" long by 3/8" dia. Used on a therapeutic apparatus and test equipment. Overall length 2 1/2". Colors: red or black.

No. 341—Insulated Banana Plug.....List Price \$0.45

## No. 404 Insulated Banana Plug



The plug is for experimental test leads because of its Scrulok solderless connection and the non-collapsible special alloy springs assembled on a pin preventing collapse of the plug spring. The handle is made of phenolic resin and is 1 1/2" by 1" long. Colors: red, black, yellow and green.

No. 404—Insulated Banana Plug.....Std. Pkg. 50.....List Price \$0.20

## No. 604 BANANA PLUG



Made of solid brass nickel-plated, with the end being slotted. The cast phenolic handle is 1" long by 3/8" dia. and is held on by the screw that secures the wire to the plug. Colors: red, black, yellow and green.

No. 604—Plug.....Std. Pkg. 50.....List Price \$0.19

## No. 605 HANDLE JACK



Consists of a banana jack inside an insulated sleeve. Connection is made by soldering to the end of the jack. Handle is made of cast phenolic resin 3/8" dia. by 1 1/2" long. Colors: red, black, yellow and green.

No. 605—Handle Jack.....Std. Pkg. 50.....List Price \$0.25

## TINNED LUGS



No.	Hole for Screw	Length	List Price Per M
1	8	1 1/2"	\$ 4.75
2	10	1 1/2"	4.75
3	1/4"	1 1/2"	4.75
4	3/8"	1 1/2"	27.00
5	1/2"	1 1/2"	34.50
21	10	1 1/2"	6.50
22	1/4"	1 1/2"	21.00
201	8	1 1/2"	6.50
86	6-8-10	1 1/2"	7.00
97	8	1 1/2"	7.00
98	6-8	1 1/2"	8.50
99	4-6-8	1 1/2"	8.50

# Birnbach

# INSULATORS



## STEATITE CONE STANDOFF INSULATORS



Made of low absorption high tensile strength porcelain with a smooth glaze. All heights except the No. 430 are available with a Jack or a threaded hole top. Range of sizes are adequate for all needs. They are available only in a white glaze and come complete with screws, metal and cork washers.

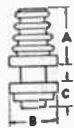


No.	Height		Std. Pkg.	Threaded Holes			Mounting Hole	List Price each
	A	B		B	C	D		
430	3/8"	1/2"	100	3/8"	1/2"	6-32	6-32	\$0.20
431	1"	1 1/8"	50	1/2"	3/4"	8-32	8-32	.30
431J	1"	1 1/8"	50	1/2"	3/4"	8-32	No. 430 Jack	.35
432	1 1/2"	1 3/4"	50	3/4"	1"	10-32	10-32	.55
432J	1 1/2"	1 3/4"	50	3/4"	1"	10-32	No. 403 Jack	.75
433	2"	2 1/4"	25	1"	1 1/4"	1/4-20	1/4-20	1.00
433J	2"	2 1/4"	25	1"	1 1/4"	1/4-20	No. 395 Jack	1.20

## CORRUGATED FEEDTHRU INSULATORS



The six new corrugated type feedthru insulators have more than twice the leakage path of the straight type because of increased surface of the corrugations and recommends itself where a straight side insulator of equal height is not satisfactory because of its shorter leakage path. Brass nickel-plated hardware and cork mounting washers supplied.



No.	Height		Std. Pkg.	Mounting			List Price
	A	B		B	C	Hole	
479	1 3/8"	1 1/2"	25	1 1/8"	1 1/4"	10-32	ea. \$0.55
479J	1 3/8"	1 1/2"	25	1 1/8"	1 1/4"	No. 403 Jack	ea. .65
4276	2 3/8"	2 1/2"	10	1 1/2"	1 3/4"	1/4-20	ea. 1.00
4276J	2 3/8"	2 1/2"	10	1 1/2"	1 3/4"	No. 394 Jack	ea. 1.20
4452	4 3/8"	4 1/2"	5	2 3/8"	2 1/2"	1/4-20	ea. 1.50
4452J	4 3/8"	4 1/2"	5	2 3/8"	2 1/2"	No. 394 Jack	ea. 1.80

## HIGH VOLTAGE FEEDTHRU INSULATOR



This insulator has been designed to meet the demand for an insulator having high dielectric and mechanical strength. The extra long leakage path is made possible by the corrugations on the top insulator. The bottom sleeve taper from a base dia. of 1 1/8" where the electric stress is greatest.

Height 1 1/2".....Base Dia. 2".....Mounting Hole 1 1/4".....Hardware 1/4-20  
No. 4233.....List Price \$0.80

## METAL BASE INSULATORS



Designed to replace conventional porcelain insulators where failure of the base is due to cracking when fastened down. Extremely long leakage paths due to the corrugated surface is one of the important characteristics. They are made from high tensile strength low absorption porcelain smoothly glazed all over. Supplied with nickel-plated brass screws and nuts and cadmium plated drawn steel bases.



Cat. No.	Height	Base Dimen.		Mounting Screw		Hardware	List Price
		B	C	D	D		
887	1 3/8"	25	1 3/8" x 1 1/8"	1 3/8"	2 No. 8	10-32	ea. \$0.30
887J	1 3/8"	25	1 3/8" x 1 1/8"	1 3/8"	2 No. 8	No. 403 Jack	ea. .40
4176	2 3/8"	10	1 3/8" x 1 3/8"	1 3/8"	4 No. 10	1/4-20	ea. .55
4176J	2 3/8"	10	1 3/8" x 1 3/8"	1 3/8"	4 No. 10	No. 395 Jack	ea. .70
4451	4 3/8"	5	2 3/8" x 2 3/8"	1 3/8"	4 No. 10	1/4-20	ea. .82
4451J	4 3/8"	5	2 3/8" x 2 3/8"	1 3/8"	4 No. 10	No. 395 Jack	ea. 1.15

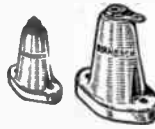
## "LUCITE" FEEDTHRU INSULATORS

These feedthru insulators are ideal for bringing high frequency leads thru a panel. They are made of genuine Dupont Lucite. Because of its low loss at high frequency, it is well adapted to insulated elements of high frequency circuits. The 1/4" dia. insulators have brass nickel plated 6-32 hardware and the 3/8" have 10-32 hardware.

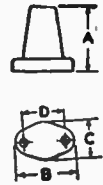


No.	Panel Height	Dia.	Mtg. Hole	Bottom Height	List Price
377	3/8"	1/8"	1/8"	1/4"	\$0.35
378	3/8"	1/8"	1/8"	1/4"	.45
379	1"	3/8"	3/8"	3/4"	.50
475	1 1/2"	3/8"	3/8"	3/4"	1.00
476	2"	3/8"	3/8"	3/4"	1.25

## STANDOFF INSULATORS



The sizes range from 3/8" to 4 1/2" high in five properly graduated heights. Made of highly vitrified low absorption glazed porcelain. No washers are necessary for mounting as the mounting surface is ground flat; but for the No. 405 and No. 966 Standoff insulators, it is advisable to use cork washers which are available as they



will permit mounting securely without breakage. All brass nickel-plated hardware is supplied. Available in white or brown glaze.

No.	Height		Std. Pkg.	Mounting			Hardware	List Price each
	A	B		B	C	D		
405	3/8"	1"	100	1/8"	1/4"	3/32"	6-32	\$0.11
965	1"	1 1/4"	50	1/4"	1/2"	1/16"	8-32	.15
966	1"	1 1/4"	50	1/4"	1/2"	1/16"	8-32	.15
966J	1"	1 1/4"	50	1/4"	1/2"	1/16"	No. 403 Jack	.20
866	1 1/2"	1 3/4"	25	1 1/4"	1 1/2"	1/16"	10-32	.20
866J	1 1/2"	1 3/4"	25	1 1/4"	1 1/2"	1/16"	No. 403 Jack	.25
866J	1 1/2"	1 3/4"	10	1 1/4"	1 1/2"	1/16"	No. 395 Jack	.60
4275	2 3/8"	2 1/2"	10	2 3/8"	2 1/2"	1/16"	1/4-20	.52
4275J	2 3/8"	2 1/2"	10	2 3/8"	2 1/2"	1/16"	No. 399 Jack	.90
4450	4 3/8"	4 1/2"	5	3 3/8"	3 1/2"	1/16"	1/4-20	1.00
4450J	4 3/8"	4 1/2"	5	3 3/8"	3 1/2"	1/16"	No. 399 Jack	1.35

## FEEDTHRU INSULATORS



Made of highly vitrified, low absorption porcelain smoothly glazed to prevent accumulation of dust or dirt. Maximum strength is achieved by the proper proportions and flat mounting surfaces. Long insulating sleeves on the lower part of the insulator contribute much



to their performance on high voltages. Brass nickel-plated hardware.

No.	Height		Std. Pkg.	Mounting			Hardware	List Price
	A	B		B	C	Hole		
458	3/8"	1"	50	1/8"	1/4"	1/16"	6-32	ea. \$0.22
478	1"	1 1/4"	25	1/4"	1/2"	1/16"	10-32	ea. .30
478J	1"	1 1/4"	25	1/4"	1/2"	1/16"	No. 403 Jack	ea. .38
4125	1 1/2"	1 3/4"	25	1 1/4"	1 1/2"	1/16"	10-32	ea. .35
4125J	1 1/2"	1 3/4"	25	1 1/4"	1 1/2"	1/16"	No. 403 Jack	ea. .40
4234	2 3/8"	2 1/2"	10	2 3/8"	2 1/2"	1/16"	1/4-20	ea. .90
4175	2 3/8"	2 1/2"	10	1 1/4"	1 1/2"	1/16"	1/4-20	ea. .80
4175J	2 3/8"	2 1/2"	10	1 1/4"	1 1/2"	1/16"	No. 394 Jack	ea. 1.15

## BEE-HIVE STANDOFF

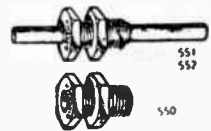


Base measures 2" dia. with 3 holes on a 1 1/2" circle. for No. 8 screws. Supplied complete with 12-24 nickel-plated brass screw and nuts. The No. 766J has a No. 403 Jack. Available white or brown glaze.

No.	Hardware	Std. Pkg.	List Price
766	Standoff Insulator, 12-24 Screw	10	\$0.30
766J	Jack Type	No. 403 Jack	10 . . . . .35

## FRONT PANEL BEARING

The No. 550 Front Panel Bearing is cadmium plated brass for panels up to 3/8" in thickness and for 1/4" dia. shafts. The No. 551 and No. 552 are complete assemblies of the No. 550 and 1/4" dia. brass shaft cadmium plated.



Cat. No.	List Price
550—Front Panel Bearing.....	each \$0.16
551—Front Panel Bearing, 1/4" shaft, 3" long.....	each .45
552—Front Panel Bearing, 1/4" shaft, 6" long.....	each .55

## FLEXIBLE COUPLINGS



These flexible couplings cover all needs of the constructor. Tandem operation of two or more units is possible without having the shafts in exact alignment. Flexibility without back-lash is obtained by the cadmium plated phosphor bronze springs, which are rigidly riveted to the insulation. All units fit 1/4" dia. shafts.

No.	Dia.	Insulation	List Price
360	1 1/4"	Fibre	each \$0.35
361	1 1/4"	Bakelite	each .50
362	1 1/4"	Steatite	each .60

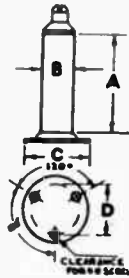


# Birnbach INSULATORS

## STEATITE PILLARS



These (steatite) pillar insulators have great tensile strength with extremely low losses at very high frequencies and are glazed on the outside to decrease surface leakage. They are tapped on both ends and are supplied complete with nickel-plated mounting base and top hardware.



No.	Height	Std. Pkg.	B	Hardware	Base Dia.	C	D	List Price
450	1"	10	1/4"	6-32	1 1/4"	7/8"	7/8"	\$0.50
450J	1"	10	1/4"	No. 403 Jack	1 1/4"	7/8"	7/8"	.60
451	1 1/2"	10	1/2"	6-32	1 1/2"	7/8"	7/8"	.60
451J	1 1/2"	10	1/2"	No. 403 Jack	1 1/2"	7/8"	7/8"	.65
452	2 1/2"	10	1/2"	6-32	1 1/2"	7/8"	7/8"	.65
452J	2 1/2"	10	1/2"	No. 403 Jack	1 1/2"	7/8"	7/8"	.85
453	2 1/2"	5	3/4"	1/4-20	1 1/4"	1 1/8"	1 1/8"	1.15
453J	2 1/2"	5	3/4"	No. 395 Jack	1 1/4"	1 1/8"	1 1/8"	1.35
454	4"	5	3/4"	1/4-20	1 1/4"	1 1/8"	1 1/8"	1.50
454J	4"	5	3/4"	No. 395 Jack	1 1/4"	1 1/8"	1 1/8"	1.60



## LUCITE SPREADERS

They are made of Dupont Lucite rod which has a very low loss at radio frequencies. It is water clear and has very low water absorption. The holes are drilled to take a No. 12 wire. A screw at the end of the spreader locks the wire in position.

### LUCITE SPREADERS

No.	Wire Spacing	Std. Pkg.	List Price Each
436	2"	25	\$0.45
437	4"	25	.50
438	6"	25	.60

### LUCITE RODS

No.	Dia.	List Price per Ft.
459	1/4"	\$0.75
460	1/2"	1.50
461	3/4"	2.75

Available in lengths up to 48 inches

## FEEDER SPREADERS

They have a cross section of 3/8" x 1/2". Made of highly vitrified, low absorption, high tensile strength porcelain with a smooth white glaze overall.

No.	Std. Pkg.	List Price
462—Spreader, 2" long	25	each \$0.22
464—Spreader, 4" long	25	each .30
469—Spreader, 6" long	25	each .40

## ANTENNA INSULATORS

These Antenna Insulators have exceptional low moisture absorption. The leakage path is long and the cross section is small and is consistent with the strength required. A smooth white glaze overall prevents the accumulation of dirt or ice.

No.	Std. Pkg.	List Price
668—4 1/4" long	25	each \$0.30
470—7" long	10	each .90
471—12" long	5	each 1.25
468—4 1/2" long Center Insulator	10	each .40

## LEADIN INSULATORS

Each cone is 2 3/4" high and made of low absorption, highly vitrified glazed porcelain. The Nos. 4237 and 4238 Leadin Insulators have sufficient insulating bushings to insulate the rod that goes through the wall. In addition, 2 bushings are included, 1/4" and 1/2" long, allowing complete insulation of the threaded rod of any length in multiples of 1/4". They come complete with brass nickel-plated hardware and lead and cork washers to permit a water-tight seal.

No.	Description	List Price
4235	—10" Rod	\$1.75
4236	—15" Rod	2.00
4237	—10" Rod with bushings	2.25
4238	—15" Rod with bushings	2.85

## STEATITE BUTTON



These specially designed steatite buttons are intended for use to simplify wiring and to be used as a binding post or a binding post insulator, or as a standoff insulator. Attention is called to the uniqueness of the design which prevents either section of the insulator from turning in respect to the special screw. The specially designed screw locks both sections.



A 3/8"	B 1/2"	C 3/4"	D 1/2"	E 6-32
No. 457	Std. Pkg. 25	List Price	\$0.30	

## STEATITE PILLARS

(Without Hardware)

In many constructions, these unmounted threaded steatite pillars will facilitate assembly because of the one hole mounting and parallel mounting surfaces. They are made of glazed Steatite with threaded holes on both sides.

No.	Height	Dia.	Threaded Hole	List Price
443	1/2"	1/4"	6-32	\$0.10
444	3/4"	1/4"	6-32	.10
445	1"	1/4"	6-32	.30
446	1 1/4"	1/4"	6-32	.35
447	2 1/4"	1/4"	6-32	.40
448	2 1/2"	3/8"	1/4-20	.60
449	4"	3/8"	1/4-20	.95

## AIRPLANE INSULATORS

Used on mobile antenna installations, particularly on aircraft, as they are shaped for the least air resistance. They are made of white glazed low absorption porcelain.

No.	Length	Std. Pkg.	List Price
473	—2"	100	each \$0.15
474	—1 1/2"	100	each .11

## STEATITE AIRPLANE INSULATORS

A very small compression type insulator with small wind resistance. It is 1 1/2" long and 1/2" dia.

No. 463—Std. Pkg. 25, List Price \$0.35

## TUBE CLAMPS

These tube clips will be found extremely desirable when mounting resonant lines or elements of directive beam antennas. They are made of hard drawn aluminum and are available for 1/4", 3/8", 1/2", 3/4" and 1" dia. tubes. The 1/4", 3/8", and 1/2" have a clearance hole for No. 10 screw and the 3/4" and 1" dia. clamps have holes for 1/4" bolts.

Cat. No.	To Fit Tube	List Price
51—Clamp	1/4" Dia.	each \$0.18
52—Clamp	3/8" Dia.	each .18
53—Clamp	1/2" Dia.	each .18
54—Clamp	3/4" Dia.	each .18
55—Clamp	1" Dia.	each .30
56—Clamp	1 1/2" Dia.	each .40
57—Clamp	2" Dia.	each .40

## FLEXIBLE SHAFTS

At times there is difficulty getting the controls to the proper position on the panel. With couplings and these flexible shafts, locations can be made with ease on an offset and angles up to 90 degrees. The flexible shafts are made of phosphor bronze and fitted into 1/4" dia. hubs.

Cat. No.	List Price
553—Flexible Shaft, 3" long	each \$0.60
554—Flexible Shaft, 6" long	each .85

## TRANSMITTING TUBE SOCKETS

Improved design and additional features of the Birnbach transmitting sockets has increased their popularity and are accepted as standard. The 50 watt socket has extra heavy side-wiping phosphor bronze contact spring with the filament spring having a double contact to safely carry the heavy current. The tube base is supported by the highly polished nickel-plated brass shell set in a highly vitrified low absorption porcelain base which is ground flat to prevent breakage. All brass nickel-plated screw and milled nuts are used.

Cat. No.	List Price
434—50 Watt Socket	each \$1.70
435—10 Watt Socket	each 1.25

## JIFFY-RIG TELEVISION ANTENNAS

TACO antennas offer the TV serviceman the fastest, easiest method for antenna assembly on the market. In a minimum of time, these antennas can be readied for the roof with everything tops in electrical and mechanical qualities. By merely unfolding and tightening a few screws, the Taco Jiffy-Rig Antenna is ready

to provide the years of unexcelled performance they have been noted for during the past 16 years.

For performance curves and directivity patterns see the Taco general Catalog No. 32. All engineering data contained in that catalog has been compiled at Taco's field and laboratory testing setup at Sherburne, New York.

### LAZY X ANTENNA SERIES 950

One of the most popular types for areas where several channels are operating in both bands; introduced by Taco in 1940, the Lazy X has proved its versatility in both bands through its high gain, and stability of impedance at different frequencies. High front-to-back ratio helps eliminate reflections and co-channel interference from sides and rear. Available as either a 2 or 4-bay stacked array or as a single antenna. Stacked array providing approximately twice the gain of the single antenna. Matches popular 800-ohm lead-in. All Aluminum construction.

**CAT. No. 950**—Stacked Lazy X Antenna. 2 X-Antenna-reflectors, Connecting transmission line between antenna, 2 five-foot mast sections, accessories. (Shipping Weight: 18 1/2 lbs.).....List Price **\$32.00**

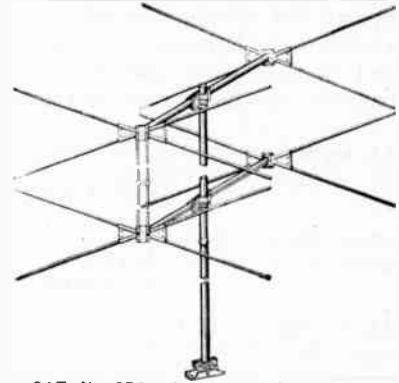
**CAT. No. 952**—Single Lazy X Antenna. 5-ft. mast and Accessories. (Shipping Weight: 7 lbs.).....List Price **\$16.00**

**CAT. No. 2050**—Stacked Lazy X—Economy Model. Less mast and accessories. 1/8" diameter elements. 2-Bay X-type with transmission lines. (Shipping Weight: 9 lbs.).....List Price **\$24.50**

**CAT. No. 951**—Stacked Lazy X antenna. Same as No. 950 less 2 five-foot mast sections and accessories. (Shipping Weight: 10 lbs.).....List Price **\$26.50**

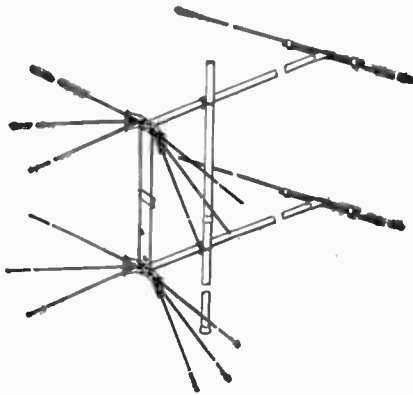
**CAT. No. 953**—Single Lazy X Antenna. Less mast and Accessories. (Shipping Weight: 5 lbs.).....List Price **\$12.75**

**CAT. No. 2051**—Single-Bay Lazy X—Economy Model, less mast and accessories. 1/8" diameter elements. (Shipping Weight 4 1/2 lbs.).....List Price **\$11.75**



**CAT. No. 954**—Transmission lines for stacking 2 single-bay antennas....List Price **\$2.25**

**CAT. No. 949**—Transmission lines for stacking two 2-bay antennas into a four-bay unit. List Price **\$4.50**



### TRI-X ANTENNA SERIES

This antenna has been designed to provide extra gain on the upper end of the high-band. The accompanying graph shows the frequency characteristics of the Tri-X compared to the Lazy-X. Where channels 11, 12, or 13, are weak, this antenna will outperform the Lazy-X design. The forward angle has been greatly increased over the Lazy-X. The single rod reflector provides practically the same gain as the X-type reflector. All aluminum construction.

**CAT. No. 1000**—Stacked Tri-X antenna. Jiffy-Rig construction, 2 single-bays with transmission line for stacking, 2 5-ft. mast sections, accessories. (Shipping weight: 10 1/2 lbs.).....List Price **\$23.00**

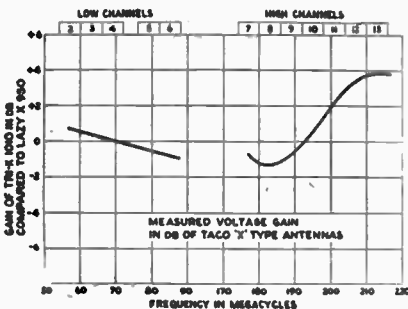
**CAT. No. 1001**—Single Tri-X antenna, Jiffy-Rig construction, single-bay, 5-ft. mast and accessories. (Shipping Weight: 4 1/2 lbs.).....List Price **\$11.00**

**CAT. No. 1012**—Stacking kit for above Tri-X antennas. Stacks two. Includes connecting transmission lines and terminal panel.....List Price **\$2.25**

**CAT. No. 1013**—Four-bay Stacking kit for above Tri-X antennas. Stacks 2 No. 1010 or No. 2010. Includes connecting transmission lines and terminal panel. List Price **\$4.50**

**CAT. No. 2060**—Dual-front Stacked X. Consists of: 2 crossarm assemblies with U-bolt; 8 SOLID rod antenna elements; 8 SOLID rod reflector elements; 2 Q-bars with terminal panel. (Shipping weight: 12 lbs.).....List Price **\$24.50**

**CAT. No. 2061**—Dual-front Single X. Consists of: 1 crossarm assembly with U-bolt; 4 SOLID rod antenna elements; 4 SOLID rod reflector elements. (Shipping Weight: 9 lbs.).....List Price **\$11.75**



## TACO DISTRIBUTION SYSTEM

To fulfill the need for multi-set installations in TV stores and apartment houses, Taco has designed and engineered a TV Distribution System to fill such needs. A separate amplification strip is used for each channel, and is designed as a plug-in unit. Thus, the user is assured of maximum efficiency on each channel. The signal goes into a mixer unit, after amplifica-

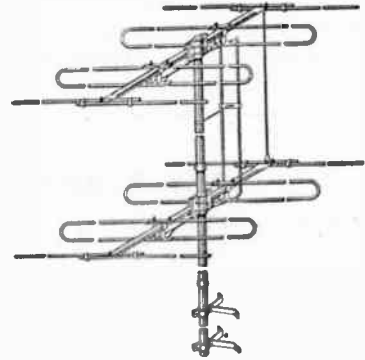
tion, thereby making individual selection of channel at all outlets possible.

System has been designed to provide trouble-free, good service. For additional technical, capacity, and price information, write to Technical Appliance Corporation, Sherburne, New York, or contact your Taco jobber for full details.

## JIFFY-RIG TELEVISION ANTENNAS

### TWIN-DRIVEN YAGI ANTENNA SERIES 980

The finest fringe area antenna ever manufactured. Establishing records of long distance reception. Two driven elements in each bay. Impedance matches 300-ohm lead-in. Terrific gain makes possible satisfactory installations in previously impossible areas. For those very weak areas, this antenna will provide more gain, dollar for dollar, than any other antenna. Stacked model has gain of over 9½ db. Available tuned for any of the low-band channels (2-6), also in stagger-tuned models covering 2 adjacent channels. Specify channel, or channels required.



CAT. No. 980-(\*)—Two-Bay Twin-Driven Yagi Antenna less mast. (Shipping Weight: 13 lbs.).....List Price \$42.50

series. (Shipping Weight: 18 lbs.)  
List Price \$51.00

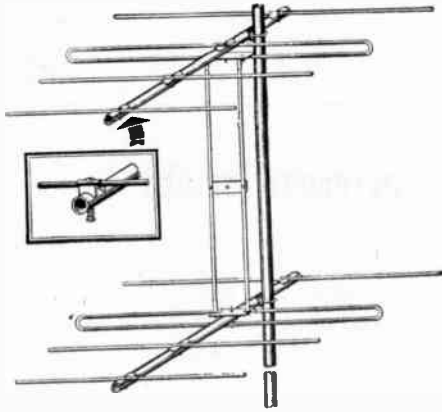
CAT. No. 981-(\*)—Single-Bay Twin-Driven Antenna less mast. (Shipping Weight 6 lbs.)  
List Price \$21.00

CAT. No. 986-(\*)—Single-Bay Twin-Driven Yagi Antenna with 5-ft. mast and accessories. (Shipping Weight: 7½ lbs.)  
List Price \$24.00

CAT. No. 985-(\*)—Two-Bay Twin-Driven Yagi Antenna with 15-ft. mast, and accessories.

CAT. No. 988-(\*)—Transmission lines for stacking 2 single-bay No. 981 or No. 986 antennas.....List Price \$5.00

(\*) Specify channel desired:  
2, 2½, 3, 3½,  
4, 4½, 5, 5½, 6.



CAT. No. 961-(†)—Stacked four-element Yagi antenna adapter, 2 Yagi antennas with connecting transmission line. U-bolt construction, less mast and accessories. (Shipping Weight: 5½ lbs.)  
List Price \$12.00

CAT. No. 960-(†)—Single-bay four-element Yagi, high-band antenna. Yagi antenna with U-bolt for mounting on existing mast. (Shipping Weight: 3 lbs.).....List Price \$5.75

### HIGH-BAND YAGI ANTENNAS

For those hard-to-get high-band channels, the Taco Yagi provides sharper tuning, pinpoint directivity, and very high front-to-back ratio. Available in several models, as stacked arrays, single bay, or adapters for present antenna systems, this high-band antenna provides improved reception for any one channel. Ideally suited for use with rotator. Used in many high signal strength locations for elimination of ghosts and interference through pinpoint directivity. The new exclusive TACO spring loaded snap construction brings the assembly time down to seconds and eliminates entirely the need for tools. No nuts and screws to tighten, no parts to lose and no chance of any parts becoming loose.

CAT. No. 959-(†)—Stacked Yagi high-band Antenna. 2 four-element Yagi antennas, two 5-ft. mast sections. Transmission lines with terminal panel. (Shipping Weight: 6 lbs.).....List Price \$16.50

CAT. No. 957-(†)—Yagi high-band antenna. Four-element Yagi antenna and 5-ft. mast. (Shipping Weight: 8 lbs.).....List Price \$8.00

(†) Specify channels desired: 7, 8, 9, 10, 11, 12, 13.

### TWO-DIAMETER YAGIS

The new exclusive TACO spring loaded snap construction is also used on the two-diameter type Yagi. The impedance match is accomplished through transformer action of different diameter folded dipole elements.

CAT. No. 965-(†)—ONE-BAY YAGI. Consisting of: 1 crossarm with U-bolt; two-diameter driven antenna, spring-snap mounted reflector and two directors attached to crossarm. (Shipping Weight: 2 lbs.)  
List Price \$6.50

CAT. No. 966-(†)—TWO-BAY STACKED YAGI. Consisting of: 2 crossarms with U-bolt; attached to each crossarm, 1 two-diameter driven antenna; 1 spring-snap mounted reflector; 2 spring-snap mounted directors; stacking lines. (Shipping Weight: 5 lbs.)  
List Price \$13.00

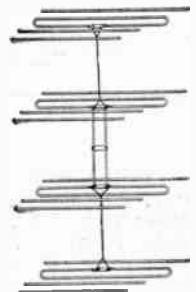
### STACKING KITS FOR HIGH-BAND YAGIS

Taco stacking kits have been designed to give the ultimate in gain and impedance match from stacked arrays of Yagi antennas. In many cases the stacking of two or four high-band Yagis makes reception possible in extremely weak signal areas. Instructions for installation are included with each kit.

CAT. No. 956-(†)—2-Bay stacking kit. Transmission lines with terminal panel. Tuned to match two No. 957 or No. 960 Yagi antennas.....List Price \$1.75

(†) Specify channel desired: 7, 8, 9, 10, 11, 12, 13.

CAT. No. 963-(†)—4-Bay stacking kit. Transmission lines and terminal panel. Tuned to match four No. 957 or No. 960 Yagi antennas .List Price \$2.35



## JIFFY-RIG TELEVISION ANTENNAS

### HI-LO BAND ANTENNA TYPE 925

An improved version of the original TACO Hi-Lo Band Antenna. Used in medium to high signal strength areas where both bands are operating. Has advantage of independent orientation for each antenna. Matching network minimizes interaction between elements and makes possible the use of one lead-in. In weak signal areas, separate leads from high and low with a switch at the receiver are recommended, or the addition of the special TACO No. 885 network. Sturdily constructed.

CAT. No. 925-5—Hi-Lo Band Antenna. High and Low-band folded-dipole antenna-reflectors, 5-ft. mast, matching stub, accessories, mast swivel base. (Shipping Weight: 6 lbs.)  
List Price \$16.50

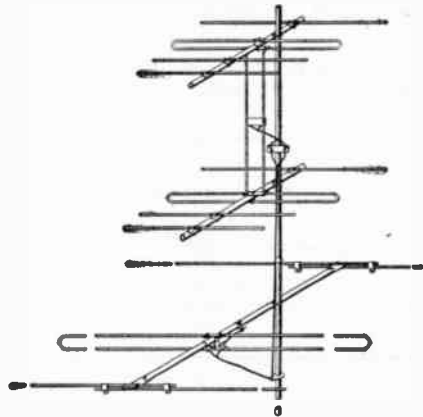
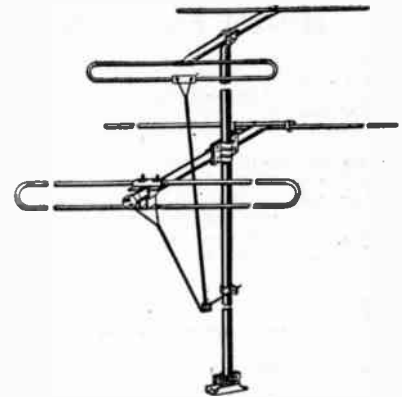
CAT. No. 925-10—Hi-Lo Band Antenna. Same as above plus extra 5-ft. mast section, guy anchor, extra mast standoff. (Shipping Weight: 7 lbs.)  
List Price \$19.00

CAT. No. 2100—Economy model, Hi-Lo band antenna. Semi-Jiffy-Rig construction. Sturdily constructed for long life. Complete with connecting stub for one lead-in operation; 5-ft. mast, no accessories. (Shipping Weight: 5 1/2 lbs.)  
List Price \$14.50

CAT. No. 885-(\*)—Hi-Lo Band Antenna Matching Network. A special network designed to eliminate interaction completely. May be used with any combination of Hi-Lo band antennas to improve reception and to eliminate need of two lead-ins. Full technical description in Engineering Bulletin No. 60. (Shipping Weight: 1/2 lb.)  
List Price \$2.15

(\*) Specify which low-band channel is desired: 2, 3, 4, 5, 6.

(†) Specify which high-band channel is desired: 7, 8, 9, 10, 11, 12, 13.



### HI-LO BAND ANTENNA TYPE 922

A modification of the Hi-Lo band antenna for service in fringe areas where the signals are weaker. Yagi design in both the high and low-band elements gives added gain and directivity. Stacked, two-bay Yagi boosts the gain on the high-band channels; single director Yagi for low-band increases gain. The high and low-band elements are connected mechanically to the mast in such a manner to permit separate orientation. Cat. No. 885-(\*) matching network included. Used in high-interference, or ghost locations to minimize either.

CAT. No. 922-(\*)—Hi-Lo Band Yagi Antenna. 2 high-band Yagis, 1 low-band Yagi. Matching network for connecting elements, 10-ft. sectional mast, accessories. (Shipping Weight: 10 lbs.)  
List Price \$31.50

CAT. No. 921-(\*)—Hi-Lo Band Yagi Antenna. 1 Yagi high-band antenna, 1 folded dipole low-band antenna, matching network, 10-ft. sectional mast, accessories. (Shipping Weight: 7 1/2 lbs.)  
List Price \$22.50

(\*) Specify the low-channel desired: 2, 3, 4, 5, 6.

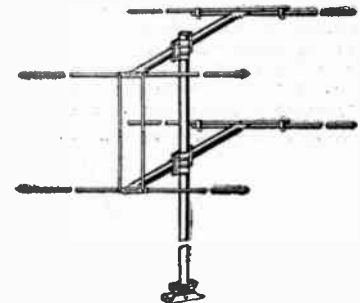
(†) Specify the high-channel desired: 7, 8, 9, 10, 11, 12, 13.

### LOW-BAND ALL-CHANNEL LAZY-H ANTENNA TYPE 935

One of TACO's most famous antennas. Known as "old dependable." Lazy-H design with reflectors provides very high gain throughout the low-band. Used in many fringe areas as a stacked array. Improved electrically and mechanically over original design. When rotated 35° off broadside direction serves as excellent high-frequency antenna. Many of these antennas have been in service for as long as ten years.

CAT. No. 935—Lazy-H Antenna. 2 antenna-reflectors mounted on separate crossarms, 5-ft mast, connecting transmission lines, swivel mounting bracket, 60-ft. 300-ohm transmission line. (Shipping Weight: 8 lbs.)  
List Price \$22.25

CAT. No. 935L—Same as above, less 300-ohm transmission line.  
List Price \$19.50



### DIPOLE ANTENNA-REFLECTOR TYPE 940

An economical, dependable folded dipole antenna with reflector for prime service area use. Broad-banded, single lobe in the low-band. Quickly erected by Jiffy-Rig method. Matches 300-ohm line. For additional gain use Type 992-(\*) Director.

CAT. No. 992-(\*)—DIRECTOR (Channel 2, 3, 4, 5 or 6). For single bay antenna; Jiffy-Rig construction. Consists of: 1 set director rods; 1 crossarm tapered and slotted on the end to fit antenna cross arm; complete instructions. (Shipping Weight: 1 lb.)  
List Price \$4.00

CAT. No. 940L—Folded dipole antenna-reflector. Folded dipole antenna-reflector mounted on crossarm, mounting clamp, 5-ft. mast, accessories, less transmission line. (Shipping Weight: 5 lbs.)  
List Price \$12.50

CAT. No. 942-(\*)—Same as No. 940L less mast and accessories. (Shipping Weight: 4 lbs.)  
List Price \$9.00

CAT. No. 2400-(\*)—Economy model adapter. Semi-Jiffy-Rig construction. U-bolt mount, less mast and accessories. (Shipping Weight: 4 lbs.)  
List Price \$9.00

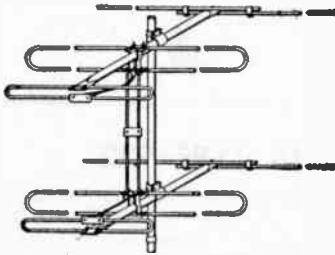
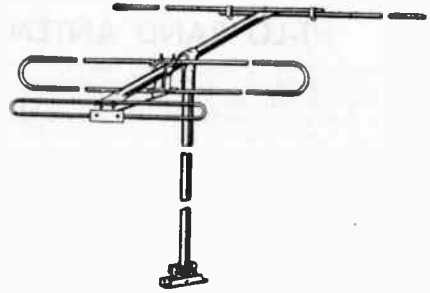


## JIFFY-RIG TELEVISION ANTENNAS

### HI-LO BAND IN-LINE ANTENNAS

An all-channel antenna that features simplicity and compactness. Designed for average strength areas where all channels are received from one direction, or for use with a rotator. On the high-band, the low-band antenna acts as a reflector for the high-band antenna. Broad-band folded dipoles show good impedance stability over both bands. Connecting stub works efficiently in most locations of fair signal strength.

- CAT. No. 930-5—Hi-Lo Band In-Line Antenna. In-line hi-lo band antenna, connecting stub, 5-ft. mast, accessories. (Shipping Weight: 6 lbs.).....List Price \$15.00
- CAT. No. 930-10—Hi-Lo Band In-Line Antenna. In-line hi-lo band antenna, same as above plus 5-ft. mast and guy anchor. (Shipping Weight: 7 lbs.).....List Price \$17.50
- CAT. No. 2200—Economy Model, Hi-Lo Band In-Line Antenna. Semi-Jiffy-Rig construction, uses  $\frac{1}{4}$ " elements, less masts and accessories. (Shipping Weight: 4 lbs.).....List Price \$11.00



### STACKED IN-LINE HI-LO BAND ANTENNA TYPE 932

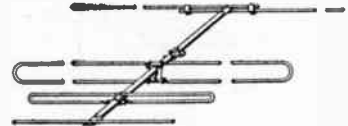
Designed for areas where both the high and low bands are desired, this antenna provides almost twice the gain of the single in-line antenna. Antennas are stacked to provide a more constant gain over the 12 channels than the single array. May be used as a higher gain antenna in weaker areas, or again as a broad-band antenna in locations where many channels are received. Ideal for use with rotator, being a single lobe antenna. Matches 300-ohm lead-in and receiver input.

- CAT. No. 932—Stacked In-Line Hi-Lo Band Antenna. 2 In-line antenna-reflector assemblies, stacking transmission lines, 2 5-ft. mast sections, mast swivel bracket, mounting hardware. (Shipping Weight: 10 lbs.).....List Price \$29.00

### IN-LINE HI-LO BAND ANTENNA WITH DIRECTOR

May be used where higher gain is required on one of the high-band channels and broad-band coverage of the low-band is needed. Director for high-band minimizes ghosts and interference due to pinpoint directivity. Equipped with U-bolt clamp ready to mount on mast.

- CAT. No. 1205-(†)—In-Line Hi-Lo Band Antenna with Director. In-Line antenna with reflector and director mounted on crossarm, U-bolt clamp assembly. (Shipping Weight: 5 lbs.).....List Price \$13.00
- (†) Indicate high-band channel: 7, 8, 9, 10, 11, 12, 13.



### 3-ELEMENT LOW-BAND YAGI ANTENNA

This antenna has been offered as an inexpensive high-gain antenna for any one of the low-band channels. It is a folded dipole antenna mounted on a crossarm with a reflector and one director forming a Yagi. Very sharply tuned for any one channel. May be mounted on existing systems where extra gain, or minimization of interference is wished on one of the low-band channels.

- CAT. No. 2300-(\*)—Stacked 3-element Yagi, consists of 2 No. 2301 antennas and stacking lines. Gain in between No. 990 and No. 980 typea. (Shipping Weight: 7 1/2 lbs.) List Price \$21.00
  - CAT. No. 2301-(\*)—Low-Band 3-element Yagi antenna. Director, folded dipole antenna-reflector with U-bolt clamp for mounting. (Shipping Weight: 4 lbs.).....List Price \$10.50
  - CAT. No. 2302-(\*)—Stacking lines for stocking 2 No. 2301 antennas.....List Price \$4.00
- (\*) Specify channel desired: 2, 3, 4, 5, or 6.



### TWIN-DRIVEN-CORNER ANTENNA

The TACO Twin-Driven Corner Antenna is a recent development in the line of all-channel antennas. It has an extremely high gain in channels 7-18. Its single lobe characteristic helps to reduce interference. It is recommended for all but the very fringe areas.

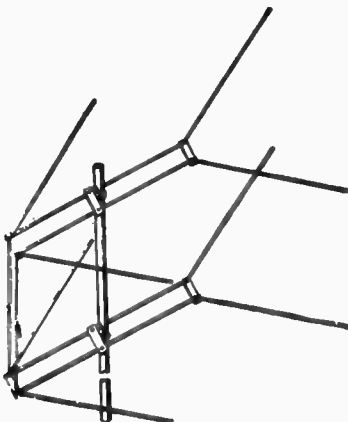
The Twin-Driven feature insures a stable field pattern as driven elements are easier to control than parasitically fed elements. It also accounts for the high front-to-back ratio.

Mechanically, this antenna is extremely light and rigid. It has low wind resistance which assures a quiet installation free from howling sounds. It is ideal for use with a rotator due to its high directivity and low weight.

May be stacked four high for extra gain in fringe areas.

- CAT. No. 1703—Single Bay Twin-Driven Corner Antenna, consisting of: two antennas with transmission line-crossarm; 5 foot 1 1/4" diameter aluminum mast; U-bolt mounting. (Shipping Weight, 5 lbs.).....List Price \$8.75

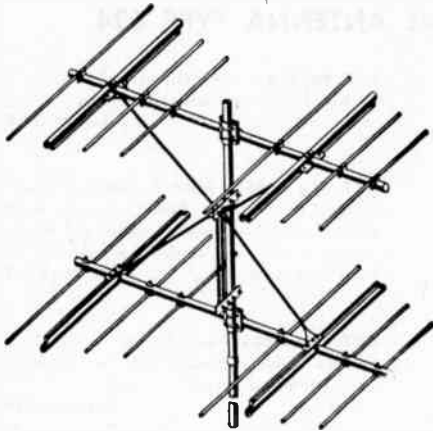
- CAT. No. 1705—Four-Bay Stacking Kit, for stacking two Cat. No. 1700 or 1701 antennas. Consisting of: 4 transmission lines; terminal panel with clamp for attachment to mast. (Shipping Weight: 1 1/2 lbs.).....List Price \$4.50



- CAT. No. 1701—Stacked Twin-Driven Corner Antenna, consisting of: 2 bays of antennas with transmission line-crossarm; U-bolt mounting; stacking line with terminal panel and brace. (Shipping Weight: 6 lbs.).....List Price \$18.50

## JIFFY-RIG TELEVISION ANTENNAS

### TANDEM YAGI ARRAY



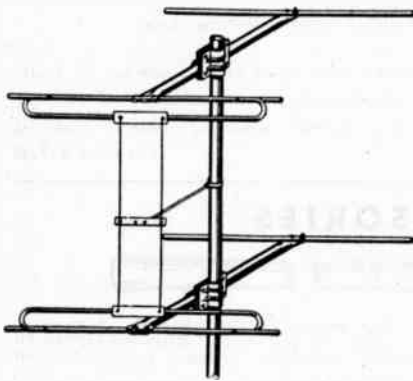
The optimum in high-band reception. For the toughest assignments in high-band installations. Exclusively TACO design and manufacture. This antenna will produce acceptable results where other antennas produce nothing.

In addition to the high gain, this antenna has the advantage of matching either 300 or 72 ohm line with no modifications. The four Yagi antennas are brought together by 300 ohm transmission lines to one terminal post which has 72 ohm impedance. A 1/4 wave transformer is used to step up the impedance for connection to a conventional 300 ohm ribbon transmission line. In noisy locations it may be desirable to use 72 ohm coax, and therefore this antenna offers a real advantage in this respect.

The spacing between the two Yagis has been so figured that they are completely isolated and have no detrimental effects on each other.

They are less susceptible to fading than other stacking arrangements as the four separate antennas are arranged in a horizontal or tandem array instead of the conventional vertical array.

CAT. No. 967-(†)—Tandem 16 Element Antenna, consisting of: 4 Yagi arrays, 2 crossarm assemblies with U-bolt mounting clamps; four 800 ohm connecting links; two 1/4 wave length matching transformers with terminal panel; two 1 1/4" dia., 5 ft., heavy wall aluminum masts. (Shipping Weight: 10 lbs.).....List Price \$33.25



### STACKED HI-BAND ANTENNA TYPE 944

A very high-gain broad-band antenna that will receive all the high-band channels. 2 600-ohm folded dipoles are connected by means of a 600-ohm transmission line, which, when tapped at the terminal panel, gives 800 ohms. Heavily braced mechanically to withstand the most severe weather. Recommended for any area where several high-band channels are operating and the finest reception is required. Also used extensively as a high-band adapter for existing antennas. For use on channels 7 through 13.

CAT. No. 944—Stacked high-band, high-gain antenna. 2 600-ohm antenna-reflectors mounted on crossarms, transmission lines with terminal panel, brace to mast, 5-ft. mast, accessories. (Shipping Weight: 4 1/2 lbs.).....List Price \$14.00

### FOLDED DIPOLE HIGH-BAND ANTENNA

Ideal for use as a high-band adapter in average to strong signal areas. Cat. No. 885 permits use of common lead-in. May be used as antenna in areas where only high-band stations are operating. May be stacked in weaker signal areas through use of adapter Cat. No. 1451-(†).



CAT. No. 1450-(†)—High-band folded dipole antenna-reflector. Folded dipole-reflector mounted on crossarm, 5-ft. mast, accessories. (Shipping Weight: 2 lbs.)  
List Price \$6.00

CAT. No. 1451-(†)—High-band adapter. High-band folded dipole antenna-reflector mounted on crossarm, less mast and accessories, U-bolt bracket for mounting. (Shipping Weight: 1 lb.).....List Price \$3.75

CAT. No. 1452-(†)—Stacking lines for stacking 2 No. 1451-(†) adapters.  
List Price \$1.50

CAT. No. 1453-(†)—Stacking lines for stacking 4 No. 1451-(†) adapters.  
List Price \$2.60

(†) Specify channels desired: 7, 8, 9, 10, 11, 12, or 13.

### NOISE-REDUCING AM-FM WIRE ANTENNA SYSTEMS

Taco AM antenna kits have been designed to deliver to the receiver all the signal strength possible, and yet hold back the undesired background noise. Signal-to-noise ratio is very high, due to the matching transformers incorporated in the following systems. See special Taco catalog on other type AM-FM and multiple antenna systems.

### DOUBLET ANTENNA SYSTEM TYPE 220-FM

Balanced doublet type covering standard broadcast, shortwave and FM bands. Completely wired, soldered and tested, ready for use. Includes Type 221 antenna transformer, two 30-ft. coils of aerial wire, 60-ft. transmission line, and all necessary hardware. Standard package: 6.

CAT. No. 220-FM—(Shipping Weight: 4 lbs.).....List Price \$13.50

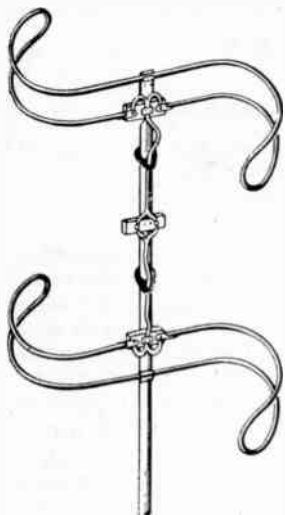
CAT. No. 220-AM only—(Shipping Weight: 4 lbs.).....List Price \$12.75

### MULTIPLE OUTLET SYSTEM

Master antenna system for connecting 10-30 AM or FM receivers to one antenna using one or several transmission lines. Used extensively in schools, hospitals, and apartment houses. Special type antennas for school public address installations. Special Taco FM and AM antenna catalog on request.

## FM ANTENNAS

### FM OMNIDIRECTIONAL ANTENNA TYPE 624



An exclusive Taco design permitting FM reception from all directions with nearly the same gain as a single dipole, which is unusual for a non-directional type. Maintains practically constant gain throughout entire FM band. Bandwidth and gain greater than that of turnstile antenna.

Available as either a single antenna or stacked array for the weaker areas. As stacked array, it may be peaked for the weakest station.

CAT. No. 624—Omnidirectional antenna, "S" type folded dipole with terminal, 5-ft. aluminum mast, 60-foot transmission line, accessories. (Shipping Weight: 4 1/4 lbs.).....List Price \$9.50

CAT. No. 624-L—Omnidirectional antenna. Same as No. 624, less transmission line. (Shipping Weight: 4 lbs.).....List Price \$6.75

CAT. No. 624ST—Stacked omnidirectional antenna. 2 "S"-Type folded dipoles, stacking transmission line, terminal panel and mounting clamp, 2 5-ft. mast sections, accessories. (Shipping Weight: 6 1/2 lbs.).....List Price \$17.50

CAT. No. 624ST-L—Stacked omnidirectional antenna. Same as No. 624ST, less transmission line. (Shipping Weight: 6 lbs.).....List Price \$14.25

### FM FOLDED DIPOLE ANTENNA-REFLECTOR

The folded dipole is rated as the best FM antenna type, inasmuch as the band spread is only 10% above and below the mean frequency. It has a flat response over entire FM band. Ideal for noisy locations due to pinpoint directivity. Rugged mechanically. Electrically perfect.

CAT. No. 620—Folded dipole antenna-reflector. Folded dipole, reflector with crossarm, 5-ft. mast, 60-ft. 300-ohm transmission line. (Shipping Weight: 4 1/4 lbs.).....List Price \$11.50

CAT. No. 620L—Folded dipole antenna-reflector. Same as Cat. No. 620, less transmission line. (Shipping Weight: 3 1/2 lbs.).....List Price \$8.75

CAT. No. 621—Folded dipole antenna. 1 folded dipole antenna, 60-ft. 300-ohm transmission line, 5-ft. mast, accessories. (Shipping Weight: 3 1/2 lbs.).....List Price \$8.75

CAT. No. 621L—Folded dipole antenna. Same as Cat. No. 621, less transmission line. (Shipping Weight: 2 1/2 lbs.).....List Price \$6.00

### FM STACKED HIGH-GAIN ANTENNA

For low signal strength areas. Maximum gain through 1/2-wave spacing and impedance matching. Impedance at terminal panel—300 ohms. Broad-banded plus high gain. High front-to-back ratio approximately 15:1. Gain about 7.0 db over reference dipole in FM band. Ideal for use with rotator for pinpoint reception in fringe areas.

CAT. No. 635—Stacked folded dipole antenna-reflector. 2 folded dipoles, 2 reflectors with crossarms, 2 transmission lines with terminal panels, 2 5-ft mast sections, mounting hardware. (Shipping Weight: 9 1/2 lbs.).....List Price \$17.00

## TV-FM ANTENNA ACCESSORIES

**BASE MOUNT.** Versatile base mount for masts. Adjustable for any roof angle, adapts to flat, vertical or sloping surfaces. Will accept mast from 1" to 1 1/2" in diameter. U-bolt with V-type saddle assures positive, tight grip to prevent turning. Heavy duty quality. Plated to withstand weather.



CAT. No. 880—Base Mount—Standard packing: 10. (Shipping Weight: 5 lbs.).....List Price \$0.70

**MAST SWIVEL BRACKET.** Designed for mounting lower end of 1 1/4" diameter mast to flat or sloping roof. May also be used on vertical surface where guys are to be installed. Standard packing: 10.

CAT. No. 858—Mast Swivel Bracket. (Shipping Weight: 2 lbs.).....List Price \$0.75 each



**MAST GUY ANCHOR.** A fixed mast anchor for guy wires. After being tightened, will prevent mast from turning. Very rugged. Standard packing: 10.

CAT. No. 192—Mast Guy Anchor. (Shipping Weight: 1 1/2 lbs.).....List Price \$0.35

**U/L APPROVED LIGHTNING ARRESTER.** A very important item in installations often overlooked. Protect yourself as well as your customer by using one of these Taco carbon-pile resistor type arresters. This is the type approved by the Underwriters as well as local codes. Standard packing: 10.



CAT. No. 409—Lightning Arrester. (Shipping Weight: 2 lbs.).....List Price \$1.25 each

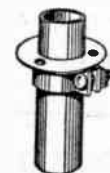


**SECTIONAL MAST.** Mast section of 1 1/4" diameter, 5 ft. long, heavy-wall aluminum tubing. One end swaged, other end tapered for positive, quick telescoping connection. Standard package: 10 per carton.

CAT. No. 868—5-ft. Mast Section. (Shipping Weight: 10 lbs.).....List Price \$21.50/10

**MAST COUPLING.** Designed to assure positive coupling of mast sections. Will connect 1 1/4" or 1 1/8" tubing in tight grip through use of three 1/4" bolts. Standard package: 10 per carton.

CAT. No. 189—Mast Coupling. (Shipping Weight: 7 lbs.).....List Price \$0.75 each



**GUY ANCHOR.** This anchor has been designed for use where the mast must be rotated for orientation, or where there are only a few spots on the roof for anchoring guy wires. Mast may be erected with guys attached, and tightened with turnbuckles after erection. Standard packing: 10 per carton.

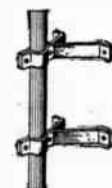
CAT. No. 867—Guy Anchor. (Shipping Weight: 2 1/2 lbs.).....List Price \$0.55

**MAST BRACKETS.** Heavy duty brackets for mounting mast to wall, chimney or parapet. Provides rigidity by spacing brackets far apart. Made of heavy steel, hot-galvanized to resist rust. Will accept 1 1/4" or 1 1/8" diameter masts.

CAT. No. 190-7"—2 Brackets for 7-inch clearance from mounting surface. (Shipping Weight: 2 1/2 lbs.).....List Price \$2.50

CAT. No. 190-14"—2 Brackets for 14-inch clearance from mounting surface. (Shipping Weight: 4 lbs.).....List Price \$3.25

CAT. No. 190-21"—2 Brackets with brace for 21-inch clearance from mounting surface. (Shipping Weight: 6 lbs.).....List Price \$4.50



**PREMAX**

# Telescoping Vertical Antennas

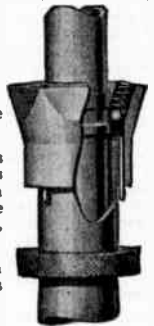
Premax Adjustable Tubular Antennas have been widely used in radio fields for a long period of years and have shown exceptionally efficient, dependable performance under most severe climatic and shock conditions, both in continental United States and abroad. They are available in various lengths to meet all requirements, in monel, aluminum and steel. Mountings and insulators will be found on page S-48.

## PREMAX AUTO-MANIC ANTENNA

The Premax "Auto-Manic" Antenna can be raised or lowered with one hand, thus meeting the need for a marine installation that can be lowered simply and easily when passing under bridges or other obstructions.

The "Auto-Manic" locking device on each of the telescoping sections is free to move when the sliding sections travel upward and binds them securely when reverse pressure is applied. Each section can be extended inches at a time with one hand and will lock at any point. At full extension of each section, a positive locking action occurs which is proof against severe strains and vibrations. To lower the antenna, it is only necessary to raise a special ring on the base section which releases the lower lock. As the second section telescopes into the base, it releases the second lock and so on until the entire antenna is retracted, making about a 6' unit.

The Antenna is made up of sections of a special grade of welded stainless steel tubing, hard-drawn to an extremely high tensile and yield strength. Made in three, four and five sections. Standard Premax Mountings and Insulators will fit these Antennas.



SPECIFICATIONS							
No.	Description	Extended Length	Collapsed Length	Base O.D.	Base I.D.	Weight, lbs.	List Each
88-1016	3-Section Telescoping	Appx. 16'	Appx. 6'0"	1.00"	.900"	6½	\$ 85.00
88-1022	4-Section Telescoping	Appx. 22'	Appx. 6'6"	1.25"	1.120"	12	135.00
88-1028	5-Section Telescoping	Appx. 28'	Appx. 7'0"	1.50"	1.370"	18	195.00

One-Hand Operation—Up or Down

## MONEL ANTENNAS FOR CORROSION RESISTANCE

Premax Monel Antennas have an outstanding combination of strength and corrosion resistance that is vital to trouble-free communications, whether at land or at sea . . . in the tropics or the arctic. The monel used in these Premax Antennas . . . two-thirds nickel and one-third copper . . . is twice as stiff as bronze, strong as structural steel. Yet it will not corrode or lose its strength in salt-water installations. Polished chrome-plated finish.

Premax Monel Antennas are built up of multiple sections of hard-drawn monel tubing of a tensile strength exceeding 125,000 pounds per square inch. They are fully telescoping and adjustable to any height between the minimum and maximum shown. The locking device employs a special knurled thimble and split friction clutch sleeve and holds the sections firmly at any desired height, also providing perfect electrical contacts.

SPECIFICATIONS							
No.	Description	Ext'd. Lgth.	C'laps'd. Lgth.	Base O.D.	Base I.D.	Wgt. ea. lbs.	List ea.
MM-825	5-Sec. Tele.	about 25'	5'8"	.893"	.799"	7½	\$125.00

## ALUMINUM ANTENNAS FOR LIGHT WEIGHT

Premax Adjustable Type Aluminum Antennas are designed to provide light-weight with corrosion resistance and adequate strength to meet the most exacting conditions, for marine, mobile and commercial installations where convenience in erection and dependable performance are important considerations. They are ideally adapted for use in radio telephone installations on fresh-water craft and commercial installations where convenience in extending and collapsing are important considerations. These Antennas are built up of tubing that is specially drawn seamless tempered aluminum with diameters, gauges and temper engineered to withstand wind velocities up to 60 m.p.h. The locking device is simple and positive and provides low-resistance contact between sections. Six units are available.

SPECIFICATIONS							
No.	Description	Ext'd. Lgth.	C'laps'd. Lgth.	Base O.D.	Base I.D.	Wgt. ea. lbs.	List ea.
AL-106	1-Pc. Taper Rod	6'3"	6'3"	.313"	.....	¾	\$ 7.00
AL-312	2-Sec. Tele.	12'4"	6'4"	.500"	.334"	1½	13.00
AL-518	3-Sec. Tele.	18'5"	6'4"	.750"	.584"	3	22.50
AL-324	4-Sec. Tele.	24'4"	6'4"	1.000"	.834"	5	32.50
AL-530	5-Sec. Tele.	30'0"	6'5"	1.250"	1.084"	7	47.50
AL-535	6-Sec. Tele.	35'8"	6'5"	1.500"	1.310"	12	62.50

### HEAVY-DUTY NON-ADJUSTABLE

Another type for special installations under extraordinarily trying conditions is a Heavy-Duty, Non-Adjustable Aluminum Antenna in either 17½' or 35' length. This is a specially heat-treated Antenna designed to withstand wind velocities up to 100 m.p.h. The tubing is step-tapered from a base diameter of 2" to a top of ½" on the 35' mast and a base of 1½" to a top of ½" on the 17½' mast.

HEAVY-DUTY, NON-ADJUSTABLE							
No.	Description	Ext'd. Lgth.	C'laps'd. Lgth.	Base O.D.	Base I.D.	Wgt. ea. lbs.	List ea.
AM-017	1-Pc. Taper Tube	17'9"	17'9"	.969"	.689"	5½	35.00
AM-035	3-Sec. "	35'0"	17'9"	2.000"	1.732"	19	90.00

(For Base Insulators and Mountings, See Page S-48)

## STEEL ANTENNAS FOR LOW COST

The low initial cost and general satisfaction of Premax Tubular Steel Antennas have made this equipment within all budget requirements for commercial, municipal, amateur and other types of installations. In construction these Antennas are made of high-tensile, copper-nickel steel tubing of carefully engineered diameters and wall thicknesses, heavily cadmium-plated and highly resistant to corrosion. When properly mounted, they will withstand all ordinary stresses without guying, but it is generally advisable to support them by guys or standoff insulators against abnormal winds or extreme strains.

Standard Premax Adjustable Tubular Steel Antennas are available in two, three, four, five and six-section models. All units are fully telescoping and adjustable within the lengths shown for the particular type. The locking device is simple in operation, positive in action and provides a secure and efficient electrical contact between the sections. While these Antennas possess unusual tensile strength, they are light in weight and easily portable. They have widespread use in fixed and mobile installations. NOT recommended for marine use on salt water.

SPECIFICATIONS							
No.	Description	Ext'd. Lgth.	C'laps'd. Lgth.	Base O.D.	Base I.D.	Wgt. ea. lbs.	List ea.
112-M	2-Sec. Tele.	11'8"	6'1"	.656"	.556"	4	\$ 7.00
318-M	3-Sec. Tele.	17'3"	6'2"	.875"	.775"	7	10.00
224-M	4-Sec. Tele.	22'9"	6'3"	1.063"	.963"	11	14.00
130-M	5-Sec. Tele.	28'3"	6'4"	1.250"	1.150"	15	18.00
186-M	6-Sec. Tele.	33'9"	6'5"	1.500"	1.400"	20	23.00

(For Base Insulators and Mountings, See Page S-48)

PREMAX PRODUCTS, DIVISION OF CHISHOLM-RYDER COMPANY, INC., NIAGARA FALLS, N. Y.

# PREMAX

## Rotary Beams and Elements

### PREMAX ROTARY BEAM KIT—6, 10, 11 METERS

This new Premax Three-Element Array provides in one kit a high-gain, directive antenna for use on the 6, 10 or 11-meter bands. It has many distinctive features and a high degree of flexibility not usually combined in any one beam antenna.

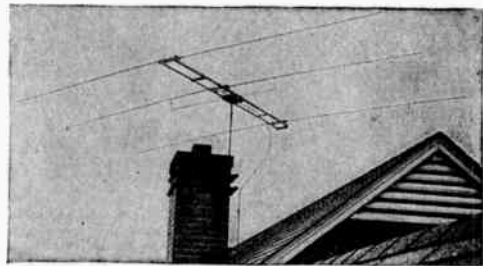
The elements of seamless duraluminum tubing are readily adjustable in length for operation at optimum efficiency in any of the bands listed. The supporting frame is of aluminum, and is provided with mounting holes and hardware for easy assembly.

By reducing the width of the frame, it has been possible to greatly reduce the weight and wind resistance of the beam. One man can conveniently erect the whole assembly with all elements in position. A light-duty tower or mast may be used. If desired, a small rotator or Premax Rotomount may be employed to permit easy turning. The frame design permits placing all insulation at voltage nodes to eliminate leakage losses and prevent detuning in wet weather. The "T-match" method of feeding the beam is an efficient and compact feed system. With continuously rotatable arrangements using sliding contacts, the feed line impedance is sufficiently high that contact resistance effects are minimized. Full instructions packed with each kit.

All elements are provided with conveniently removable shorting plates at their electrical centers, facilitating tuning and enabling other methods of feed. Alternative forms of feeding the beam are described in A.R.R.L. Radio Amateurs' Handbook.

No. RB-6309 KIT—Includes frame and three pairs elements as shown with necessary insulators and hardware, including T-Match accessories but without transmission line. Packed complete in a single carton. Weight 20 pounds. List \$45.00.

No. 309-A—Extra Elements only, no frames, insulators or hardware included. Packed in pairs. Weight 2 pounds per pair. List \$6.00.



### PREMAX CORULITE ELEMENTS

Premax Corulite Elements are designed to meet the need for lightweight but sturdy elements for use in horizontal arrays and similar applications. They are unusually light in weight and their special corrugated or reeded design provides exceptional strength and rigidity so essential in horizontal types of installation. All parts are heavily electro-plated to provide corrosion resistance and high electrical conductivity. A positive clamp, spot-welded to the tubing, permits adjustment in length and assures rigid joints and positive electrical contact between the telescoping sections. Ease of adjustment between the two halves of each component element is provided by the Premax "Hairpin" Tuning Bar. By its use it is possible to have all of the elements set at a single physical length and the variation in their electrical length may be accomplished by the "Hairpin."

Corulite Elements are available in two or four-section units as shown in the specifications below. These elements meet all requirements for the various arrays in general use and are ideal for combinations in commercial, FM, television or amateur bands.

No.	Description	SPECIFICATIONS		Base O.D.	Recommended For	Weight Per Pair	List Each
		Extended Length	Collapsed Length				
108-M	2-Section.....	8'2"	4'7"	.750"	10-meter	2 lbs.	\$ 9.00
618-M	4-Section.....	17'0"	5'3"	1.000"	20-meter	5 1/2 lbs.	19.00

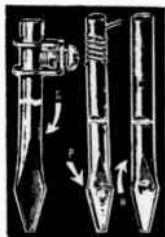
### PREMAX GROUND RODS

The original and most popular low-priced Ground Rod. Has a new quick-acting clamp that saves time in installation, yet insures positive contact on any #4 to #14 conductor. Has pointed end for easy driving. Made of steel, copper-plated. Extensively used in all types of radio and television installations.

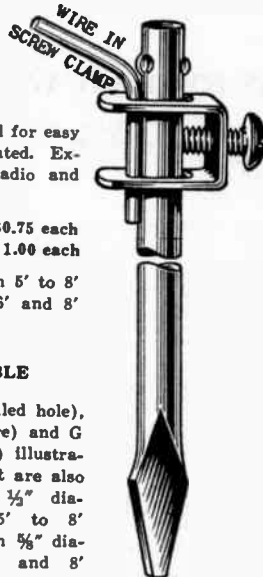
- No. J-64 4' by 3/8".....List \$0.75 each
- No. J-66 6' by 3/8".....List 1.00 each

Also available in 1/2" diameters, in 5' to 8' lengths and in 5/8" diameter in 6' and 8' lengths. Prices on request.

#### OTHER STYLES AVAILABLE



Styles H (drilled hole), P (pigtail wire) and G (screw clamp) illustrated at the left are also available in 1/2" diameters, in 5' to 8' lengths and in 5/8" diameter in 6' and 8' lengths. Prices on request.



### PREMAX WALL BRACKET



Premax Wall Bracket of heavy formed steel, for mounting vertical antennas on side walls, parapets, etc. Drilled to fit Premax Type 1 and 2 Base Insulators. Baked black enamel finish.

- Wall Bracket No. WB-1 .....List \$5.00

### PREMAX ROTOMOUNT

Will support large beam with full 360° rotation in either direction. Hand operated. Heavy sheet steel, spot welded to inside angles; extra heavy platform 10" x 12" supported by 7" ball thrust bearing; 5/8" opening through center shaft for lead-in wires. Duraluminum cable pulleys and 6' flexible cable. Wt. 17 lbs. List \$25.00.



Rotomount

### 160-MEG. ROOF ANTENNA

The Premax 160 mc. Roof Antenna is so designed that complete installation can be accomplished from the outside of the car by one man. A single 1 1/4" hole is cut in the metal roof, through which the coaxial line may be fished and connected to the insulator mounting. The entire unit is then securely anchored and sealed to the roof through its rubber gasket by four screws. The antenna is stainless steel wire 18" long with ball tip and threaded fitting. Suitable for all frequencies in the 152 to 162 mc. band.

- No. DSH-118—Complete Antenna Assembly, less transmission line. List \$6.50.
- No. DS-118—Antenna only. List \$2.00.
- No. DSJ-118—Antenna with one-hole mounting, porcelain insulator. List \$4.00.



### MOTORCYCLE ANTENNA

The coaxial line is grounded to the same portion of the mounting bracket which carries the antenna support, thus overcoming the common defect in the breaking of the conductor due to vibration. The flexible bracket has a spring tension joint permitting the entire antenna and support to be deflected 90 degrees or more without damage to antenna or transmission line. Fits standard 3/4" tubular frame, either on a vertical or horizontal member. The 34" hi-carbon, heat-treated steel antenna is cadmium-plated and may be replaced or changed without disturbing insulator assembly.

- No. CCY-134—Complete Assembly, Antenna and Mounting, less cable. List \$10.00.

- No. CC-134—Antenna only with Adaptor. List \$3.00.



PREMAX PRODUCTS, DIVISION OF CHISHOLM-RYDER COMPANY, INC., NIAGARA FALLS, N. Y.

## SERIES B CENTER LOADED ANTENNAS FOR 2 TO 8 MC. COVERING AMATEUR "75", MARINE, AIRPORT, C.A.P. AND PUBLIC SERVICE FREQUENCIES

Premax Center Loaded Antennas are practically a "must" for efficient operation on all communication frequencies—mobile and marine—between 2 and 8 Mc. The basic 75 meter Antenna covers the entire mobile phone band. Other coils are available to cover the 2,000 to 3,000 Kc. marine, airport 3105 Kc., CAP 2374 Kc. and public service frequencies.

The 75 meter Mobile Antenna consists of a 6-foot tapered whip of either high-tensile aluminum alloy, high-tensile stainless steel or high-carbon heat-treated steel, mounted above a loading coil and a special aluminum alloy base rod 24 inches long, with couplings to fit any standard Premax Mount. Coil is wound on a specially treated wood form, weatherproofed after winding with low-loss insulating varnish.

With this Premax Center Loaded Antenna, a gain of 8 decibels or more can be secured over conventional "whip" types, which is equivalent to multiplying the power by 6.3 times. The importance of this gain is immediately apparent as it is a most inexpensive way of extending both the transmitting and receiving range.

This antenna may also be used for multi-band amateur operation by shorting out turns (approximately 75% on 14 Mc.) or by completely jumpering out the coil to make an efficient quarter-wave antenna on 10 meters.

Where it is not possible to utilize a 9½-foot antenna, the base section may be omitted. This results in a base-loaded Antenna with an effective gain of 6 decibels—equivalent to quadrupling the power over a plain type antenna.

### SPECIFICATIONS — SERIES B ANTENNAS

For Frequency	Mounting Supplied	Step-Taper Cad. Plated Steel	Step-Tapered Stainless Steel	One-pc. Tapered Aluminum	Type	High
75-Meter Amateur	none*	BXC-386 \$12.75	BXS-386 \$14.00	BXA-386 \$17.50	Ken. Loaded	9½'
	none*	BLC-386 10.00	BLS-386 11.00	BLA-386 14.50	Base Loaded	6½'
2000-3000 Kc. For Marine Use	Type XL		B25-SL 21.50		Ken. Loaded	9½'
	Type XLS		B25-SLS 31.50		Ken. Loaded	9½'
	Type V		B-25-SV 21.50		Ken. Loaded	9½'
	Type VS		B25-SVS 31.50		Ken. Loaded	9½'
3105 Kc. For Airport	none*	BXC-316 13.75	BXS-316 15.00	BXA-316 18.50	Ken. Loaded	9½'
2374 Kc. For C.A.P.	none*	BXC-236 13.75	BXS-236 15.00	BXA-236 18.50	Ken. Loaded	9½'

No. BX—Base Section only. Can be used with Base-Loaded Type to convert to Center Loaded Type. List \$3.00.

\* Amateur, Airport and C.A.P. Antennas can be used with various Premax Mountings as shown on page S-48. Type RS or Type S are particularly recommended.

## SERIES C CENTER-LOADED TELESCOPING MARINE ANTENNA, 2 TO 3 MC.

The Premax Center-Loaded Collapsible Vertical Antenna, Type C, is especially designed for marine use and gives a remarkable gain over the signal produced by a straight vertical where the loading coil is housed in the transmitter cabinet. At the high-frequency end of its 2,000 to 3,000 Kc. range it gives a measured effective signal power gain of 6 decibels . . . equivalent to quadrupling transmitter power output.

This Antenna consists of two telescoping, adjustable base sections of seamless aluminum, monel or stainless steel tubing on which the loading coil is mounted, with a tapered top whip section. The total extended length is about 17 feet. The base section collapses to a single unit and the whip section telescopes through the coil into the lower sections, making a collapsed length of 7 feet. Coil is wound on low-loss bakelite tubing and treated after assembly with weatherproof varnish.

The base presents such a low impedance that little loss is experienced due to icing, wet weather or water spray. The line feeding the base is a low impedance line and is not critical as to length and body-capacity effects.

### SPECIFICATIONS

No.	Type	Base O.D.	Base I.D.	Weight	List Each
CLA-619	Aluminum	1.000"	.834"	5 lbs.	\$ 40.00
CLM-519	Monel	.898"	.799"	7 lbs.	100.00
CLS-1019	Stainless	1.000"	.902"	7 lbs.	90.00

## ONE-PIECE SOLID TAPER WHIPS—TYPE E

The Type E Antennas have been designed for maximum strength and the required flexibility. Available in three types:

**Aluminum Type**—Employing a new aluminum alloy of exceedingly high strength. Recommended where durability, lightness and corrosion-resistance are paramount. ¼" base tapering to ⅛" tip. Has an adaptor to fit all Premax mountings.

**Chrome Silicon Steel Type**—Exceptionally high tensile strength and uniformity of temper. Special heat treatment give high fatigue values. Base ¼" tapering to ⅛" tip.

**High-Tensile Stainless Steel Type**—Special formula stainless steel, double previous strength—a hardened and tempered grade that compares favorably with the best spring steel, yet has the added advantage of stainless corrosion-resisting properties. ¼" base, ⅛" tip.

### SPECIFICATIONS

Length Over-all	Chrome-Silicon Steel		High-Tensile Stainless	
	Aluminum	List Ea.	Steel	List Ea.
72 inches	EA-872	\$ 8.00	EC-672	\$7.50
84 inches	EA-884	9.00	EC-684	8.50
96 inches	EA-896	10.00	EC-696	9.50
			ES-772	\$ 8.50
			ES-784	10.00
			ES-796	11.50

(Various types of Premax Mobile-Mountings are shown on page S-48)

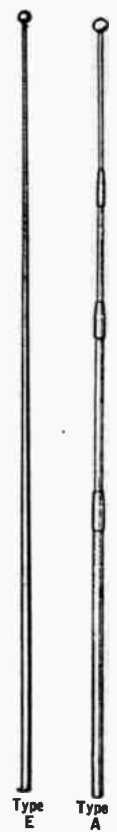
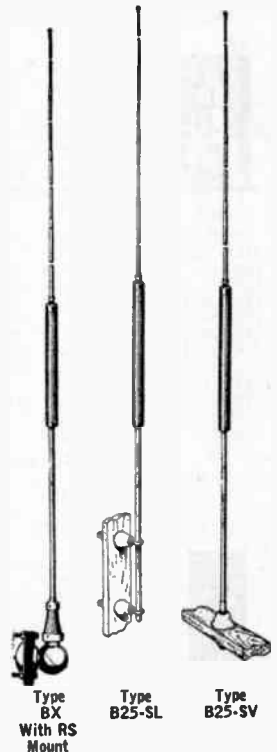
## JOINTED STEP-TAPER WHIPS—TYPE A

Type A Rods are made up of rods of varying diameters, jointed securely and permanently into a single step-tapered Antenna with ¼" base fitting all Premax Mountings. Available in extremely high carbon content steel, heat-treated and oil-tempered and heavily cadmium-plated; also in polished hard-drawn stainless steel, highly corrosion-resistant.

### SPECIFICATIONS

Length	Stainless Steel	List Ea.	Length	Cadmium-Plated Steel	List Ea.
72 inches	AS-172	\$4.00	72 inches	AC-172	\$3.00
78 inches	AS-178	4.25	78 inches	AC-178	3.25
84 inches	AS-184	4.50	84 inches	AC-184	3.50
90 inches	AS-190	4.75	90 inches	AC-190	3.75
96 inches	AS-196	5.00	96 inches	AC-196	4.00

NOTE—All Premax Whip Antennas can be supplied when desired, with Base Adaptors to fit either ¼"—18 or ⅜"—24 threaded mounts. For ¼"—18 specify TYPE L ADAPTOR, for ⅜"—24 specify TYPE W ADAPTOR. When thus ordered, add \$1.25 to above Antenna prices.



# PREMAX

## Mountings-Insulators-Accessories



**Type 1** Base Insulator; heavy-duty with compression rating up to 10,000 lbs. Galvanized malleable iron or chrome-plated bronze. Available in two styles; rigid or hinged posts.

List, all sizes, Rigid Galv. \$35; Bronze \$50; Hinged Galv. \$37.50; Bronze \$52.50.

### Type 1

Rigid Post	Hinged Post	Dia. Post
Galv. Bronze	Galv. Bronze	in 32nds
1PG-24 1PB-24	1HG-24 1HB-24	24
1PG-25 1PB-25	1HG-25 1HB-25	25
1PG-26 1PB-26	1HG-26 1HB-26	26
1PG-28 1PB-28	1HG-28 1HB-28	28
1PG-30 1PB-30	1HG-30 1HB-30	30
1PG-34 1PB-34	1HG-34 1HB-34	34
1PG-35 1PB-35	1HG-35 1HB-35	35
1PG-41	1HG-41	41
1PG-43 1PB-43	1HG-43 1HB-43	43
1PG-44	1HG-44	44
1PG-55	1HG-55	55

### TYPE 1X—SOCKET TOP

No. 1-XG—Galvanized. Top tapped standard 3/4" 16-thread. List \$30.

No. 1-XB—Bronze. Top tapped standard 3/4" 16-thread. List \$40.



**Type 2** Base Insulator; light design for masts up to 18' or higher if guyed or supported by standoff insulators. Brown-glazed porcelain with galvanized malleable iron top post and base support cemented into insulator.

List, all sizes \$12.50

### Type 2

No.	Top Post	Fits
No. 2P-24	3/4" Top Post	Fits 318-M
No. 2P-25	1" Top Post	Fits MM-825
No. 2P-26	1 1/8" Top Post	Fits AL-324



**Deck Bushing** of brown glazed porcelain with galvanized malleable flange which bolts thru rubber gasket to roof or deck.

Bushing No.	I.D.	Total Lgth.	Above Deck	Fig. Dia.	List
5D-24	3/4"	6"	3"	4"	\$10.00
5D-40	1 1/4"	8"	4 1/2"	4 1/4"	12.50
5D-56	1 3/4"	8 1/2"	4 1/2"	5 3/8"	15.00



**Type 6** Base Insulator for tower platform, rooftops or Marine. Lead-thru construction permits antenna connections below roof or deck. Flanges 6" diameter with stud and bolts for 1/2" to 3" deck. In galvanized malleable iron or chrome-plated bronze.

List, all sizes, Rigid Galv. \$40; Bronze \$65; Hinged Galv. \$42.50; Bronze \$67.50.

Rigid Post	Hinged Post	Dia. Post
Galv. Bronze	Galv. Bronze	in 32nds
6PG-24 6PB-24	6HG-24 6HB-24	24
6PG-25 6PB-25	6HG-25 6HB-25	25
6PG-26 6PB-26	6HG-26 6HB-26	26
6PG-28 6PB-28	6HG-28 6HB-28	28
6PG-30 6PB-30	6HG-30 6HB-30	30
6PG-34 6PB-34	6HG-34 6HB-34	34
6PG-35 6PB-35	6HG-35 6HB-35	35
6PB-41	6HG-41	41
6PG-43 6PB-43	6HG-43 6HB-43	43
6PG-44	6HG-44	44
6PG-55	6HG-55	55



**Type 10-S** Standoff Insulator, heavy-duty type. Chrome-plated bronze base and headcaps, porcelain insulator. Has solid clamp or hinged clamp for use with hinged-base insulator. List, Solid \$30; Hinged \$45.

Solid Clamp No.	Hinged Clamp No.	Fits Tube O.D.	Height to Center
10S-2832	10SH-2832	7/8"	to 1" about 4 1/4"
10S-3236	10SH-3236	1"	to 1 1/8" about 4 1/2"
10S-3642	10SH-3642	1 1/4"	to 1 3/8" about 4 3/4"



### Type 13-S

Alumin. Brass	Hinged Cap Fits	Tube O.D.
13SA-24 13SC-24	13HA-24 13HC-24	3/4"
13SA-28 13SC-28	13HA-28 13HC-28	7/8"
13SA-32 13SC-32	13HA-32 13HC-32	1"
13SA-34 13SC-34	13HA-34 13HC-34	1 1/8"
13SA-40 13SC-40	13HA-40 13HC-40	1 1/2"
13SA-48 13SC-48	13HA-48 13HC-48	1 7/8"



### Type 3

**Type 3** Standoff Insulator for supporting verticals or for use in pairs as complete antenna or element mounting. Galvanized iron or bronze with porcelain body, 3" in diameter. List, Galv. \$8.; Brass \$15.

Galv. No.	Brass No.	Fits Tube O.D.
3SG-16	3SB-16	3/4"
3SG-20	3SB-20	5/8"
3SG-24	3SB-24	3/4"
3SG-28	3SB-28	7/8"
3SG-32	3SB-32	1"
3SG-34	3SB-34	1 1/8"
3SG-40	3SB-40	1 1/4"
3SG-48	3SB-48	1 1/2"

**Type 4** Standoff Insulator is similar to Type 3 excepting it is provided with two ringed clamps instead of the bottom plate. In galvanized iron or bronze in same sizes as the No. 3.



### Type 7

**Type 7** Standoff Insulator is a low-priced substantial mounting with wide application. Galvanized malleable frame enclosing white split porcelain bushing. Height 6".

No.	Fits Tube O.D.
No. 7S-20	5/8"
No. 7S-24	3/4"
No. 7S-28	7/8"
No. 7S-32	1"

List, all sizes, \$4.00



### Type 8-C

**Type 8-C** Insulated Mounting Clamp for horizontal arrays, verticals, etc. Galvanized iron frame with white split porcelain bushing. Width 3 1/2". List, all sizes, \$4.00.

No.	Fits Tube O.D.
8C-20	5/8"
8C-24	3/4"
8C-28	7/8"
8C-32	1"



### Type 9-C

**Type 9-C** Insulated Mounting Clamp for horizontal elements, verticals, etc. Gray iron galvanized frame with white porcelain split bushing. Height to center 2". List, all sizes, \$3.00.

No.	Fits Tube O.D.
9C-20	5/8"
9C-24	3/4"
9C-28	7/8"
9C-32	1"



### Type 10-C

**Type 10-C** Insulated Mounting Clamp. Stamped steel electroplated frame, white porcelain split bushing; lightweight. 2" to center. List, all sizes, \$2.25.

No.	Fits Tube O.D.
10C-20	5/8"
10C-24	3/4"
10C-28	7/8"
10C-32	1"

### Type R



**TYPE R-1** Universal Mounting consists of solid aluminum split-ball fixture which can be adjusted to any angle. Attaches through heavy plastic insulation disc fitted with waterproof gasket. New type backplate provides positive ground and shielding for co-ax connector. List \$11.50.

### Type RS



**TYPE RS** Universal Mounting as above, combined with spring in one unit. Includes new shielding and grounding plate. List \$17.50.

### Type F



**TYPE F**—New single-hole, super-strong, ball-and-socket mounting for fender, cowl or gravel pan. Will support 8' whip. 30° adjustment. Chrome-plated brass with heavy bakelite insulation. Replaces any existing fender or cowl antenna without new holes. Fits all Premax 1/4" whips. List \$10.

### Type SA



**TYPE S** Spring Mount for roof or horizontal surface is a heavy-duty spring with plastic insulation, rubber gasket and steel backplate. Socket top to fit antenna. Over-all height about 5", base diameter 3". List \$12.50.

**TYPE SA** Spring Adaptor is a supplemental mounting to be used with any Premax Mobile Mounting except R-1 and permits antenna to withstand shocks when in contact with overhead obstructions. Height 4 3/4", diameter 1 3/8". List \$10.00.

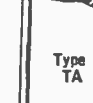
### Type K



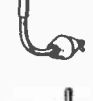
**TYPE L** Insulated Bumper Mounting; permits 10" adjustment in antenna height. Has two pairs of ceramic insulators spaced 6" apart. Bracket parts heavy cadmium-plated steel. List \$10.



**TYPE XL** Insulated Panel Mounting is similar to Type L above excepting that it does not have the steel bracket. List \$8.00.



**TYPE K** Insulated Bumper Mounting permits 10" maximum height adjustment of antenna. Insulators are heavy-duty glazed ceramic cones; bracket heavy cadmium-plated steel. List \$7.



**TYPE TA** Trunk or Panel Mounting fits any contour of surface. Insulators are white glazed ceramic cones; lower support a solid brass rod joined to 12" brass tube with locking device at top; upper support 24" brass rod adjustable at any height on tube. Antenna tube provides for 10" maximum adjustment in antenna height. All metal parts heavily cadmium-plated. List \$16.50.

### Type NA



**TYPE NA** Bumper Mounting permits attachment by means of two heavy bolts and steel backplate. Special heavy-duty glazed ceramic cone with locking device. List \$6.00.



**TYPE V**—Through-deck Mounting for B-25 Antenna or similar. (See page S-47) White porcelain cones, brass stud threaded 1/8-24. List \$7.50.

PREMAX PRODUCTS, DIVISION OF CHISHOLM-RYDER COMPANY, INC., NIAGARA FALLS, N. Y.

# WARD AERIALS

World's Finest  
FOR  
CAR AND HOME

Offer  
You

- ✓ SIMPLIFIED ONE-MAN INSTALLATION.
- ✓ UNIVERSAL DESIGNS TO FIT EVERY CAR.
- ✓ RUGGED, LASTING CONSTRUCTION with —
  - Heavy wall brass tubing
  - Weather-resistant triple chrome
- ✓ GREATEST SIGNAL PICKUP with —
  - High "Q" low-loss lead cables
  - Positive coaxial connections
  - 100% shielding
- ✓ PATENTED FLUID TYPE ANTI-RATTLE.
- ✓ HEAVY CARTONS READY FOR RESHIPMENT.

## SIDE COWL MOUNTS

Two stanchions for sturdy installation. Smartly designed insulators with chrome caps. Conversion kit for torpedo bodies included.

### LONG RANGER

Four-section, 100-inch, EZ-on installation. A favorite in low signal areas where its extra length provides fine reception.

Individually packed: 12 to a master carton.  
Approximate individual shipping weight: 1 lb. 11 oz.  
Model SC-8..... List Price, \$6.95

### AIR KING

Three-section, 66-inch, EZ-on installation. Individually packed: 12 to a master carton. Approximate individual shipping weight: 1 lb. 4 oz.  
Model SC-6..... List Price, \$4.95



## SIDE COWL OR FENDER FLEX-ANGLE

Three-section, 68-inch, EZ-on installation.  
Individually packed: 12 to a master carton. Approx. individual shipping weight: 1 lb. 8 oz.  
Model CF-6..... List Price, \$5.45

Tops in popularity because of trim styling and a flexible adjustment so rod can be locked in a vertical position, regardless of body contour. Ideal design for new body styles.



## TOP COWL OR FENDER "8-BALL"

Featuring the  
SPLIT BALL DESIGN



Three-section, 56-inch, collapses to 22 inches. Individually packed: 12 to a master carton. Approximate individual shipping weight: 1 lb.  
Model TCF-3..... List Price, \$5.35  
Model TCF-3A—Same as TCF-3 with 54" lead..... List Price, 5.60

Smart looking "8-Ball" design developed and engineered by WARD is the answer to every installer's dream. One man installs in five minutes! Secure installation! Perfect fit on every car!



## DISAPPEARING COWL OR FENDER IMPERIAL

Four-section, 100-inch, 8-9/16" exposed when collapsed.  
Individ. packed: 12 to a master carton. App. ind. shipping weight: 1 lb. 10 oz.  
Model DCF-4..... List Price, \$10.95

A disappearing antenna — 100% shielded from engine noises and completely water-sealed. Unique split-ball design plus popular disappearing feature gives that smart built-in appearance. Universal bracket for sturdy mounting. Ward 36" coaxial lead cable.

### PHANTOM

Three-section, 56-inch, 3 1/2" exposed when collapsed.  
Ward 36" coaxial lead cable.  
Individ. packed: 12 to a master carton. Approx. ind. shipping weight: 1 lb.  
Model DCF-3..... List Price, \$6.95  
Model DCF-3A—Same as DCF-3 with 54" lead..... List Price, \$7.25



## EACH MODEL COMPLETE WITH A WARD COAXIAL LEAD CABLE



Made of the finest insulating materials — Polyethylene, wire shield braid, oil and abrasion-proof vinylite.

WARD's exclusive lead connector fitting provides an easy coaxial connection, 100% shielded. Bayonet adapter for pin plug included so lead will fit every car radio.



Model C-8 (12 in.) List, \$0.75  
Model C-9 (18 in.) List, \$1.00  
Provides additional lead length required for fender installation.

Covered by one or more of the following Patent Numbers: 104968, 119160, 2152316, 2251889, 2252671, 2269947, 2366634.



# SPOT LITE WARD AUTO AERIALS

WITH THIS NEW ATTRACTIVE  
3-COLOR DISPLAY —

**FREE!**

Featuring the "8-Ball" TCF-3 aerial and beautifully designed in 3 colors — yellow, orange and black. This display will catch the eye of every customer.

**Display is FREE!**

Just mount an "8-Ball" TCF-3 and set it up on the counter and watch your aerial sales grow.



**Model CD-1**

**A WARD Development to fit every antenna need!**

## WARD ANTENNAS FOR THE HOME

Are vertical, the same as broadcasting antennas, for greatest signal pick-up, finest reception

### HOUSE MAST

4-SECTION, 12-FOOT, COLLAPSIBLE TO 47 INCHES.

FEATURES . . . Easy installation, Universal mounting brackets, Heavy weatherproof cadmium plating, Built-in lightning ar-restor.

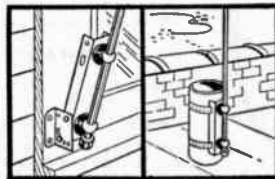
**Model HM-4** . . . . . **List, \$7.45**

Ind. packed — 12 to the master carton.  
Approx. ind. shipping wt. 4 lbs.

Complete Installation  
Fittings Included



60' Lead Wire — Ground Clamp — 4  
Wood Screws — 2 Nail-it-Knobs — 1  
Porcelain Tube — 1 Lead-in Strap — 2  
Soil Pipe Straps.



**WINDOW  
FRAME**

**SOIL  
PIPE**



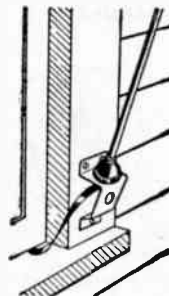
### WINDOW MAST

3-SECTION, 8-FOOT, COLLAPSIBLE TO 42 INCHES.

FEATURES . . . Simple 3-point, 3-minute installation for apartments, homes, office buildings, Two-way mounting bracket, 12-inch lead-in strap, and heavy, weatherproof cadmium plating.

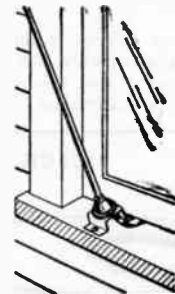
**Model WM-3** . . . . . **List, \$3.25**

Individually packed — 12 to a master carton.  
Approx. ind. shipping weight — 1 lb. 2 oz.



**WINDOW  
SILL  
INSTALLATION**

**WINDOW  
FRAME  
INSTALLATION**



# WARD Magic Wand INDOOR TV ANTENNAS

## MODEL TVI-49

Excellent reception on all channels. Top quality electric insulation. Orients easily in all directions. Heavy base with large surface for mechanical stability. WILL NOT TIP OVER. Telescopic dipole elements.

Contents: Ebony black ceramic base — Two 43" tuneable elements of chrome-plated brass tubing — Stainless steel rod allows no corrosion. Individually packed: six to a master carton. Approximate individual shipping weight: 5 lbs.

List Price ..... \$6.95



# WARD Magic Wand FM ANTENNAS

## FM MODELS

### FM FOLDED DIPOLE

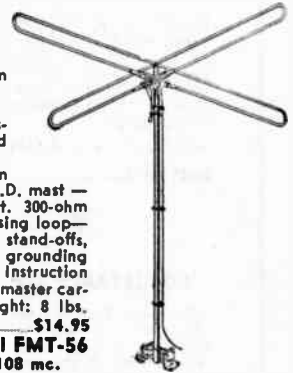
Bi-directional. Matched impedance to 300-ohm line for broad tuning, high signal gain over entire 88-106 mc. band. Adjustable mounting design for greater ease of orienting. Pre-assembly into component parts for quick installation. Contents: Dipole element of 3/8" reinforced aluminum — molded bakelite insulator — 5 ft. 1" O.D. mast and guy wire ring — universal mounting base — conduit clamp — grounding solder lug — Technical Data and Instruction Sheets. Ind. packed: twelve to a master carton. Approx. individ. shipping weight: 5 lbs. List Price ..... \$8.95

Model FM-55 88-108 mc.

### FM FOLDED TURNSTILE

Exceptional high signal gain from ALL DIRECTIONS. Does not require orienting. Packed complete, partially Pre-Assembled components for quick and simple installation. Contents: 3/8" reinforced aluminum folded dipole elements — 5 ft. 1" O.D. mast — molded bakelite insulators — 60 ft. 300-ohm collinear line and 1/4 wave length phasing loop — rubber stand-off pads — 6 plastic stand-offs, guy wire ring and conduit clamp — grounding solder lug — Technical Data and Instruction Sheets. Individually packed: six to a master carton. Approx. individ. shipping weight: 8 lbs. List Price ..... \$14.95

Model FMT-56 88-108 mc.



### FM REFLECTOR KIT — Model FMR-63 88-108 mc.

Combines quickly and easily to make high gain directional array with Model FM-55. Increases gain and eliminates reflections. Most effective when transmitting stations are in same general direction. Maximum energy transfer of signal from antenna to set as result of accurately determined spacing and correct reflector length. — Contents: 3/8" reinforced aluminum reflector element — weather-proofed metal cross arm and brackets plus mounting hardware — Technical Data and Instruction Sheets. Ind. packed: six to a master carton. Approx. individ. shipping weight: 3 lbs. List Price ..... \$5.25

← Reflector for use with Folded Dipole

## TELEVISION AND FM ACCESSORIES

### MAST EXTENSION

Model MEA-60 — For use with Television Models

Five-Foot Vinsynite mast extension to increase height of vertical mast and raise antenna into area of greater signal strength. Should be used also to comply with local codes in keeping antenna above required height. — Contents: 5 ft. 1 1/4" O.D. Vinsynite mast — weather-proofed inside and out — guy wire ring — rubber-canvas laminated stand-offs. — Individually packed: six to a master carton. — Approx. shipping weight: 16 lbs. 4 oz. List Price ..... \$3.25

### MODEL ME-60 MAST EXTENSION FOR USE WITH FM MODELS

5 ft. 1" O.D. Mast Extension weather-proofed inside and out — rubber stand-off pads — guy wire ring — Packed: six to a master carton — Approximate shipping weight: 12 1/2 lbs. List Price ..... \$2.60

### PLASTIC STAND-OFFS

Model SO-144

Unique design holds transmission line completely captive yet cannot pinch line to change impedance. Made of polystyrene to insure minimum loss. Stand-offs are sold in quantities of 144 and shipped in attractive counter display container to increase counter sales. Indiv. packed: 144 to a carton. Approx. shipping weight: 2 lbs. List Price ..... \$14.40

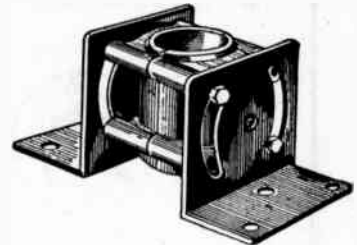


### SELF-SUPPORTING BASE

Model C-14

New, heavy, weather-proofed metal base for sturdy installation on any angle. The self-supporting base eliminates the need for guy wires on most installations. Accommodates 1 1/4" O.D. Mast. Ind. packed: six to a master carton. App. ind. shipping wt.: 1 lb. 7 oz. List Price ..... \$2.45

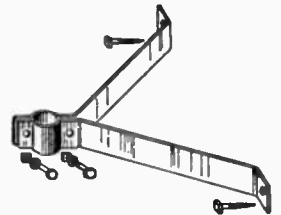
Model C-11: For use with 1" O.D. Mast. List Price ..... \$1.95 Ind. boxed. — App. ind. shipping weight: 1 lb. 7 oz.



### LEAD AND INSULATOR KIT

Model C-15

Contains 60 ft. 300-ohm line with terminals — 6 plastic stand-off insulators — 6 wood screws. Individually packed: six to a master carton. Approximate individual shipping weight: 14 oz. List Price ..... \$3.00



### COLLINEAR TRANSMISSION LINE

Parallel line of 300-ohm impedance insulated with polyethylene for highest quality FM and TV reception. For easy installation, line comes on handy reel. List Price, \$39.00 1,000 ft. Model WR-1000 Approximate individual shipping weight: 18 lbs. Model WR-500 500 ft. List Price, \$19.50 Approximate individual shipping weight: 10 lbs.



### MAST STAND-OFF BRACKET KIT

Two pairs of heavy, cadmium-plated steel stand-off brackets, for 1 1/4" O.D., to extend mast from side of house or parapet for clearance of 7" or larger size for clearance of 14". Complete with all necessary mounting hardware. Model C-16 — For 7" clearance List Price, \$3.25 Individually packed: 6 kits to a master carton. Model C-17 — For 14" clearance List Price \$4.25 Individually packed: 6 kits to a master carton.



# by WARD

## BUILT FOR RIGOROUS SERVICE

### UNIVERSAL SWIVEL MOUNTS

Antennas built for the hardest mobile use. Separate components may be combined to meet any requirements. These rear-mounting Transmitting Antennas are designed for the 25-45 mc. services. Base mounts in such a way as to allow the whip rod to be held vertically regardless of contour of vehicle body.

← SPP-3B

#### SINGLE ROD

Special Alloy Whip Rod of maximum resilience and durability. 84" Single rod for use in the range of 30 to 45 mcs. Non-Corrodng, stainless steel tapered for proper stress distribution. Base Adapter threaded 3/4-24 to permit mounting on SPP-3 Base or SPP-3A Spring.

Individually packed. Approx. weight: 2 lbs.

List Price \_\_\_\_\_ \$11.50

SPP-12 →

#### ADJUSTABLE 2-SECTION ROD

Adjustable Rod. Telescopes from 85" to 103" and is equipped with a locking device that permits removal of the whip rod and replacement at the exact previous length. Heavy wall, hard drawn brass tubing — threaded 3/4-24 to fit either SPP-3 Base or SPP-3A Spring. See SPP-3B for Rod description.

Ind. packed. Approx. weight: 2 lbs. 10 oz.

List Price \_\_\_\_\_ \$22.50

SPP-3

#### SWIVEL BASE

Swivel base for mounting at any desired point. Half balls of cast aluminum tapped 3/4-24 to accept whip rods and shock springs. Insulator of black bakelite — rubber gaskets — steel back-up plate. All screws are Allen Head type with wrenches supplied.

Individually packed. Approx. weight: 3 lbs. 4 oz.

List Price \_\_\_\_\_ \$13.25



SPP-3A

#### SHOCK MOUNTING SPRING

This sturdy spring is used to lessen damage to the whip rod. A flexible lead through the center of the spring maintains constant electrical impedance through the spring assembly. 3/4-24 stud on one end — 3/4-24 tapped hole on opposite end — approximately 6" in height — made of oil tempered wire.

Individually packed. Approx. weight: 2 lbs. 12 oz.

List Price \_\_\_\_\_ \$7.90



#### FENDER MOUNTS

Disappearing type antenna — For Transmitting and Receiving — Designed for rigorous service of Emergency Communications. Non-telescopic construction exactly duplicates standard automotive models in appearance — gives perfect disguise for detective or patrol service. Antenna mounts in fender or cowl — removable whip for quick service or installation.



55" permanent whip eliminates contact troubles . . . Lead take-off accepts standard AN connector. For low or high band services. Used as short 1/4 wave vertical for 25-44 mc. service . . . "J" for 152-162 mc. service. The universal split ball design insures a perfect fit as well as that neat built-in appearance and easy installation.

Lead not included.

#### Model SPP-71

Individually packed.  
Approximate weight: 1 lb. 12 oz.

List Price \_\_\_\_\_ \$22.50

#### MOTORCYCLE MOUNTS

These Antennas are designed for use on motorcycles and are built to withstand the rugged service and high vibration of vehicle. Rod is electrically short but can be used on all frequencies. 40" rod of same material as SPP-3B — 1/4-20 mounting stud in insulator for mounting to motorcycle. Flexible base of rubber to allow movement when rod is bent — Model SPP-6 with safety ring tip — Model SPP-6A with stainless steel ball tip — no lead supplied. Individually packed. Approx. weight: 1 lb.

Model SPP-6 Ring Tip (Illustrated) \_\_\_\_\_ List, \$9.25

Model SPP-6A Ball Tip (Not Shown) \_\_\_\_\_ List, \$9.25

#### ROOF TOP MOUNT

Developed for roof top mountings in 30 to 45 Megacycle range. Advantages of this type of antenna is that directional effects caused by car body shielding of antenna are avoided. Base is designed to be used with the SPP-3B rod which is sold separately. This unit consists of all components of Universal Swivel Mounts except that half-balls are replaced by SPP-3A Spring fastened permanently to insulator. No lead supplied.

Individually packed. Approximate weight: 3 lbs.

Model SPP-26 Base \_\_\_\_\_ List, \$16.50

#### ROOF TOP ANTENNA →

This model is designed for taxicabs, police services, and others using the 140 to 165 Megacycles frequencies. Installed entirely from the outside of vehicle — 12 ft. length of RG-58/U coaxial cable attached permanently to antenna. Whip rod is replaceable.

Individually packed. Approximate weight: 1 lb.

Model SPP-18 \_\_\_\_\_ List, \$6.60





## ANTENNAS For FM and Television

- Maximum electrical efficiency for all channel coverage.
- Mechanical design that assures permanent and trouble-free installations.

### MINUTE MAN SERIES

Can be assembled by 1 Man in 1 Minute!  
A magnificent new series of antennas designed and developed in the Ward antenna laboratory.

- Vinsynite most for strength, durability and maximum protection against corrosion.
- Rotatable guy ring for orientation of antenna after guying.
- Nylon insulators on high band antennas.

### TELEVISION MODELS



**Model**  
**TVH-52**  
174-216  
54-88 mc.

#### UNI-DIRECTIONAL ALL CHANNEL ANTENNA

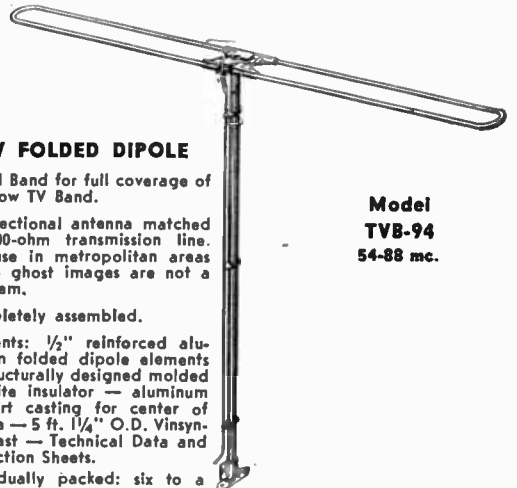
Designed for use in areas where signal from high and low band station transmitters originate from the same general direction.

Specially designed connecting link and element spacing to assure maximum response on all channels.

Contents: 3/8" reinforced aluminum high band folded dipole and 1/2" O.D. aluminum folded dipole with reflector — 1/4" O.D. Perma-tube cross arm with Vinsynite finish — 5 ft. 1/4" O.D. Perma-tube mast with Vinsynite finish. Universal mounting base — bakelite insulator — aluminum element support castings — connecting link — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.  
Approximate individual shipping weight: 9 lbs. 5 oz.

List Price .....\$17.00



**Model**  
**TVB-94**  
54-88 mc.

#### TV FOLDED DIPOLE

Broad Band for full coverage of the Low TV Band.

Bi-directional antenna matched to 300-ohm transmission line. For use in metropolitan areas where ghost images are not a problem.

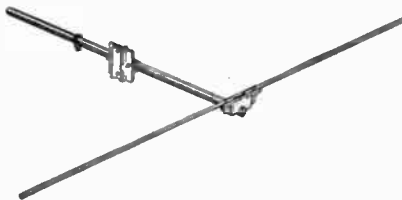
Completely assembled.

Contents: 1/2" reinforced aluminum folded dipole elements — structurally designed molded bakelite insulator — aluminum support casting for center of dipole — 5 ft. 1/4" O.D. Vinsynite mast — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.

Approximate individual shipping weight: 5 lbs. 6 oz.

List Price .....\$8.75



#### TV REFLECTOR KIT

For use with Straight or Folded Dipoles.

Used to give additional forward gain, to eliminate ghosts and to discriminate against interference from the back side of the antenna.

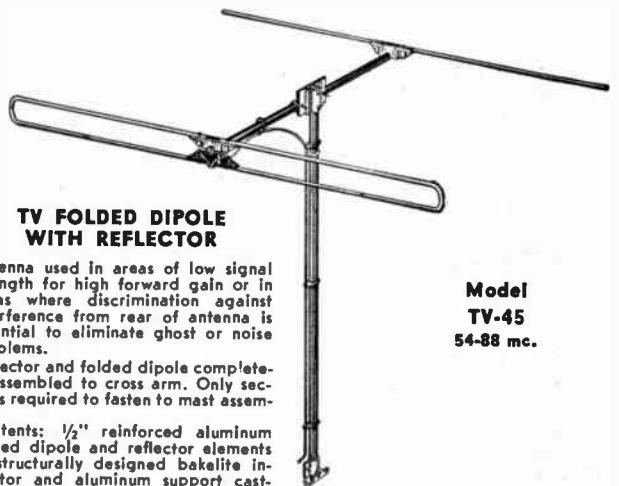
Contents: 1/2" reinforced aluminum elements — aluminum element support casting for center of dipole — 1/4" O.D. Vinsynite cross arm — steel bracket for attaching cross arm to mast — rubber-canvas laminated stand-offs — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.

Approximate individual shipping weight: 4 lbs. 2 oz.

List Price .....\$6.95

**Model TVRA-92**  
54-88 mc.



**Model**  
**TV-45**  
54-88 mc.

#### TV FOLDED DIPOLE WITH REFLECTOR

Antenna used in areas of low signal strength for high forward gain or in areas where discrimination against interference from rear of antenna is essential to eliminate ghost or noise problems.

Reflector and folded dipole completely assembled to cross arm. Only seconds required to fasten to mast assembly.

Contents: 1/2" reinforced aluminum folded dipole and reflector elements — structurally designed bakelite insulator and aluminum support castings for elements — steel brackets for attaching cross arm to mast — 5 ft. 1/4" O.D. Vinsynite metal mast — universal swivel base — grounding solder lug — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.

Approximate individual shipping weight: 8 lbs. 9 oz.

List Price .....\$15.40

# WARD Magic Wand Television Antennas

## MINUTE MAN SERIES



**Model TV-46**  
174-216  
54-88 mc.

### TV HI-LO ANTENNA

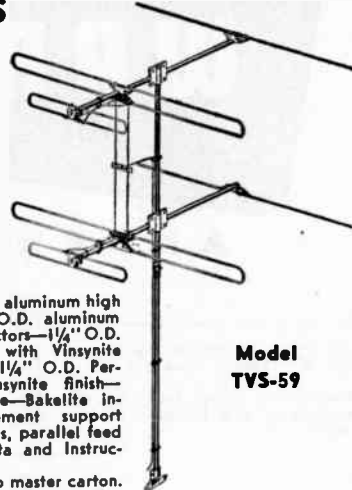
Used when high band and low band stations are on air or are proposed. Provides separate orientation on both high and low antenna. Designed for use in metropolitan areas with high signal strength. Includes scientifically designed transmission line link to prevent interaction of High and Low band antennas. Completely assembled. Contents:  $\frac{1}{2}$ " and  $\frac{3}{8}$ " reinforced aluminum folded dipoles — aluminum support casting for elements — structurally designed bakelite insulator — 5 ft.  $1\frac{1}{4}$ " O.D. Vinsynite mast — grounding solder lug — Technical Data and Instruction Sheets. Individually packed: six to a master carton.

Approximate individual shipping weight: 5 lbs. 14 oz.

List Price **\$11.00**

### UNI-DIRECTIONAL ALL-CHANNEL ANTENNA

Designed for fringe areas where signals from high and low band transmitters originate from the same general direction. Specially designed connecting link, element spacing and bay spacing for maximum response on all channels. Contents:  $\frac{3}{8}$ " reinforced aluminum high band dipoles and  $\frac{1}{2}$ " O.D. aluminum folded dipoles and reflectors —  $1\frac{1}{4}$ " O.D. Permatube cross arms with Vinsynite finish — 2 sections — 5 ft.  $1\frac{1}{4}$ " O.D. Permatube mast with Vinsynite finish — universal mounting base — Bakelite insulators — aluminum element support castings, connecting links, parallel feed assembly — Technical Data and Instruction Sheets. Individ. packed: three to master carton. App. ind. shipping weight: 19 lbs. List Price **\$35.00**



**Model TVS-59**

### TV STACKED ARRAY

Two Low Band assemblies stacked one above the other to produce the extra forward gain needed for good TV reception in remote installations and poor signal locations.

Half wave bay spacing with phasing link scientifically determined for maximum gain on entire band.

Broad Banded to give full coverage on channels 2 through 6.

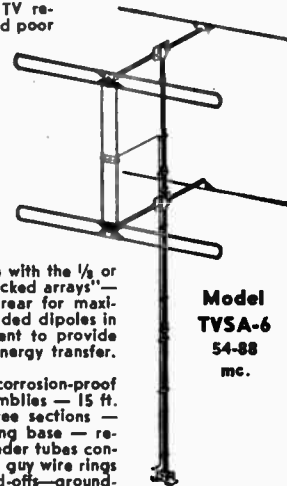
Sturdy design and extra-strong construction assures permanently secure mounting in any weather — correct  $\frac{1}{2}$  wave spacing proven by extensive tests to achieve greater forward gain, much more than with the  $\frac{1}{8}$  or  $\frac{1}{4}$  wave spacing of ordinary "stacked arrays" — elimination of signals from the rear for maximum ghost rejection — use of folded dipoles in scientifically designed arrangement to provide broad response and maximum energy transfer. Completely Pre-Assembled.

Contents: Two  $\frac{1}{2}$ " reinforced corrosion-proof folded dipole and reflector assemblies — 15 ft.  $1\frac{1}{4}$ " O.D. Vinsynite mast in three sections — all angle self-supporting mounting base — reinforced aluminum telescopic feeder tubes connecting the two bays — rotatable guy wire rings — rubber-canvas laminated stand-offs — grounding solder lug — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.

Approximate individual shipping weight: 20 lbs. 4 oz.

List Price **\$42.50**



**Model TVSA-6**  
54-88 mc.



**Model TVHA-9**  
54-88  
174-216 mc.

### ALL CHANNEL ANTENNA

Designed for use when high band and low band stations are on air or are proposed. Includes scientifically designed transmission line link to prevent interaction of high and low antennas. Eliminates necessity for individual antennas cut for each channel.

High and low band bays can be oriented independently to receive stations which are not in the same direction. Each bay adjustable in any direction to give maximum desired signal. Contents:  $\frac{3}{8}$ " reinforced aluminum high band folded dipole with reflector and cross arms and  $\frac{1}{2}$ " O.D. Low band folded dipole with reflector and cross arms — two 5 ft.  $1\frac{1}{4}$ " O.D. Vinsynite mast — universal mounting base — rotatable guy wire ring — bakelite insulator — aluminum element support castings — connecting links — Technical Data and Instruction Sheets.

Individually packed: six to a master carton. Approx. individual shipping weight: 12 lbs. List Price **\$21.00**

### ALL CHANNEL STACKED ARRAY

Combination Low Band stacked folded dipoles and reflectors and High Band stacked folded dipoles and reflectors for complete all channel coverage. Specifically designed for areas on the fringe of both high and low band stations.

Half wave bay spacing with phasing link scientifically determined for maximum gain on entire band. Ingenious design allows High Band section to be oriented independently of Low Band section.

Sturdy construction insures permanent installation. Correct  $\frac{1}{2}$  wave spacing proven by extensive tests to achieve greater forward gain than ordinary stacked arrays. Eliminates signals from the rear for maximum ghost rejection. Broad banded for maximum pick up on all channels. Use of folded dipoles in scientifically designed arrangement to provide broad response and maximum energy transfer. Completely Pre-Assembled.

Contents: Two  $\frac{3}{8}$ " reinforced aluminum high band assemblies and two  $\frac{1}{2}$ " reinforced aluminum low band assemblies — rotatable guy wire rings — rubber-canvas laminated stand-offs pads — grounding solder lug — all angle self-supporting mounting base — Technical Data and Instruction Sheets.

Individually packed: six to a master carton.

Approximate individual shipping weight: 21 lbs. 12 oz.

List Price **\$49.50**

### TV HIGH BAND STACKED ARRAY

High Band Stacked folded dipole. Can be used as a stacked high band antenna by itself or as adapter to convert low band stacked array to all channel stacked array.

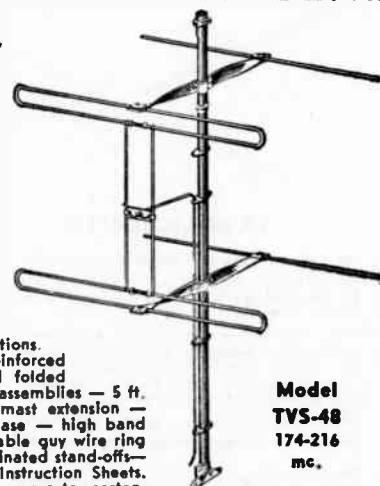
Half wave bay spacing with phasing link scientifically determined for maximum gain on entire band.

Superb antenna for use in fringe areas having high band stations.

Contents: Two  $\frac{3}{8}$ " reinforced aluminum high band folded dipole and reflector assemblies — 5 ft.  $1\frac{1}{4}$ " O.D. Vinsynite mast extension — universal mounting base — high band phasing link — rotatable guy wire ring — rubber-canvas laminated stand-offs — Technical Data and Instruction Sheets.

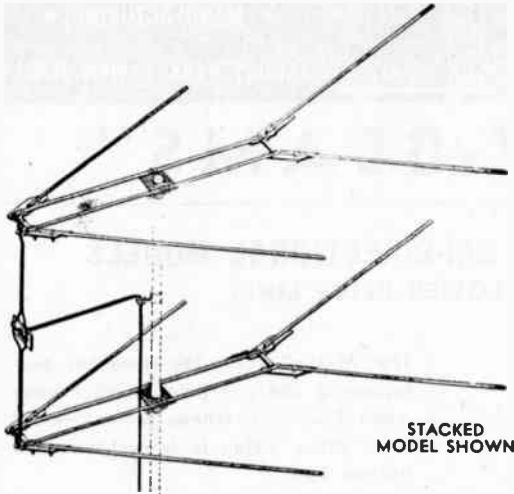
Individ. packed: six to a master carton. Approximate individual shipping weight: 5 lbs. 2 oz.

List Price **\$13.50**



**Model TVS-48**  
174-216 mc.

# WARD Magic Wand Television Antennas



STACKED MODEL SHOWN

## FLYING ARROW

with Minute Man Construction

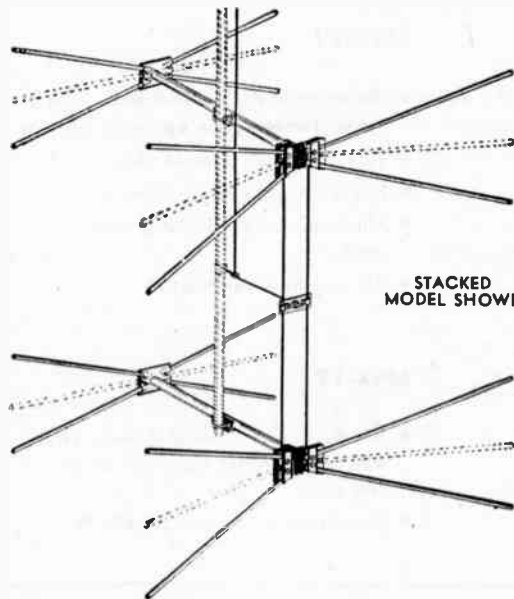
ALL CHANNEL Television Antenna with exceptional high gain throughout entire high band.

Recommended particularly for areas where reception on high band stations constitute a problem.

- PIN POINT DIRECTIVITY  
concentrates energy, eliminating noise and interference.
- SUPERB MATCH TO 300 OHM LINE  
resulting in Maximum energy transfer.
- ONLY FEW SECOND ASSEMBLY TIME REQUIRED.

Single Bay ..... Model TV-72 less mast List \$7.95

Stacked Array ..... Model TVS-75 less mast includes stacking harness List \$15.95



STACKED MODEL SHOWN

## WARD AIRFLIGHT CONICALS

UNIQUE ELEMENT SPACING AND ANGULAR ADJUSTMENTS ELIMINATES PATTERN BREAK-UP. NO FALLING OFF OF RESPONSE ON HIGH BAND.

- Scientifically Determined Impedance Matching Characteristics
- Optimum Reception on Both TV Bands
- Rigid Mechanical Construction takes up to 1 3/8" O.D. Mast
- New Molded Universal Insulator Permits any Desired Element Arrangement.

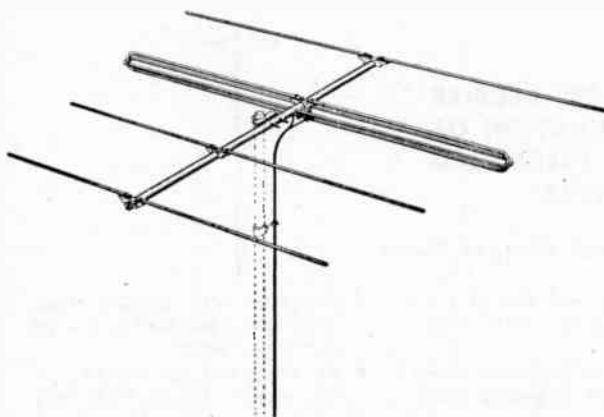
Single Bay ..... Model TV-65 less mast List \$11.95

Stacked Array ..... Model TV-69 less mast includes feeder wire assembly List \$23.75

Stacking Harness Kits for extreme gain in super fringe areas.

Models TV-71 Makes 2 single bays into a stacked array.

TV-77 Makes 2 two bay stacked arrays into a 4 bay stacked array.



## WARD YAGI Antennas

with Minute Man Construction

### INTERLINKING FOLDED DIPOLE PRINCIPLE

Impedance transformer built-in as integral part of unit to step up impedance.

- VERY HIGH FRONT TO BACK RATIO
- NO CO-CHANNEL INTERFERENCE
- PIN POINT DIRECTIVITY
- MINIMUM STANDING WAVE RATIO GUARANTEES MAXIMUM ENERGY TRANSFER
- PERFECT MATCH TO 300 OHM LINE
- RUGGED CONSTRUCTION—uses Jones and Laughlin Permatube cross arm for maximum horizontal torsional rigidity.
- COMPLETELY PREASSEMBLED AT THE FACTORY
- THE PERFECT ANTENNA FOR FRINGE AND SUPER FRINGE AREAS.

TVY-2 and 3 ..... List \$24.95  
Models TVY-4, 5 and 6 ..... List 21.50  
TVY-7 thru 13 ..... List 12.95

# THE WARD PRODUCTS CORPORATION

ANTENNA  
DESIGN ENGINEERS  
SINCE 1921

RUTHERFORD AVENUE ON ROUTE 35

*telrex*

INC.

ASBURY PARK 1, NEW JERSEY

ANTENNA

- DEVELOPMENT •
- MANUFACTURING •

## "CONICAL-V-BEAMS"

### TECHNICAL NOTES

Telrex "Conical-V-Beams" technically and practically assume characteristics similar to solid cones, giving broad band and high gain response with full audio and video band pass over the entire television frequency range.

★ ★ ★

Nominal center impedance is 150 ohms and non-varying due to conical configuration. The dipoles are tilted forward presenting a "V" to the incoming wave, forcing the forward lobe to remain in-line irrespective of channel being received. Thus the Telrex dipole is an effective  $\frac{1}{2}$  wave element on channel 2, increasing to  $\frac{3}{4}$  wavelength on channel 3, and increasing in effective "V" beam action to channel 13 where it becomes a full wavelength on each leg with the maximum receiving lobe being in line. The reflectors are effective at all frequencies with a front to back ratio of better than 12 DB on all frequencies.

★ ★ ★

Unlike other methods of covering both bands, Telrex antennas do not introduce phase shift or favor one band versus the other and only one transmission line is used. Where stations are displaced beyond the normal acceptance lobe of a single "Conical-V-Beam" or array, the DO-X (Duo Orienting) array is recommended. This permits separate orientation on two groups of stations at any angle. Only one transmission line is needed due to the unique Telrex coupling line and phasing loop.

★ ★ ★

When the stations are within a 5 to 15 degree sector, the Telrex antenna used for maximum efficiency at low frequencies becomes a much more efficient antenna on the high frequencies than a separate cut-to-frequency stacked antenna.

★ ★ ★

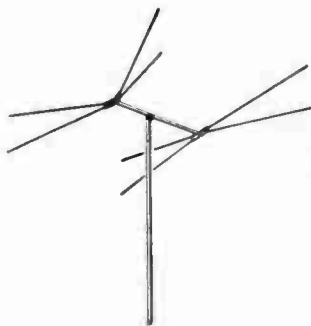
The 150 ohm non-varying center impedance makes it possible to use any of the commercially available transmission lines from 75-ohm coaxial, to 300-ohm ribbon, with a standing wave ratio never exceeding 1.6 to 1 on any channel. Standing waves cause excessive phase-shift, blurred pictures, multiple images and decreased sensitivity.

★ ★ ★

You are invited to consult our engineering staff on any unusual antenna problems.

PATENTS PENDING

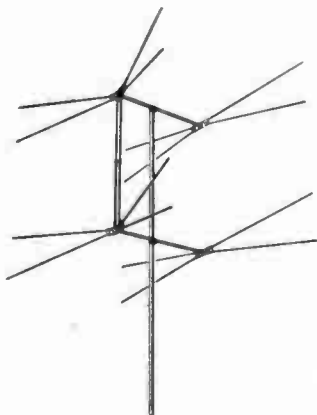
### "METRO" UNI-DIRECTIONAL MODELS (LOWER PRICE LINE)



The "Metro" offers the same fine performance and construction that have made TELREX antennas famous — and at a price which is lower than the DeLuxe line.

#### M2X-TV

- Uni-directional Conical-V-Beam with reflector for reception up to 50 miles.
- Very Hi-Signal to noise ratio.
- Full efficiency on all channels.
- Minimum cost for Telrex quality product.
- All aluminum construction.

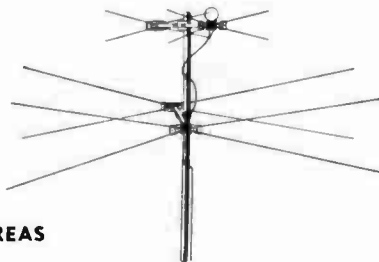


#### M4X-TV

- Uni-directional Conical-V-Beam array with reflectors for reception up to 100 miles.
- Specifications — same as M2X-TV.

### DUO-ORIENTING "CONICAL-V-BEAM"

DESIGNED TO RECEIVE  
ANY COMBINATION OF  
STATIONS DISPLACED  
BY ANY ANGLE:



#### SUGGESTED FOR PRIMARY AREAS

- Duo-orienting, uni-directional "Conical-V-Beams" with reflectors.
- Top bay for hi frequency—lower bay for Hi-low frequency reception.
- Complete with phasing loop, coupling line and solid hi-strength aluminum elements.
- An all-channel duo-orienting array, superior to any Hi-lo type.

'SEE THE DIFFERENCE' with TELREX "Conical-V-Beams"

ANTENNA  
DESIGN ENGINEERS  
SINCE 1921

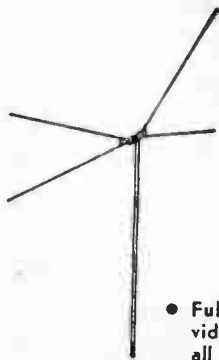
RUTHERFORD AVENUE ON ROUTE 35

*telrex* INC.

ANTENNA  
• DEVELOPMENT •  
• MANUFACTURING •  
ASBURY PARK 1, NEW JERSEY

# "CONICAL-V-BEAMS"

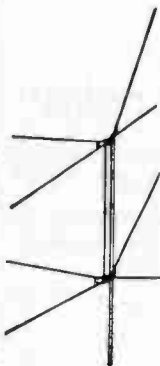
## BI-DIRECTIONAL "CONICAL-V-BEAMS"



### IX-BD

Perfect for all metropolitan & suburban installations up to 20 miles from the transmitters.

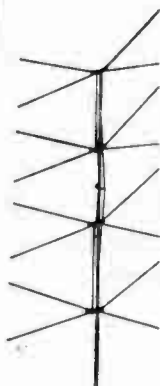
- Full audio and video response on all channels.
- Hi-gain, high signal to noise ratio.
- Ghost free reception.



### 2X-BD

Bi-Directional 2-Bay "Conical-V-Beam" for primary and secondary areas up to 40 miles from station.

- Outperforms any combination of bi-directional antennae at low cost.
- Perfect for use near airports — concentration of vertical lobe minimizes airplane picture flutter.



### 4X-BD

Bi-Directional 4-Bay "Conical-V-Beam" for the utmost in bi-directional performance up to 60 miles.

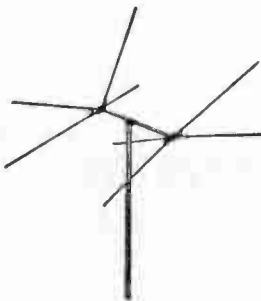
- Extremely low vertical lobe.

## DELUXE UNI-DIRECTIONAL MODELS

Telrex "Conical-V-Beams" give TOP PERFORMANCE on all TV channels and the complete FM band.

Telrex antennas are noted for superior gain characteristics and exceptionally high signal to noise ratio.

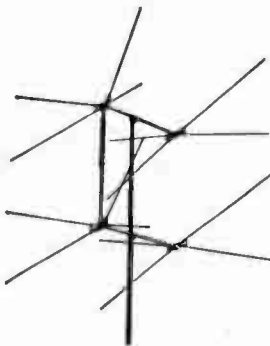
Telrex design insures the best TV picture which means greater customer satisfaction, increased TV sales and profits.



### 2X-TV

Uni-directional "Conical-V-Beam" with reflector for distance up to 45 miles.

- Deluxe construction and materials throughout.
- Stainless steel screws and nuts, tempered dural elements.

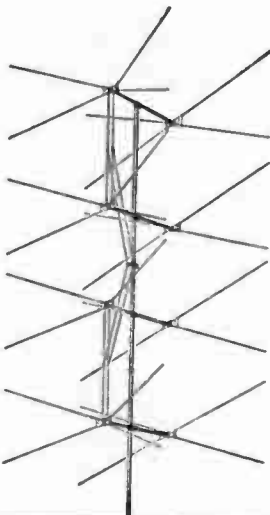


### 4X-TV

#### AMERICA'S OUTSTANDING TELEVISION BEAM

Uni-directional 2-Bay Conical-V-Beam with reflectors for distances up to 100 miles.

- In less than 4 years the Telrex 4X-TV has become the STANDARD OF COMPARISON.
- Deluxe construction and materials with stainless steel screws and nuts, tempered dural elements.
- The best money can buy.



### 8X-TV

#### THE ULTIMATE IN ARRAYS FOR LONG DISTANCE TV RECEPTION

Outperforms any antenna or combination of cut to frequency antennas. Unequaled for long distance reception up to 200 miles.

- TOP PERFORMANCE all channels, constructed of finest materials.
- Uni-directional super-gain 4 bay Conical-V-Beams.
- The 8X-TV will produce a usable signal wherever TV reception is practical.

'SEE THE DIFFERENCE' with TELREX "Conical-V-Beams"



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DESIGN ENGINEERS  
SINCE 1921

RUTHERFORD AVENUE ON ROUTE 35

*telrex* INC.

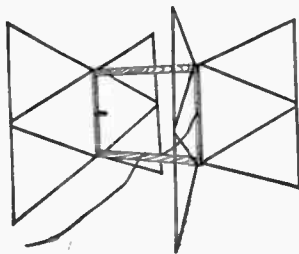
ANTENNA  
• DEVELOPMENT •  
• MANUFACTURING •  
ASBURY PARK 1, NEW JERSEY

# "CONICAL-V-BEAMS"

## ATTIC-V-BEAM

**ELIMINATES OUTDOOR INSTALLATIONS IN MANY AREAS!**

Longest range indoor antenna ever devised. True "Conical-V-Beam" design for top indoor performance up to 45 miles.



Ideal for any home with attic, garage or utility space the "Attic-V-Beam" is compact, lightweight and self-supporting.

- Eliminates expensive installations.
- Makes outdoor antennas unnecessary in many areas.
- Available in 3 models, for nearly every installation requirement:

**AT-2BD** — Stacked bi-directional array for reception up to 35 miles.

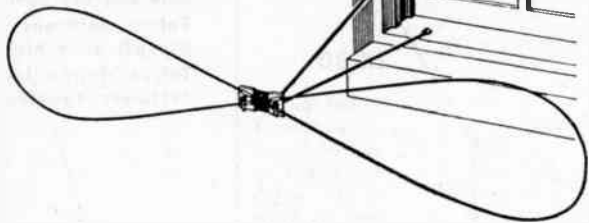
**AT-2X** — Uni-directional array for reception up to 25 miles.

**AT-4X** — Stacked uni-directional array for distances up to 45 miles. (Reports of satisfactory reception up to 80 miles have been received.)

## SUPEREX WINDOW ANTENNA

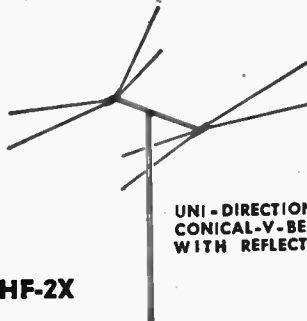
**Designed for Primary Signal Areas**

Easily mounted on any window sill. Can also be mounted indoors on walls, behind furniture, in closets, etc.



## HI-FREQUENCY "CONICAL-V-BEAMS"

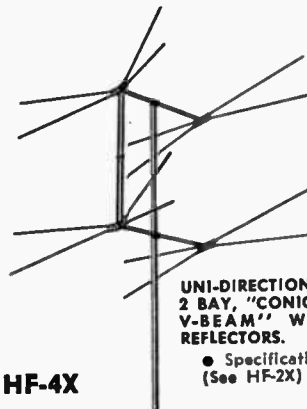
Engineered specifically for areas served only by Hi-Frequency channels or where separate Hi-Low frequency orientation is required.



UNI-DIRECTIONAL CONICAL-V-BEAM WITH REFLECTOR.

### HF-2X

- High gain channels 7-13.
- Optimum front to back ratio for reflection of unwanted signals and maximum signal to noise ratio.
- Broad inline lobe simplifies orientation and minimizes signal flutter.



UNI-DIRECTIONAL 2 BAY, "CONICAL-V-BEAM" WITH REFLECTORS.

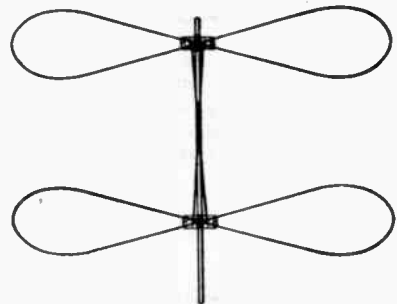
- Specification. (See HF-2X)

### HF-4X

- Ideal where roof antennas are prohibited.
- Highly concentrated reception lobes make it easier to minimize ghosts due to reflections.
- Effective, inexpensive, inconspicuous.
- Top performance at low cost in high signal areas.

## "CLOVER-V-BEAM"

Transposed-stacked, bi-directional array produces high gain on all channels. Designed to give outstanding reception in primary and secondary areas . . . at LOW COST!



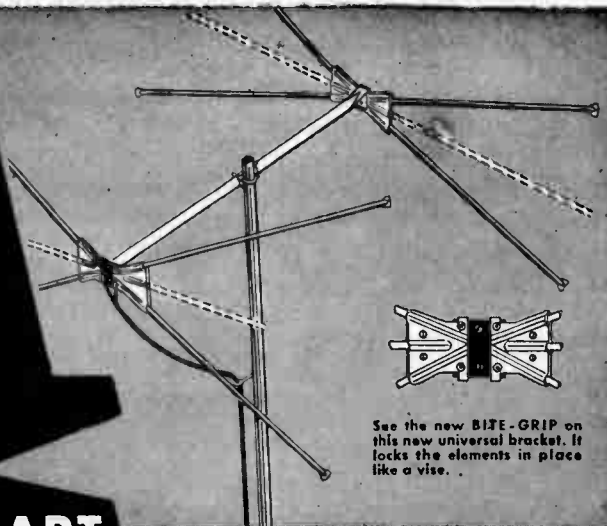
### 2BDS

- Indoor or Outdoor
- Exceptional Performance
- Durable Construction
- Light Weight
- Speedy Assembly
- Quick Installation

'SEE THE DIFFERENCE' with TELREX "Conical-V-Beams"



THE  
**COMPLETE**  
**QUALITY LINE**  
at Budget Prices



See the new BITE-GRIP on this new universal bracket. It locks the elements in place like a vise.

**RADIART**  
**TV Antennas**

**RADIART**  
**TELE-**  
**ROTOR**

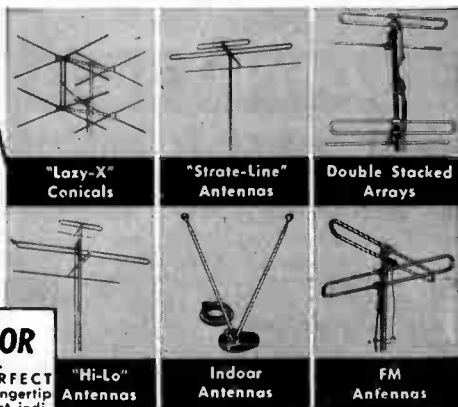
POWER To  
Rotote TV Antennas  
Under Even The Most  
Adverse Conditions

- ★ Streamlined WEATHER-PROOF Housing! Keeps Out Water, Snow and Ice.
- ★ Powerful heavy duty Motor that Reverses Instantly! Handles 150 pound loads Easily!
- ★ Heavy Duty Precision STEEL Gears For Years and Years of Wear!
- ★ Twelve Heavy Duty Ball Bearings in Two 6 1/2" n. diameter Races for Smooth, Easy Rotation.

**THERE IS A RADIART ANTENNA... for EVERY Condition... all of the highest quality... at the lowest possible prices!**

RADIART was among the first to build quality TV and FM antennas and has pioneered many advance ideas that have improved TV reception! Recognizing that there is a SPECIFIC TYPE that works best under certain conditions... RADIART has a COMPLETE line... all at popular prices! Jobbers recognize... and SERVICEMEN know... that what they need is RADIART... to do the job best... because RADIART has everything!

Radiart Has a Complete Variety of Models Within These Basic Classifications:



**RADIART TELE-ROTOR CONTROL**  
... with the PERFECT PATTERN dial... fingertip control with instant indication of antenna position shown on the illuminated two-tone face.

- Available in the following models:
- **TR-1** ... rotator and Control Unit with end of rotation light (uses 4 wire Cable) **\$37.45**
  - **TR-2** ... Compass Control Rotator with illuminated "Perfect Pattern" dial (uses 8 wire Cable) **\$44.95**

• ATX-8 Special 8 Conductor Cable... per ft. - 10c

\* You Can't Beat a RADIART ANTENNA on a TELE-ROTOR... It's TOPSI



IT'S RIGHT WHEN IT'S RADIART

THE **RADIART** CORPORATION  
CLEVELAND 2, OHIO



- ROTATORS
- VIBRATORS
- AUTO AERIALS
- TV ANTENNAS
- POWER SUPPLIES

# RCA ELECTRONIC COMPONENTS



## TELEVISION ANTENNAS

**COMPLETELY NEW DESIGN — BUILT TO LAST**  
**RCA 12-CHANNEL TELEVISION ANTENNA —**  
**TYPE 204A1**

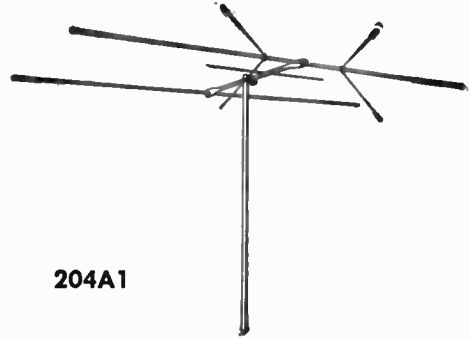
**BASED UPON YEARS OF FIELD EXPERIENCE**

- Easily Assembled
- Ruggedly Constructed
- Uni-Directional

Here's an RCA "Leader" to meet the majority of your everyday antenna needs. Engineered and developed by RCA for plus-value service, RCA-204A1 is intended for use in most receiver locations where both high and low-frequency stations are in the same general direction. Unique RCA "V" attachments provide uniform directional characteristics for all 12 channels.

RCA-204A1 12-Channel Television Antenna is simple in design and appearance. Sturdily built of aluminum, it will withstand high winds, sleet, and ice. Designed for use with 300-ohm transmission line, the 204A1 rates "A" for antenna achievement:—for over-all performance and unusually flat response over each of the two television bands. It can be readily combined with any of the RCA Stacking Kits for fringe or other difficult reception areas.

Supplied with all necessary hardware and sturdy 5 ft x 1 1/4" aluminum mast which may easily be extended by addition of RCA-207A1 antenna mast sections. Completely illustrated instructions for installations are included.



204A1

## THE RCA REVERSIBLE-BEAM TV ANTENNA ARRAY — TYPE 212A1

**For Locations with Co-channel Interference**

The RCA Reversible-Beam TV Antenna Array receives signals from only one direction at a time; eliminates co-channel interference where stations are approximately 180° apart. It also eliminates adjacent-channel interference where the receiver lacks selectivity. RCA-developed "V" attachments provide uniform directional characteristics for all twelve channels. A high overall front-to-back ratio is achieved through the use of driven elements, instead of parasitic elements. This design also makes possible the unique feature of lobe switching.

Sturdily built throughout of high-quality aluminum, the RCA Reversible-Beam Antenna consists of an array of four eight-foot dipoles in the form of a square. A dual transmission line connects the horizontal and vertical dipoles to an attractively packaged duplexing network located at the rear of the receiver. By the mere flick of a switch on the diplexer, antenna directivity can be reversed.



212A1

## ANTENNA ACCESSORIES

### Bright Picture Transmission Line

Especially designed for Television and FM. Special chemical-resistant plastic finish insures continued flexibility even in extreme heat or cold. Ultralow loss—less than 0.8 db per 100' at 50 Mc; less than 1.2 db per 100' at 100 Mc. 4.5  $\mu$ f per foot capacitance. Propagation velocity 83%. Extra strong—supports a mile of its own weight (75 lbs.) before breaking. Stock No. 201A1. Sugg'd List Price: \$41.50 per 1000'.

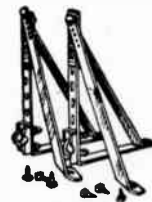


201A1

### Antenna Mounting Brackets

Readily adjustable to permit mounting on any roof—regardless of overhang. Can be attached to brick, stone or wood. Entire bracket is plated with bright zinc, preventing rusting and subsequent staining of building surfaces. Special angular supports eliminate sagging. Stock No. 227A1. Sugg'd List Price: \$6.25 per pair.

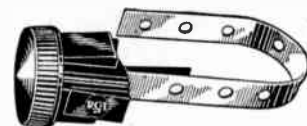
227A1



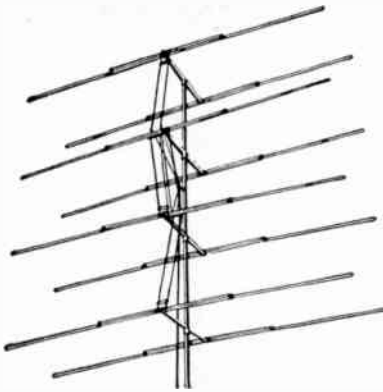
### Twin-Lead Lightning Arrester

For use with FM and TV antennas. Easy to install—cutting or stripping of transmission line is unnecessary. Fits any 1/2"-2" pipe. Continually dissipates static surges. Does not unbalance line. Brown plastic case. Stock No. 206X1. Sugg'd List Price: \$1.10.

206X1



All prices in effect 5/1/50.



**MODEL RD-13A**

**THE SUPER — MODEL RD-13A**

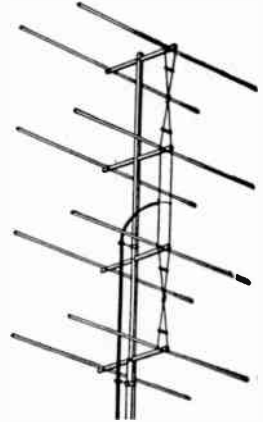
Holds every record for long distance reception. Consists of eight antennas in one, mounted on the same structure, each picking up a signal and adjusted so that each "beams" and reinforces the other. Each has 167 feet of 61ST Aluminum tubing and is manufactured according to the highest standards.

List Price \$129.50

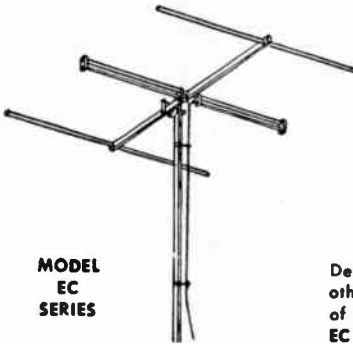
**THE CHALLENGER — MODEL HL SERIES**

Especially designed for both high and low channel reception. Cut for any particular high channel — also a fine performer on low channels. It is the lowest priced four bay antenna available and matches standard 300 ohm line. The ultimate in high channel reception.

List Price \$38.95



**MODEL HL SERIES**



**MODEL EC SERIES**

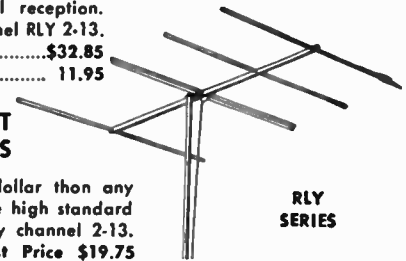
**THE YAGI MODEL RLY SERIES**

Heavy duty construction of the RLY series (61ST Duraluminum) insures permanent installation. Overwhelmingly accepted as the standard of comparison for single channel reception. Supplied singly or stacked for each television channel RLY 2-13.

Low channel (less mast) .....\$32.85  
High channel (less mast) ..... 11.95

**ECONOMY LINE THREE ELEMENT BEAM — MODEL EC SERIES**

Designed for economy. Affords more DB gain per dollar than any other antenna commercially available — maintains the high standard of quality that VEE-D-X antennas enjoy — cut for any channel 2-13. EC 2 to 6.....List Price \$19.75  
EC 7 to 13..... 8.50

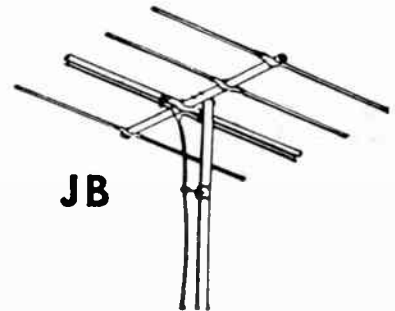


**RLY SERIES**

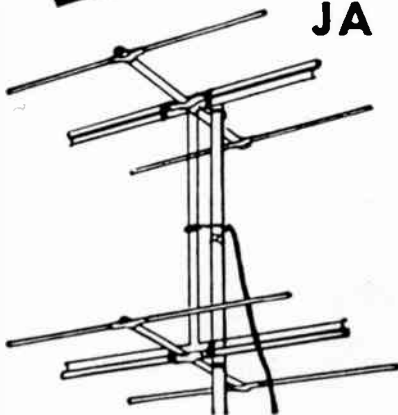
**Low Priced YAGI**

**MODEL J SERIES**

Transformer ratio of stepped-up driven element provides perfect match to 300 ohm line. Lowest standing wave ratio insures maximum transfer of signal. High front to back ratio prevents co-channel interference. Sharp horizontal pattern helps reject unwanted interference of all types. Extra high forward gain makes this the ideal antenna for single channel fringe reception. Not designed to replace the famous heavy-duty RLY and EC series.



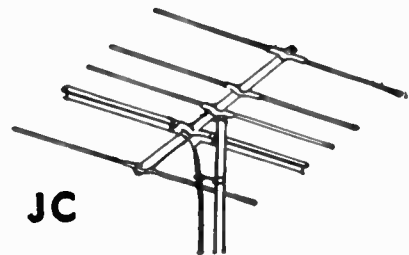
**JB**



**JA**

	List Price
JA 2-6 3-element Yagi .....	\$17.35
JA 7-13 3-element Yagi .....	12.50
JB 2-6 4-element Yagi .....	13.20
JB 7-13 4-element Yagi .....	6.95
JC 2-6 5-element Yagi .....	14.60
JC 7-13 5-element Yagi .....	7.95

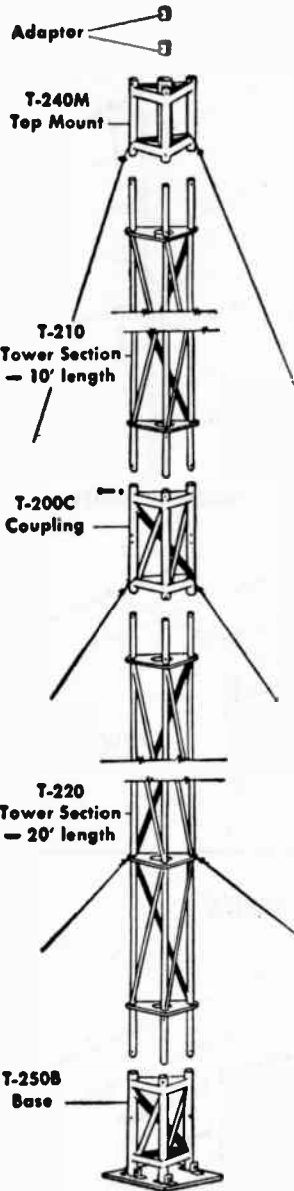
(All prices less mast)



**JC**

*La Pointe - Plascomold Corporation*  
**UNIONVILLE, CONNECTICUT**

# PACKAGED TOWER ASSEMBLIES



## GUYED TYPE

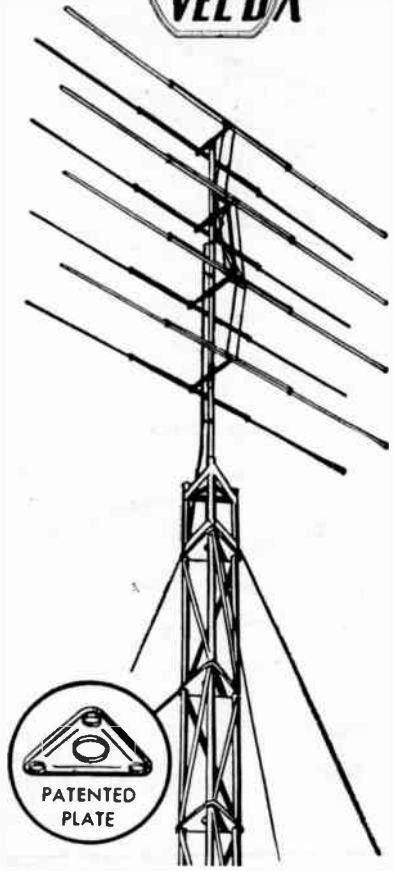
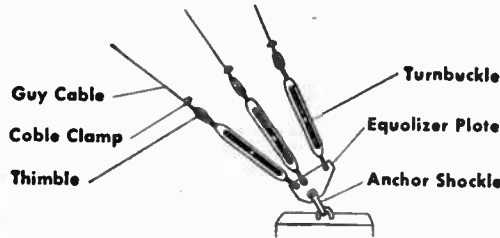
For fringe area installations where it is difficult to obtain a satisfactory signal to noise ratio, the VEE-D-X sectional tower is the practical answer. The low cost VEE-D-X tower may be used at heights from 10 to 140 feet. In addition to being ideally suited for television, it has many other uses, such as for supporting police, fire, utility, FM, and omoteur transmitting and receiving antennos. It has been corefully and soundly engineered ond has a higher safety factor than any other in its price class.

(Prices on request)

## SEMI-GUYED TYPE

For 30', 40' and 50' towers, VEE-D-X offers a self supporting (semi-guyed) tower, which only requires guying of a height of ten feet and a maximum of 6 feet from the base. The tower is ovailoble as a complete packaged assembly for either the 30', 40', or 50' heights. The RD-13A antenna should not be used above 40' heights on the semi-guyed type of tower. Refer to Ports Price List.

(Prices on request)



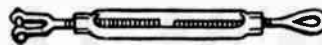
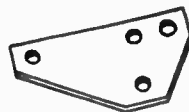
## TOWER ACCESSORIES

### EQUALIZER PLATE

Heavy Galvanized steel. Will take 3 turnbuckles ond on anchor shackle.

List price \$3.00

TW-15 3-Guy Equalizer Plate



### HEAVY DUTY TURNBUCKLE

Made from forged steel, galvanized to prevent rust. Jaw ond eye type 1/2" x 6".

List price \$3.40

TW-12 Turnbuckle

### ANCHOR SHACKLE

For use with Equalizer plate - Galvanized to prevent rusting.

List price \$2.50

TW-20 Anchor Shackle



## MODEL SW-1 ANTENNA SWITCH

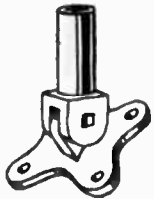
Ideal as a means of selecting a desired antenna from a multiple stack, or switching a single antenna for receiver demonstration. Will handle up to three separate antennas or sets.

List Price \$4.95



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UNIONVILLE, CONNECTICUT

# MOUNTS AND MOUNTING ACCESSORIES



## SWIVEL BASE

For flat or peaked roofs. Corrosion resistant marine aluminum castings. Accommodates 1"-1 3/8" OD masting on inside of hinge and 2 1/4" OD and up on the outside.

Part No. MO-1 Base.....List price \$6.75

## SIDEWALL SUPPORT BRACKET

Used in conjunction with all angle mounts for sidewall mounting. Eliminates guys in some installations.

### FOR 1" AND 1 1/8" OD MASTING

MO-15	Sidewall support bracket (Offset 6").....	List price \$2.65
MO-1512	Sidewall support bracket (Offset 12").....	3.00
MO-1518	Sidewall support bracket (Offset 18").....	3.35
MO-1524	Sidewall support bracket (Offset 24").....	3.70

### FOR 1 1/4" AND 1 3/8" OD MASTING

MO-16	Sidewall support bracket (Offset 6").....	List price \$2.75
MO-1612	Sidewall support bracket (Offset 12").....	3.10
MO-1618	Sidewall support bracket (Offset 18").....	3.45
MO-1624	Sidewall support bracket (Offset 24").....	3.80

## ALL ANGLE MOUNT

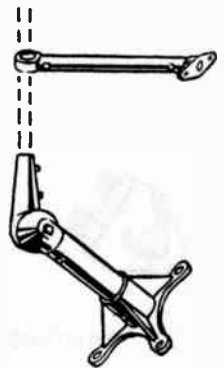
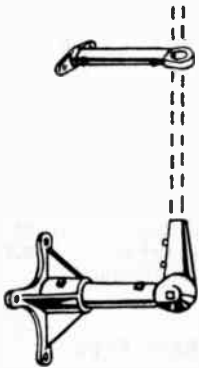
For sidewall mounting — for flat or peaked roofs. Corrosion resistant marine aluminum castings. Accommodates 1" to 1 3/8" OD masting. Offset to clear overhang of eaves.

### FOR 1" AND 1 1/8" MASTING

MO-10	All Angle mount (Offset 6").....	List price \$7.50
MO-1012	All Angle mount (Offset 12").....	8.10
MO-1018	All Angle mount (Offset 18").....	8.70
MO-1024	All Angle mount (Offset 24").....	9.30

### FOR 1 1/4" AND 1 3/8" MASTING

MO-11	All Angle mount (Offset 6").....	List price \$8.25
MO-1112	All Angle mount (Offset 12").....	8.85
MO-1118	All Angle mount (Offset 18").....	9.45
MO-1124	All Angle mount (Offset 24").....	10.00



## MAST ACCESSORIES

### GUY RINGS AND COLLARS

Cost from Corrosion resistant marine Aluminum. Full floating type permitting manual rotation of mast.

MA-1	2 1/4" Guy ring.....	List price \$2.35	MA-100	1 3/8" Guy ring.....	List price \$ .60
MA-10	2 1/2" Guy ring.....	2.75	MA-110	1 1/2" Guy ring.....	.55
MA-2	2 1/4" Guy ring collar	1.90	MA-22	1 1/8" Guy ring collar	.60
MA-11	2 1/2" Guy ring collar	1.90	MA-101	1 3/8" Guy ring collar	.70
MA-21	1 1/8" Guy ring.....	.40	MA-111	1 1/4" Guy ring collar	.65



### SPLIT GUY RINGS

Cast from Corrosion resistant marine aluminum. Full floating type.

MA-4	2 1/4" Split guy ring.....	List price \$2.95
MA-13	2 1/2" Split guy ring.....	2.95

Note: Use with MA-2 and MA-11 collars respectively.



### STAND-OFF INSULATORS



7" Twin



3"

Straps to antenna masting up to 2 1/2" OD.

SO-1	Stand-off (3" Clamp type) .....	List price \$ .19 ea.
SO-2	Stand-off (7" Clamp type) .....	.25 ea.
SO-3	Stand-off (7" Twin Clamp type)	.30 ea.

(Packed in boxes of 100 each)

### TURNBUCKLES

Cast from Corrosion resistant marine aluminum. Lightweight, extremely rugged.

MA-30	3" Turnbuckle.....	List price \$ .23 ea.
MA-31	6" Turnbuckle.....	.30 ea.

(Packed in boxes of 12 each)



### FLEXIBLE PLASTIC TUBING

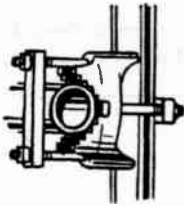
Protects transmission line where chafing and wear are apt to occur. Available 100 foot rolls.

TA-4	Plastic Tubing.....	List price \$1.20
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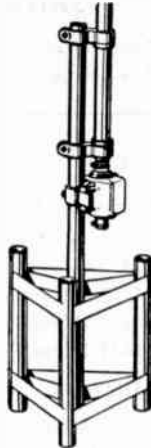
## MAST ACCESSORIES



### VEE TYPE CLAMP

Accommodates 1 1/8"-2" OD tubing. Ideal means of supporting tubing at right angles.

CL-10 Vee Type Clamp List price \$1.50

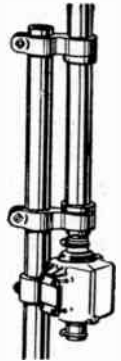


### ADAPTOR FOR ALLIANCE ROTATOR

Adapts the Alliance Rotator to the large arrays having 2" OD masts — takes the thrust of the antenna and prevents damage to the rotator.

TW-120 Rotator Adaptor (For use on VEE-D-X Sectional towers) — contains T-428 M top mount with 2 1/4" OD x 28" extended portion and MA-120 Rotator Adaptor. ....List price \$42.50

MA-120 Rotator Adaptor (For use on 2 1/4" OD masts).....List price \$29.95



## MISCELLANEOUS

### THIMBLES AND CABLE CLAMPS



MA-40 THIMBLE (For 1/8" Cable).....\$12.00/C  
MA-41 THIMBLE (For 1/4" Cable)..... 14.00/C

List price



MA-50 Cable Clamp (For 1/8" Cable).....\$13.00/C  
MA-51 Cable Clamp (For 1/4" Cable)..... 30.00/C  
(Packed in boxes of 100 each)

List price

### TRANSMISSION LINE



Recommended where low line loss is desired.

TA-1 300 ohm transmission line (Standard) .....List price \$28.75/M

TA-2 300 ohm transmission line (Heavy Duty) .....List price \$55.00/M

TA-3 200 ohm transmission line (X-200-A Extra Heavy Duty, Attenuation .6DB per 100 feet at 30 mc) .....List price \$350.00/M

### GUY CABLE



Seven strand — fabricated with six steel wire strands wound around a central steel strand. Extra heavy duty.

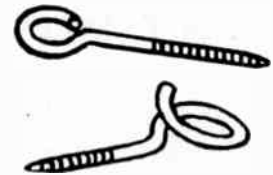
MA-60 1/4" Guy Cable.....List price \$19.65/M

MA-61 1/2" Guy Cable..... 34.55/M

MA-62 3/4" Guy Cable..... 67.50/M

(MA-60 and MA-61 available in 100 foot coils continuous to 500 feet.)

### SCREW EYES



Rust-resistant — machine cut threads insure permanent anchorage.

MA-80 3" x 3/8" Screw eye (3/8" opening). List price \$21.75/C

MA-81 5" x 3/8" Screw eye (3/8" opening). List price \$23.25/C

MA-82 2 1/2" x 3/8" Screw eye (3/8" opening). List price \$19.75/C

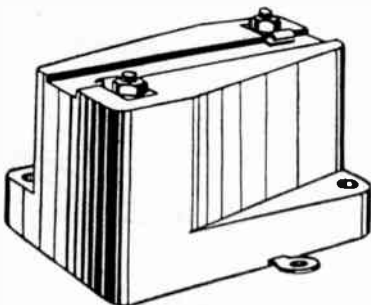
MA-83 2" x 1/4" Screw eye (1/4" opening). List price \$17.75/C

MA-84 1 1/2" x 3/16" Bridle eye (1/4" opening). List price \$6.00/C

(Packed in boxes of 100 each)

### LIGHTNING ARRESTERS

#### MODEL RW 300 LIGHTNING ARRESTER



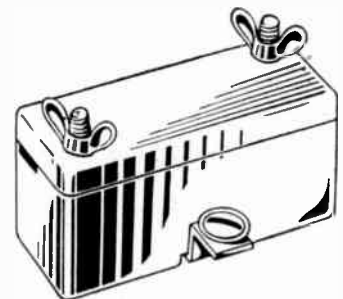
High frequency — Low loss. First lightning arrester for television and FM. Unnecessary to cut transmission line for installation. Unnecessary to change spacing of transmission line.

List price \$2.00

The only 4-wire arrester manufactured. May be used on either standard ribbon line or 4-wire rotator control cable. Housed in attractive moisture proof polystyrene case.

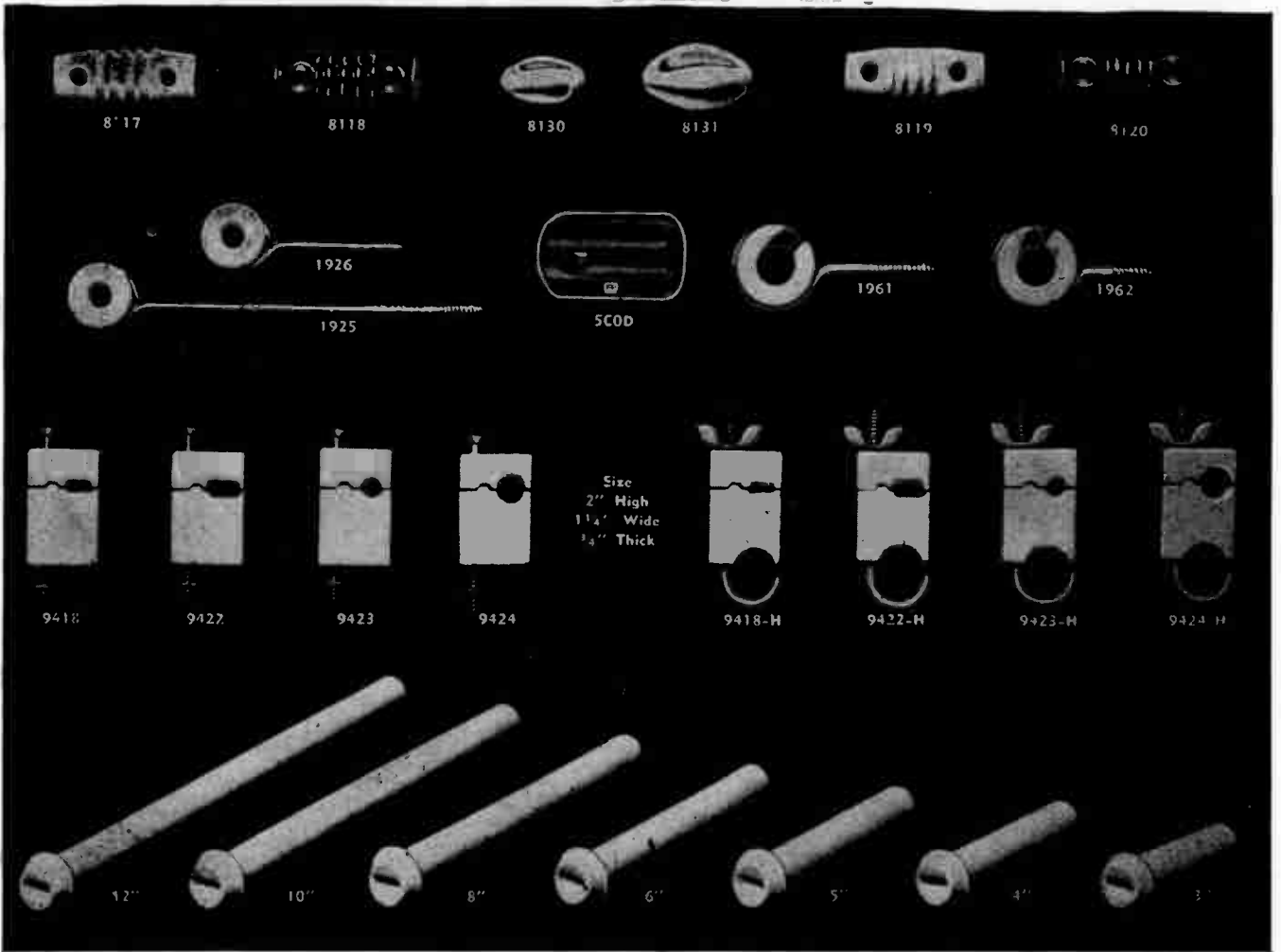
List price \$1.50

#### MODEL RW 204 LIGHTNING ARRESTER



*La Pointe - Plascomold Corporation*

UNIONVILLE, CONNECTICUT



# Porcelain Products' RADIO & TELEVISION INSULATORS

## TV-FM LEAD-IN SUPPORTS

The perfect insulator. Easy to install. Holds lead-in positively and rigidly. Size — 2" high, 1-1/4" wide, 3/4" wide. Supports lead-in 1-7/16" from surface. Weight 170 lbs. per M.

SCREW TYPE	HOOK TYPE
No. 9418 For light-weight 3/8" wide flat 300 Ohm twin lead-in.	No. 9418-H
No. 9422 For heavy-weight 1/2" wide oval 300 Ohm twin lead-in.	No. 9422-H
No. 9423 For 1/4" round 72 Ohm Coaxial Cable.	No. 9423-H
No. 9424 For 3/8" round 72 Ohm Coaxial Cable.	No. 9424-H

## TV-FM LEAD-IN TUBES

Provide essential insulation and neatness of appearance for 3/8" flat twin-wire lead-ins going through walls, partitions, etc. Outside diameter 11/16". Will fit hole made by standard 3/4" bit. Seven lengths from 3" to 12".

LENGTH	Wt. per M	LENGTH	Wt. per M
3"	110 Lbs.	8"	275 Lbs.
4"	143 Lbs.	10"	330 Lbs.
5"	175 Lbs.	12"	395 Lbs.
6"	210 Lbs.		

## ANTENNA INSULATORS

Made of highest quality electrical Porcelain. Pressure molded to assure dense strong body. Glazed.

- No. 8117 — Round, White glaze. Size 2-1/2" long, 1" diameter, 1/4" holes. Weight 146 Lbs. per M.
- No. 8118 — Same as No. 8117 but brown glaze. Weight 146 Lbs. per M.
- No. 8119 — Oval, White glaze. Size 2-1/2" long, 1" diameter, 1/4" holes. Weight 130 Lbs. per M.
- No. 8120 — Same as No. 8119 but brown glaze. Weight 130 Lbs. per M.
- No. 8130 — Small airplane type, oval, white glaze. Size 1-3/8" long, 7/8" diameter, 7/32" holes. Weight 60 Lbs. per M.
- No. 8131 — Large airplane type, oval, white, glaze. Size 2" long, 1-1/8" diameter, 9/32" holes. Weight 90 Lbs. per M.
- No. 500D — Strain type, brown glaze. Size 2-1/8" long, 1-9/16" diameter, 3/8" holes. Weight 250 Lbs. per M.

## INSULATED SCREW EYES

- No. 1925 — Seven and one-quarter inches long over-all. White glaze insulator with 5/16" hole. Weight 110 Lbs. per M.
- No. 1926 — Same as No. 1925 but 3" long over-all. Weight 90 Lbs. per M.
- No. 1961 — Split bridle-ring type. Insulator has diagonal slot 1/4" wide to facilitate quick threading of conductor. Over-all length 3-5/16". White glaze insulator has 5/8" hole. Weight 100 Lbs. per M.
- No. 1962 — Same as No. 1961 but 2-5/8" long over-all. Weight 100 Lbs. per M.

PORCELAIN PRODUCTS, INC.

FINDLAY, OHIO



# ANTENNAS

# Master Mobile

# MOUNTS

The prime requisites to a good, long lasting mobile antenna system are the quality of material and workmanship. MASTER gives you both and guarantees\* its Antennas and Mounts to be made of the finest materials available—its workmanship to be the best . . . and the prices are right!

### MOUNT SPECIFICATIONS:

All mounts are packaged and sealed at the factory. Shipping weight approximately 3 lbs.

MODEL	TYPE (All types are topped for 3/8" stud fitting on Antenna end). Springs cad plated.	Net Price	List Price
126	Body Mount—Straight Spring Swivel Base	\$7.95	\$13.25
132	Body Mount—Double Tapered Spring Swivel Base	7.95	13.25
138	Bumper Mount—Straight Spring	5.97	9.95
140	Bumper Mount—Double Tapered Spring	5.97	9.95
142	Bumper Mount—Less Spring, but with Insulators for Direct Mounting by Series 100 Antennas or 92 Extension and 106 Antennas	2.97	4.95

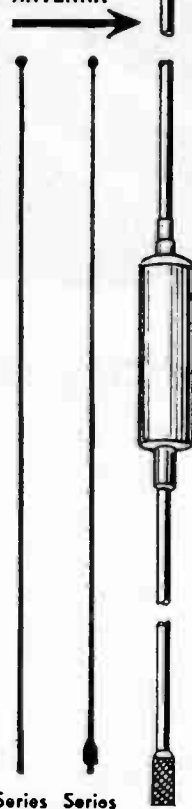
Stainless Springs  
Net \$1.00 additional.

### WHIP ANTENNA SPECIFICATIONS:

Postage rate 10 lbs. minimum.\* 3 lbs. on all other whip antennas.

MODEL	Overall Length	Base Specifications	Net Price	List Price
100-72S	72"	Threaded 3/8" Stud to fit all Mounts	\$4.50	\$7.50
100-78S	78"	Threaded 3/8" Stud to fit all Mounts	4.56	7.60
100-86S	86"*	Threaded 3/8" Stud to fit all Mounts	4.65	7.75
100-90S	90"*	Threaded 3/8" Stud to fit all Mounts	4.71	7.85
100-96S	96"*	Threaded 3/8" Stud to fit all Mounts	4.77	7.95
106-72S	72"	Plain End 3/16" Dia. (Fits Model 92 Ext.)	3.75	6.25
106-78S	78"	Plain End 3/16" Dia. (Fits Model 92 Ext.)	3.81	6.35
106-86S	86"*	Plain End 3/16" Dia. (Fits Model 92 Ext.)	3.95	6.58
106-90S	90"*	Plain End 3/16" Dia. (Fits Model 92 Ext.)	4.02	6.70
106-96S	96"*	Plain End 3/16" Dia. (Fits Model 92 Ext.)	4.11	6.85

### ALL BAND MOBILE ANTENNA



### MODEL 92 EXTENSION . . . NET \$2.97 . . . LIST PRICE \$4.95

### ALL BAND MOBILE ANTENNA

- Center-loaded antenna comes with one coil — 20, 40 or 75 meters. Change coils to any band 80 through 20.
- For 10 meter operation, short coil in use.
- Fits any Master Mount or 3/8 SAE thrd.
- Chrome-plated. Length: 8'10" overall. Wt. 28 oz. Shpg. wt. 3 lbs.

Net Price Antenna (Specify freq. coil desired) . . . . . \$7.95  
Extra Coils 20, 40 or 75 meters. Each . . . . . \$2.95



MODEL 126



MODEL 132



MODEL 138



MODEL 140



MODEL 142



Extension Model 92



Series 106



Series 100

DEALER INQUIRES INVITED  
Order from your dealer or write:

\*Master products guaranteed for one year against defective materials or workmanship.

Prevailing Discount to Distributors and Amateurs.

*Master Mobile Mounts, Inc.*

5200 WILSHIRE BOULEYARD • LOS ANGELES 36, CALIFORNIA

# ICA INSULINE RADIO PRODUCTS ICA

## ICA "DE LUXE" AUTO RADIO ANTENNAS

### The Latest, Improved ICA Auto Antennas

For over a quarter-century, ICA has pioneered in the field of radio-electronics. A leading manufacturer of receiving antennas of all types since the industry's earliest days, ICA now presents its newest, improved, complete line of auto radio antennas, incorporating extensive precision manufacturing facilities with the latest engineering features, including:

- Noiseless Performance
- Rattleproof Engineering
- Lifetime Rustproof Guarantee
- Triple-Chrome-Plated Admiralty Brass
- Shielded Polyethylene Lo-Loss Cable
- Weatherproof, Dustproof Joints
- Easy, One-Man Installation
- Equipped with BOTH Delco and Motorola Fittings.

### ICA Disappearing ANTENNAS

For Fender and Cowl Mount Suitable for all cars, old and new

56" of exposed antenna telescopes to 6 1/2". Does not obstruct vision.

Plastic and chrome-plated insulator hugs flat or convex surfaces.

Generous length (48") HI-Q Lo-Loss Cable . . . Polyethylene Insulation with Vinylite Jacket.

No. 4570.....Dealer Cost \$3.87

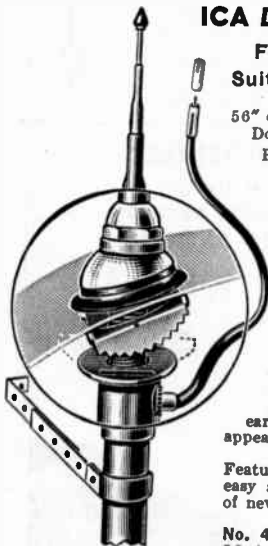
Three-Section Packed 10 to a standard carton Weight 11 lbs.

#### PEERLESS MODEL

Designed especially for 1948 and earlier model cars. Improved streamlined appearance.

Features unique swivel base permitting easy angle adjustment to match contours of new cars.

No. 4571—8-Section...Dealer Cost \$4.17  
10 to standard carton — Weight 11 lbs.



### ICA "TOPPER" ANTENNA

For variable angle mounting on tops of fenders and cowls of newest streamlined cars.

- Patented brass shim contacts prevent rattling or vibration.
- Dust and Moisture Proof.
- Snug-fitting tapered telescopic joints.
- Varied mounting positions to harmonize with contour of car.
- Generous length (48") shielded polyethylene Lo-Loss cable . . . Vinylite covered insulation.

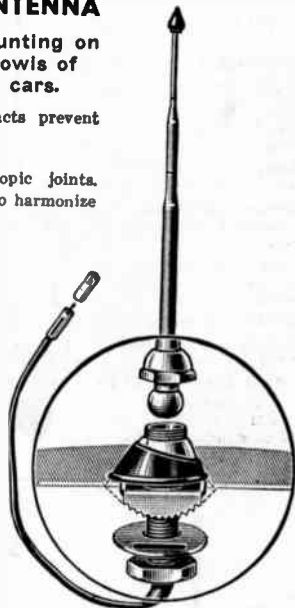
No. 4575...Dealer Cost \$3.27  
8-Section—Extends 26" to 62"

#### "PIVOT TOPPER"

New development in variable angle mountings. Special type pivot permits universal angle mounts. Easily installed. Merely set rod to desired angle and tighten securing nut. Hi-Q low-loss cable . . . 48".

8-Section—Extends 26" to 62"  
No. 4576...Dealer Cost \$2.97

2-Section—Extends 29" to 49"  
No. 4577...Dealer Cost \$2.37  
10 to stand. carton. Wt. 10 lbs.



### REPLACEMENT ANTENNA RODS

Specially Designed for BUICK — FORD

and other cars using antennas of similar windshield mount type.

- Simple Installation.
- Triple-Chrome-Plated Brass.
- Lasting Service.
- Quality Performance.

No. 4545—Buick type, 8-Sec. Extends to 36" \$1.77  
4546—Ford type, 2-Sec. Extends to 54" 1.35



**It's New! . . . It's Exciting! . . . It's Revolutionary!**

### The INSULINE "Tenna-Beam" Auto Antenna

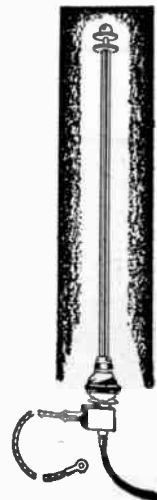
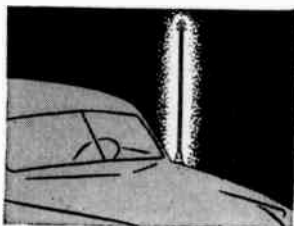
Beams a 24-inch Shaft of Soft Light!

Insuline does it again! Here is the greatest Antenna development in history . . . a two-section aerial that actually "lights up." Illumination principle is a pilot light built into the base. The special light transmitting jacket carries light completely up the 24" shaft, while offering additional antenna protection. The two red discs on the top of the antenna glow brightly in the daytime.

#### Features:

- Easily attached to dashlight circuit, parking light circuit or direct to ammeter with a separate switch.
- Negligible drain on battery . . . 1/2 ampere.
- Complete with pilot light and 48" connecting lead.
- 48" high "Q" shielded polyethylene cable.
- Chrome-plated Admiralty brass.
- Guaranteed rust-proof and rattle-proof.
- TWO SECTIONS — extends to 48".
- Special pivot construction to conform with contour of every car . . . old or new.
- Excellent parking safety light.
- Quickly installed on any fender or cowl . . . regardless of make or year.

No. 4579.....Dealer Cost \$4.77



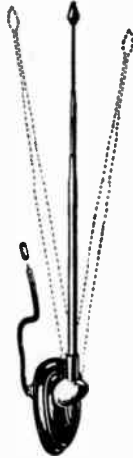
# ICA INSULINE RADIO PRODUCTS ICA

## "ROCKER" ANTENNA

A Variable Angle Antenna to Fit the Contours of All Car Bodies

- Suitable for all cars.
- Easily adjusted to desired angle.
- Weatherproof joint construction.
- Easy, one-man installation.
- Streamlined design to harmonize with latest cars.
- High-luster bakelite insulator . . . tamper-proof.
- 48" Lo-Loss cable.
- Completely assembled, ready for installation.

No. 4541. Dir. Cost \$3.15  
Three-Section  
Extends from 23" to 62"  
10 to standard carton.  
Weight 16 lbs.



## UNI-MOUNT ANTENNAS

The Universal Aerial. Fits All Types of Cars . . . Old and New. For Underhood Mounting

- Streamlined modern design.
- Equipped with inter-changeable brackets for either sidehood or alligator hood mountings.
- No drilling of holes into car body necessary.
- Sturdy bakelite and chrome-plated brass insulator.
- Shielded loom LO-Loss cable 36" . . . vinylite insulated.

No. 4801. Dealer Cost \$2.67  
Three-Section  
Extends from 20" to 63"  
10 to standard carton. Wt. 11 lbs.

No. 4803. Dealer Cost \$3.27  
Three-Section  
Extends from 31 1/2" to 96"  
10 to standard carton. Wt. 14 lbs.



## SIDE COWL ANTENNA

A series of Antennas for Wide Application

Includes patented brass shim contacts for noiseless performance; brass swivel coupling for easy installation; shielded Lo-Loss cable, 36" long.  
No. 4566. Dealer Cost \$2.67  
3-Section. Extends 20" to 63"  
No. 4553. Dealer Cost \$3.27  
3-Section. Extends 31 1/2" to 93"

### HEAVY DUTY AERIAL

Made of extra large diameter brass tubing. Ideal for long distance reception and rugged wear.  
No. 4568. Dealer Cost \$2.85  
3-Section. Extends 29" to 68"  
No. 4569. Dealer Cost \$2.97  
4-Section. Extends 30" to 78"  
No. 4559. Dealer Cost \$3.87  
4-Section. Extends 36" to 100"

### "PACEMAKER"

Has most of the features of above antennas but priced low for quick sales.  
No. 4567. Dealer Cost \$2.01  
3-Section. Extends 29" to 63"  
\*10 antennas in standard pkg.



## The Insuline "STREAMLINER"

Rear Mount

Communication . . . Police Type Antenna . . . Streamline design . . . shining chrome plated rods —ideal for the racy type of cars commonly known as "Hot Rods."

- For any make of car.
- Extends to 96 inches.
- Improves reception.
- Rugged aluminum mounting bracket.
- Heavy ceramic insulator.
- Includes shielded polyethylene lead.
- Ready to install.

No. 4606— 8-ft. Lead...Dealer Cost \$4.17  
No. 4607—11-ft. Lead...Dealer Cost 4.77



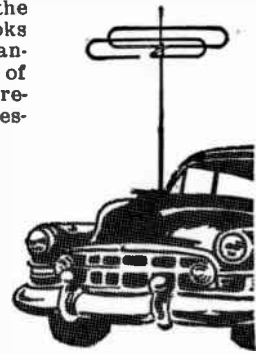
## The Insuline "VIDI-TENNA"

Greater Reception Range with this New Auto Aerial Auxillary FITS ANY TYPE AUTO ANTENNA

Add a little "Zip" to your auto antenna while improving the reception of your radio. Looks like a miniature television antenna. 52 additional inches of aerial for super-sensitive reception . . . the perfect accessory for your car.

- Sturdy chrome-plated Admiralty brass.
- Installation time . . . a few minutes.
- Super-sensitive reception.
- Long range reception.
- No extension of present antenna necessary.
- Weighs only 4 oz.

No. 4610...Dealer Cost \$1.17



## BOOST ANTENNA SALES WITH NEW DISPLAYS

### DISPLAYS THAT SELL!

FREE, ALL-METAL

Triple-use, sturdy, colorful unit that serves as counter, window, or floor display.

Unique, attention-compelling design . . . made for long and steady service (14" x 16"). Pay only for the following fully mounted antennas.

No. 4568, Side Cowl	} Cat. No. 4499 Dealer Cost \$16.14
4571, Concealed	
4576, "Pivot Topper"	
4545, Bulck Rod	
4546, Ford Rod	
4541, "Rocker"	

### NEW ANTENNA DISPLAY

FREE . . . Ready to Use

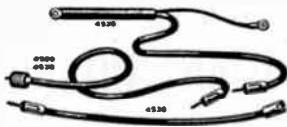
A sales stimulating display. Colorful . . . Neatly styled. Suitable for window or counter. (Size 20" x 20".) Display is FREE, you pay only for the following fully-mounted Antennas:

No. 4541—"Rocker"	} Cat. No. 4500 Dealer Cost \$11.94
No. 4801—Uni-Mount	
No. 4568—Side Cowl	
No. 4575—Topper	



# ICA INSULINE RADIO PRODUCTS ICA

## REPLACEMENT ANTENNA LEADS



Various lengths and types of shielded HI-Q Lo-Loes cable for auto radio antennas. Inner polyethylene insulation with vinylite jacket.

No.	Description	Dir. Cost
4520	For Side Cowl Antennas except No. 4567—36" L.....	\$.75
4520B	Button type for No. 4567—36" L.....	.75
4535	For "Uni-Mount" Antennas—36" L.....	.75
4530	For "Topper"; Concealed Cowl; "Rocker" Antennas—48" L.....	.99

## EXTENSION LEADS

To add length to existing lead.

No.	Description	Dir. Cost
4522	12" Extension.....	\$.45
4523	18" Extension.....	.60
4524	24" Extension.....	.81
4548	36" Extension.....	.99

## EXTRA LENGTH LEADS

No.	Description	Dir. Cost
4537	60" Lead.....	\$1.17
4539	72" Lead.....	1.35
4543	96" Lead.....	1.77



## AUTO BY-PASS CONDENSER

For by-passing ammeter, dome light or generator. Capacity 1/2 mfd.

No. 1244.....Dealer Cost \$3.33

## ICA

### GENERATOR SILENCER

Heavy duty generator condenser eliminates generator, ammeter, distributor noise.

No. 1243 .5 mfd. Dir. Cost \$.48  
No. 1247 1 mfd. Dir. Cost .66



## ICA FORD V8 NOISE SILENCER

No. 1245  
Dealer Cost \$.51

## ICA FORD V8 CONDENSERS FOR 1939-1941 MODELS

Equipped with Special Bracket. Capacity 1/2 mfd.

No. 1246.....Dealer Cost \$4.48



## ICA AUTO ANTENNA CONNECTORS AND ADAPTERS



No. 2347—Antenna Connector.....Dealer Cost \$0.06



No. 2372 — Lead-in Adapter — converts standard leads to Motorola Fittings. Dealer Cost .....\$1.18



2378

2375

No. 2375—Motorola Pin Plug Dir. Cost \$0.06  
No. 2378—Motorola Shielded Jack Dir. Cost .12



No. 2396—Lead-in Adapters —converts Motorola lead to Delco Fittings. Dealer Cost .....\$0.06

## ICA WIRE WOUND SUPPRESSORS LOW RESISTANCE 30 OHMS. D. C.



2351B 2354B 2353B

These suppressors have an extremely low D.C. resistance and thus definitely do not affect the intensity of the ignition spark or cut down the speed of the car.

No.	Description	Dealer Cost
2351B	Spark Plug Suppressor.....	\$.39
D-72351	Display Card of 16 above.....	6.24
2353B	Distributor Suppressor.....	.39
D-72353	Display Card of 16 above.....	6.24
2354B	1940-41 Slip-On Suppressor; Will Also Fit Older Type Cars.....	.39
D-72354	Display Card of 16 above.....	6.24

## ICA SUPER-TEST AUTO RADIO IGNITION SUPPRESSORS

Made of Moulded Bakelite—All Metal Parts Made of Rugged Machined Brass



Type No.	Description	Dealer Cost
E-349B	Spark Plug Slip-on Suppressor. Fits 1940-41 cars.....	\$1.18
E-349F	Slip-on Spark Plug Suppressors for New Model Ford cars.....	.18
D-350B	Spark Plug Suppressors with Dual Threaded Inserts.....	.18
D-351B	Spark Plug Suppressors for Ford cars up to 1939.....	.18
A-377	Bracket Type Suppressor.....	.18
B-352B	Distributor Suppressor for all cars.....	.21
C-4461	Ford Early Models.....	.21
C-4463	Ford Late Models.....	.21
F-4465	Cable Type Suppressor.....	.18

## MASTER DIST. CARBON SUPPRESSOR — 10,000 OHMS

For use on new type cars where only one suppressor is needed. Master Suppressor is guaranteed to eliminate all motor noise—making unnecessary the use of individual suppressors.

No. 330.....Dealer Cost \$4.45  
Display Card of 12 above  
No. D-70330. Dealer Cost \$5.40



## INTERFERENCE SUPPRESSOR SET



For Auto Radio  
All the needed condensers, suppressors, etc. for a complete installation. Neatly packaged as a complete unit. Includes easy instructions. For all cars—old and new. Packed individually or in attractive counter display holding 6 Sets.

No.	For	Dir. Cost
SK-1	8 Cyl. Cars (except Fords).....	\$2.40
SK-2	8 Cyl. Cars (except Fords).....	2.04
SK-3	Ford Cars (to 1938).....	2.40
SK-4	Ford Cars ('39 to current).....	2.43

## UNIVERSAL WIRE-WOUND SUPPRESSOR SETS

Complete packaged units that include all suppressors, condensers, etc., for any type or model car—either 6 or 8-cylinder. Special bracket provided that makes this kit universally adaptable. Includes installation instructions.

No.	Description	Dir. Cost
SK-6	For all 6-cylinder cars.....	\$3.57
SK-8	For all 8-cylinder cars.....	3.87



## ELBOW SHAPED SUPPRESSOR

Auto ignition suppressor. Elbow type. Molded-in-bakelite. Machined brass metal parts.

No. 4464.....Dealer Cost \$1.18

## JUMBO FUSE HOLDERS

Fuse holders of various needed values.



No.	Description	Dealer Cost
2349	SFE 30 Amperes (2 1/2" l. x 1/2" d.).....	\$1.18
2346	SFE 20 Amperes (2 1/4" l. x 1/2" d.).....	.18
2345	SFE 14 Amperes (2 1/4" l. x 1/2" d.).....	.18
2344	SFE 9 Amperes (2 1/4" l. x 1/2" d.).....	.18
2359	Male Sleeve only.....	3.30 C
2367	Bakelite Bushing only.....	2.70 C
2358	Female Sleeve only.....	4.20 C



No. 2348—Standard Fuse Holder.....Dealer Cost \$0.09

## ICA WHEEL HUB STATIC ELIMINATOR



Used under hub of front wheel. An essential on all cars to eliminate front wheel static. Less Back Plate and screw.

No. 4476.....Dealer Cost \$0.09

## REPLACEMENT PARTS FOR ANTENNA AND FUSE RETAINERS

No. 2360	Female sleeve of fuse connector Dealer Cost \$3.00 per C
No. 2361	Female sleeve of antenna connector Dealer Cost \$2.10 per C
No. 2362	Male part of antenna connector Dealer Cost \$1.80 per C
No. 2363	Spring for both antenna and fuse connectors Dealer Cost \$ .60 per C
No. 2364	Fiber insulator for auto fuse holder Dealer Cost \$ .54 per C
No. 2365	Bakelite eyelet bushing Dealer Cost \$1.50 per C



2360



2361



2362



2363



2364



2364

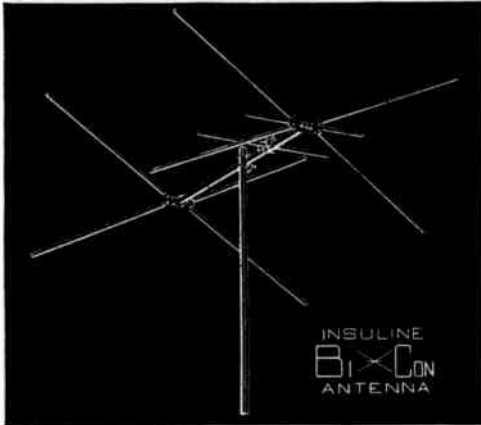


2364

# ICA INSULINE ICA

## RADIO PRODUCTS

### Our finest Achievement in Antennas . . . The Insuline "BI-CON" Television Antenna



These newest antennas of the conical type represent Insuline's greatest accomplishment in its long history of television pioneering.

#### Exceptional Performance

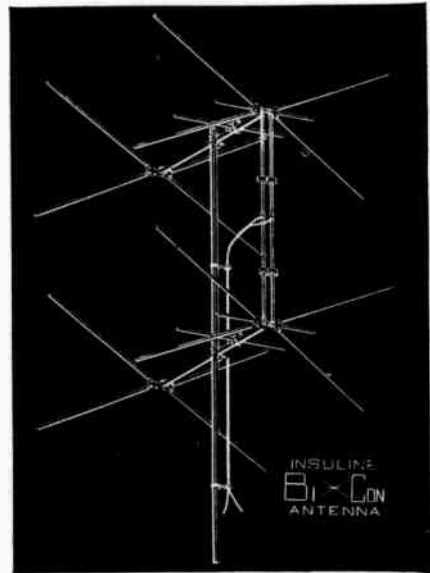
- Peak All-Channel Reception
- Stable Impedance over entire range. Reduces "ghosts" to minimum
- Greater Over-All Gain. Offers better, brighter pictures; less "snow" in low signal areas
- All-Purpose Antenna . . . for any receiver. Permits use of either 72, 150 or 300-ohm transmission line.
- Uni-Directional. Effective front-to-back ratio
- Dual Reflectors. Found only in "BI-CON" antennas . . . separate high frequency and low frequency dipole-reflector elements for outstanding all-channel performance
- Heavy Duty Tubing. Heavy duty 1/2" aluminum tubing used for all antenna elements, assuring broader band width and more constant termination impedance
- Rigid Castings. Heavy duty, specially-designed, all-aluminum castings for low-resistance electrical contact and rigid dipole clamping.

#### Sturdy Construction

- Features all-metal fabrication
- Excellent functional-mechanical rigidity
- Weather-resistant heavy wall non-corrosive aluminum dipoles
- Cross-arm clamp permits use of 1" to 1 1/2" diam. mast.

#### Easy Installation

- Pre-assembled for minimum installation time
- Simple installation . . . soldering eliminated.
- Easy-to-follow instructions
- Individually packaged.



#### INSULINE "BI-CON" SINGLE

For outstanding television reception on all channels.

No. 6472—(Less Mast)..... Dealer Cost \$8.10

#### INSULINE "STACKED BI-CON"

Solves fringe area reception problems. Specifically designed and engineered to build up weak signals.

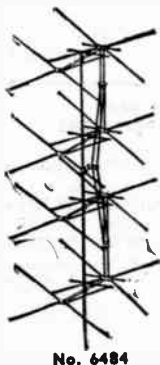
No. 6481—(Less Mast)..... Dealer Cost \$17.70

#### INSULINE "QUAD BI-CON"

For the more remote areas. Builds up weak signals for distance and clarity reception.

No. 6484—(Less Mast)..... Dealer Cost \$37.50

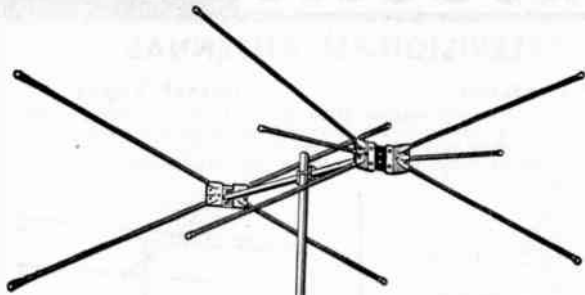
#### ANTENNA ACCESSORIES



No.	Dealer Cost
6511—5-ft. Mast, 1 1/4" Diameter.....	\$ .85
6512—5-ft. Mast, 1 1/4" Diameter (one end swaged).....	.90
6485—Extension Mast 10 ft., 1 1/4" Diameter (one end swaged).....	1.65
6488—Phasing Section (For Dual Array No. 6481)..... Includes two phasing rods; 1 spacing insulator.	1.40
6550—Phasing Section (Quadruple Array No. 6484)..... Includes two No. 6488 (above) Plus center harness insulator assembly. For use with Two No. 6481.	4.25
6562—Low Frequency Aluminum Dipole (1/2" tubing).....	.60
6563—High Frequency Aluminum Dipole (1/2" tubing).....	.25
6565—Low Frequency Reflector Element.....	.60
6566—High Frequency Reflector Element.....	.45

# ICA INSULINE ICA

## RADIO PRODUCTS



### Compare these Features

1. Excellent performance on ALL channels
2. Perfect for ANY MAKE television receiver . . . with either 72, 150 or 300-ohm transmission cable.
3. Exceptional high forward gain and front-to-back ratio
4. Provides excellent matching to transmission line over the entire TELEVISION range. Picture "ghosts" reduced to absolute minimum
5. Includes high frequency dipole.

### Construction Can't Be Beat for the Price!

1. Dipoles of sturdy  $\frac{3}{8}$ " aluminum tubing, sealed at ends
2. Cross-arm of  $\frac{3}{4}$ " square aluminum
3. Center dipole clamp of 16-gauge aluminum stampings
4. Mounting clamps that will accommodate masts of 1" to  $1\frac{1}{2}$ " diameters
5. All hardware is cadmium plated steel, guaranteed to be weather resistant
6. Jiffy Installation . . . Pre-assembled sections.

### "CONOID SINGLE"

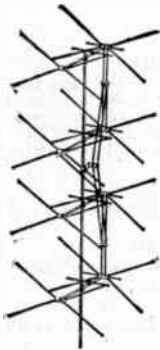
The LOW-PRICED Conical Antenna with the HIGHEST performance all-channel reception.

No. 6490—(Less Mast)..... Dealer Cost \$6.30

### "CONOID DUAL"

For superb all-channel "Fringe Area" reception. Features strong build-up of weak signals.

No. 6492—(Less Mast)..... Dealer Cost \$13.50



No. 6495

### "CONOID STACKED ARRAY"

Scientifically engineered for areas far removed from TV transmitters. Sturdily constructed.

No. 6495—(Less Mast)..... Dealer Cost \$28.50

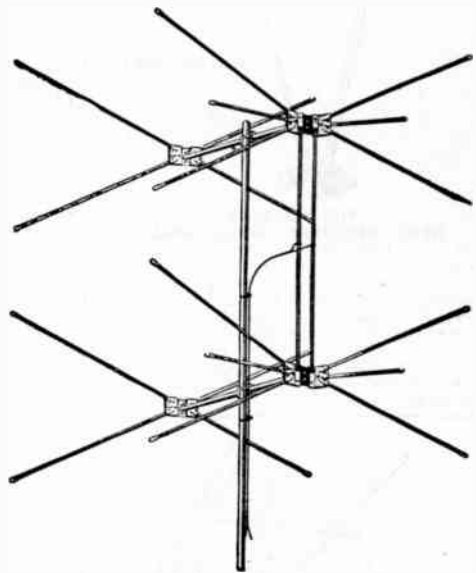
### ANTENNA ACCESSORIES

No.	Dealer Cost
6511—5-ft., $1\frac{1}{4}$ " Diameter Mast.....	\$ .85
6512—5-ft., $1\frac{1}{4}$ " Diameter Mast (one end swaged) .....	.90
6485—10-ft. Extension Mast, $1\frac{1}{4}$ " Diameter (one end swaged).....	1.65
6499—Phasing Section (Conoid Dual) Includes two phasing rods.....	1.00
6520—Phasing Section (Quadruple Conoid).....	3.50
Includes two No. 6499 plus harness insulator assembly. For use with Two No. 6492.	
6532—Low Frequency Reflector Element.....	.40
6535—Low Frequency Aluminum Dipole ( $\frac{1}{2}$ " tubing).....	.40
6537—High Frequency Aluminum Dipole ( $\frac{1}{2}$ " tubing).....	.30

### Insuline "CHALLENGER CONOID" Television Antennas

The LOW priced  
CONICAL TYPE ANTENNA  
with the HIGHEST  
performance characteristics

PRECISION DESIGNED FEATURES  
that add up to flawless TV reception

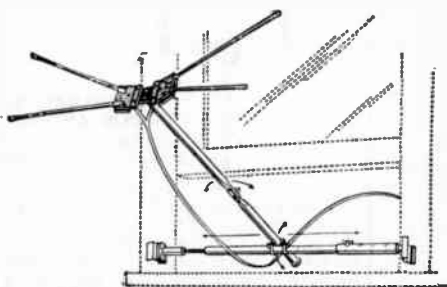


### CONICAL WINDOW ANTENNA

The newest conical type window antenna for excellent all-channel television reception. Durable aluminum and steel construction assures long-life and stability. The steel support is designed to permit horizontal or vertical positioning for maximum directional response. Special adjustable 1" d. window clamp spans 30 to 50 inches to fit any wood or casement window frame. Steel mast: 1" d. x  $21\frac{1}{2}$ " l.

Features ease of installation. The Insuline Conical Window Antenna may be set up with a minimum of effort without special tools.

No. 6451..... Dealer Cost \$6.75

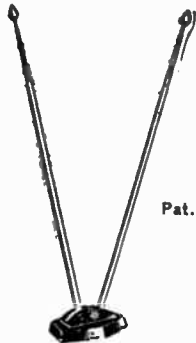


# ICA INSULINE RADIO PRODUCTS ICA

## INSULINE "CHALLENGER" TELEVISION-FM ANTENNAS

### Latest Design

A new Competitively Priced complete line of Television and FM antennas and accessories—precision made by ICA, pioneers in Television for over twenty years. Precision engineered; precision fabricated.



Pat. No. 158679

### THE "METEOR" NEW! IMPROVED! SENSATIONAL!

The new INDOOR Television Antenna with amazing reception qualities. Instantaneous horizontal-vertical orienting and tuning for maximum reception. All-Channel selection. Beautifully designed gleaming nickel-plated dipoles and attractive molded black-sheen bakelite base with non-scratch cushions. Jiffy installation. Also improves reception when used to supplement existing outdoor antennas.  
No. 6470—With 300-ohm lead Dir. Cost \$2.97



### HI-BAND ANTENNA

Adds to the performance of existing television installations. Broadens reception range of low band antennas to include the higher channels (7 to 13). May be independently rotated for maximum directional response. Matching feature results in more even reception from channel to channel. All metal; weather-resistant. Includes 300 ohm connecting lead.  
No. 6440—Ship. Wt. 2 1/2 lbs. Dir. Cost \$3.87



### REFLECTOR

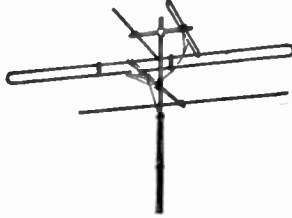
Add to existing folded or simple dipole for stronger pick-up. Improves response; cuts down interference. May be added to ICA No. 6420.  
No. 6245—Ship. Wt. 3 lbs. Dir. Cost \$2.67

### FM RECEPTION

Improves directional strength of FM reception in low signal areas. Eliminates reflections. May be added to No. 6405.  
No. 6410—Ship. Wt. 2 1/2 lbs. Dir. Cost \$2.67

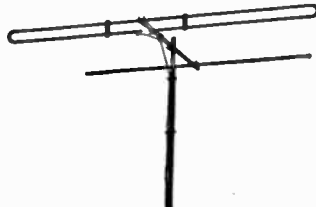
### Latest Features

Includes sturdy, rust-proof, all-metal construction; non-corrosive aluminum dipoles, independently rotatable elements. Offers broad-band reception. Easy-fitting units for "jiffy" installation. Full instructions.



### HI-BAND LO-BAND TV ANTENNA

For outstanding reception over the entire television channel range. Perfect 300 ohm impedance matching to transmission line and set making losses a minimum. Offers high gain and broad response with strong horizontal reception pattern. Separate elements are independently rotated to yield maximum clarity and signal strength in each band. Dipoles and reflectors of heavy wall non-corrosive aluminum; sturdy steel mast 5 ft. long. Shipping Weight 8 1/4 lbs.  
No. 6444..... Dealer Cost \$8.85

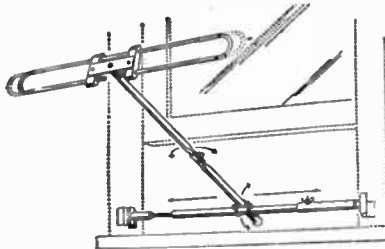


### FOLDED DIPOLE WITH REFLECTOR

For areas of unusual natural interference. The folded dipole element offers matching feature for more even reception. Yields uniform response over a wide band of frequencies. For use with 300 ohm transmission line. Includes rubber stand-off insulators to prevent lead-in "contact" interference or sway. Hi-Band Antenna (No. 6440) may be attached for coverage of higher channels.  
Shipping Weight 7 1/2 lbs.  
No. 6430..... Dealer Cost \$8.25

### FM RECEPTION

For maximum FM reception. Especially adaptable to high interference areas. Eliminates reflections.  
Shipping Weight 4 1/2 lbs.  
No. 6415..... Dealer Cost \$8.25



### WINDOW ANTENNA

For All-channel Television Reception. Precision engineered, featuring ease of installation; maximum adjustable dipole for best all-channel reception; durable aluminum and steel construction; excellent reception. Special adjustable base spans 30 to 50 inches to fit any wood or casement window frame. Skillfully designed support permits horizontal or vertical positioning for maximum directional response.  
Shipping Weight 5 1/2 lbs.  
No. 6450..... Dealer Cost \$9.21

### Latest Types

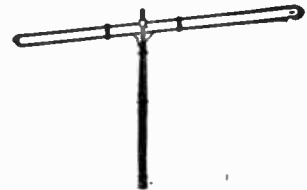
ICA's new television series offers a wide assortment of antennas and accessories for every type of installation. Includes latest indoor type antennas and varied outdoor set-ups.



### DOUBLE FOLDED DIPOLE-REFLECTOR ARRAY

An outstanding uni-directional broad band antenna system for all-channel, high band-low band reception. Small folded dipole serves as the high band antenna and as a director for the larger dipole. Matching stub provided for use between high and low band dipoles. Excellent 300 ohm impedance matching to transmission line and set. Possesses extremely high sensitivity to build up weak signal reception from distant television transmitters. Engineered to overcome unusual interference from local sources. Includes high band-low band connecting lead; sturdy 5 ft. steel mast; rubber stand-off insulators.  
Shipping Weight 8 lbs.

No. 6448..... Dealer Cost \$9.45



### FOLDED DIPOLE

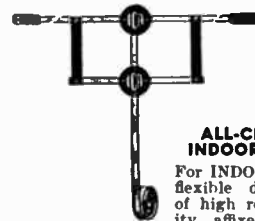
The ideal antenna for excellent low band television reception (channels 2 to 6) in areas of normally good signal strength with minimum interference present. For use with 300 ohm line. Sturdy 5 foot steel mast; non-corrosive aluminum dipole.  
Shipping Weight 4 1/2 lbs.

No. 6420..... Dealer Cost \$5.37

### FM RECEPTION

For optimum FM reception. Features clarity and fidelity. Eliminates reflections.  
Shipping Weight 3 1/2 lbs.

No. 6405..... Dealer Cost \$5.37



### ALL-CHANNEL TV INDOOR ANTENNAS

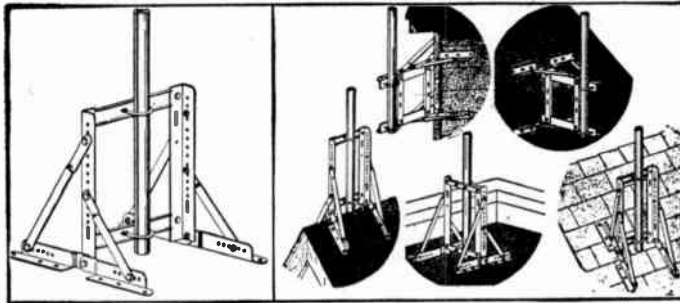
For INDOOR use. Folded flexible dipole elements of high receptivity quality, affixed to 10 ft. of standard 300 ohm twin lead transmission line. May be placed under rug, in attic or other out of way spot. For all television channels.

No. 6012—All-channel ..... Dir. Cost \$1.77  
No. 6009—For channel 2 to 6. Dir. Cost 1.47  
No. 6008—For FM reception...Dir. Cost 1.17

# ICA INSULINE RADIO PRODUCTS

## TELEVISION ACCESSORIES

### MULTI-POSITION ANTENNA MOUNTING BRACKET



The newest type of antenna mounting unit that provides a wealth of mounting positions on either roof-top, roof-side or side wall. Offers maximum adjustability to combat any mounting problem. Ruggedly constructed of cadmium-plated steel. Weather-resistant. Includes necessary hardware for complete installation.

- Quick and easy installation.
- Adjusts to any position on roof, parapet, side wall or building corner.
- Eliminates excessive use of lead-in wire by permitting mounting nearest to TV set.
- Compactly packaged for easy handling.
- Permits easy setting of mast before final positioning.
- Adaptability: eliminates undesired chimney mountings.
- Rugged, sturdy; constructed of heavy gauge cadmium-plated steel.
- No blocking or shimming necessary.
- Pre-assembled almost completely.

No. 6136—For masts up to 1 1/2" in diameter (Offset up to 8").....Dealer Cost \$3.57  
 No. 6139—For masts up to 2" in diameter (Offset up to 12").....Dealer Cost 5.37

### CHIMNEY ANTENNA MOUNT



For simplified mounting against chimneys, rough parapets and other super-structures. These heavy gauge steel supports solve many types of difficult mountings. The rugged steel strapping is perforated offering the added feature of adjustability. Minimizes sway, shift or bending.

No. 6130.....Dealer Cost \$2.55 Set

### PERFORATED MOUNTING STRAP



Designed for quick easy fastening of antenna masts to piping, etc. Perforated through entire length for maximum adjustability. Sturdy . . . flexible.

Includes screw; nut.  
 No. 6134—15" Length .....Dealer Cost \$.09  
 No. 6135—20" Length .....Dealer Cost .12

### PERFORATED STRAPPING

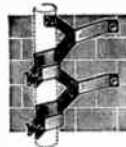
Strong, flexible galvanized steel strapping that will serve a multitude of uses in antenna installation work. Ideal for mounting masts on vari-shaped objects—chimneys, posts, etc. Width 3/4". Hole size 7/8" at 3/4" intervals. In 12 or 100 ft. lengths.



No. 6148.....Dealer Cost \$.45 12 ft.  
 Dealer Cost 2.97 C ft.

### ANTENNA WALL BRACKETS

A useful antenna accessory where a vertical wall installation is desired. Offers a tight-gripping clamping action. Suitable for masts from 3/8" to 1 1/2" in diameter. Made of weather-resistant plated heavy gauge steel.



No. 6131.....Dealer Cost \$1.50 pr.

### DOUBLET LIGHTNING ARRESTER



Weatherproof lightning arrester specially designed for television application. Suitable for any doublet type antenna system. Accommodates twin lead or any other two-wire transmission line.

No. 6111.....Dealer Cost \$.36

### LIGHTNING ARRESTER

The same weather-proof lightning arrester described above with convenient metal ground strap to permit ready affixing to water pipes or similar posts.



No. 6112.....Dealer Cost \$.45

### GUY WIRE CLAMP



Ideal for set-ups requiring guy-wire support. May be located at any position on antenna mast for maximum rigidity. This rugged adjustable steel clamp is suitable for masts ranging from 3/4" to 1 1/4" diameters. Includes nuts and lock-washers.

No. 6144.....Dealer Cost \$.21

### PIPE STRAPS

A useful accessory for supporting antenna masts, etc., against Chimneys, gables, walls or other flat surfaces. Suitable for all masts up to 1" in diameter.



No. 6152 .Dir. Cost \$6.00 C

### ICA TURNBUCKLES



Sturdy, steel turnbuckles that afford balanced tension of supporting wires. Especially suitable for antenna guy wires. Assure slack-free, rigid support.

No. 6150—3" (closed) .....Dealer Cost \$1.15  
 No. 6151—5" (closed) .....Dealer Cost .21  
 No. 6154—7 1/2" (closed) .....Dealer Cost .48

### ICA U-BOLTS



Offer a firm and rigid clamping action for affixing antenna or supporting masts to metal or wood surfaces. Nuts and washers included. Over-all measurements: width 1"; length 2 1/2".

No. 6153.....Dealer Cost \$1.18

### COAXIAL CABLE



Standard 70 ohm impedance cable necessary in installations requiring long lead-ins or where high level of interference exists.

No. 6115.....Dealer Cost \$7.80 C ft.

### TELEVISION - FM WIRE

High-grade 300 ohm transmission line of the twin-lead type. Low-loss polyethylene insulation. Supplied in 1,000 ft. rolls.



No. 6020  
 Dir. Cost \$ 2.55 C ft.  
 Dir. Cost 24.00 M ft.

### GUY WIRE

For simple antenna installation needs. Strong but flexible enough for easy handling. Stranded copper and monel — 7 strands No. 26. 100 foot coils.



No. 6147.....Dealer Cost \$.24 Coil

The perfect guy wire. Rugged, galvanized steel twisted wire—6 strands No. 20. Weather-proofed—450 lbs. tensile strength.

No. 6186— 50 ft. ....Dir. Cost \$.53 Coil  
 No. 6187— 100 ft. ....Dir. Cost 1.05 Coil  
 No. 6188— 500 ft. ....Dir. Cost 5.03 Coil  
 No. 6189—1000 ft. ....Dir. Cost 10.05 Coil

When antenna load is not too great the ICA 4-strand No. 20 galvanized steel twisted guy wire is recommended. 250 lbs. tensile strength.

No. 6195— 50 ft. ....Dealer Cost \$.39  
 No. 6196— 100 ft. ....Dealer Cost .75  
 No. 6197— 500 ft. ....Dealer Cost 3.75  
 No. 6198—1000 ft. ....Dealer Cost 7.20



# ICA INSULINE RADIO PRODUCTS ICA

## TELEVISION ACCESSORIES

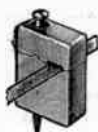
### RUBBER STAND-OFF INSULATOR

Fits antenna mast with a snug grip to assure minimum shifting of lead-in cable. Made of long-lasting, tough, natural rubber. Insulates antenna from local grounded objects. Suitable for 300 ohm twin lead. For masts 1" to 1 1/4" diameter.



No. 6125....Dir. Cost \$4.80 C

### CERAMIC STAND-OFF INSULATOR



Moisture-proof for outdoor use. Offers rigid non-swaying grip on wire without insulation damage. For 300 ohm twin lead. With heavy screw for wood or masonry. Ideal for long transmission lines.

No. 6126....Dir. Cost \$10.80 C

### POLYSTYRENE TWIN-LEAD INSULATOR

For either indoor or outdoor application. Maintains firm non-slipping grip without insulation damage. Designed for 300 ohm twin-lead. Weather-resistant plastic. Convenient base hole.



No. 6127.....Dealer Cost \$7.80 C

### INSULATED SCREW EYES



Dual purpose — for either twin-lead or coaxial cable. Low-loss polyethylene insulation minimizes signal strength loss.

No.	Dealer Cost
*6119—3 1/4" L.....	\$ .05
*6278—As above, Less Insert.....	3.60 C
*6120—7" L.....	.09
*6279—As above, Less Insert.....	4.20 C
*6262—3 1/2" L.....	.07
*6281—As above, Less Insert.....	3.60 C
*6264—7" L.....	.11
*6283—As above, Less Insert.....	4.20 C

\*\*Wood-screw threaded.  
\*\*Machine-screw threaded.

### INSULATED SCREW EYES

Stand-off screw eye with convenient mast fitting metal loop for snug securing of transmission line. Fits 1" masts. For twin-lead or coaxial cable.



No.	Dir. Cost
6263—3 1/4" L.....	\$.09
6265—7" L.....	.13

### T-TYPE SCREW EYES

Secures double lead-ins with efficient spacing.



No.	Dir. Cost
*6256—3 1/4" L.....	\$.17
*6258—7" L.....	.20
**6260—3 1/2" L.....	.17
**6261—7" L.....	.20

\*\*Machine screw threaded.  
\*\*Wood screw threaded.

### T-TYPE SCREW EYES

Same as No. 6256 with mast-fitting metal loop for easy, secure installation. Fits 1" mast.



No.	Dir. Cost
6257—3 1/4" L.....	\$.23
6259—7" L.....	.26

### MAST STAND-OFF



For quick and easy set-up. Assures sway-free line; for twin-lead or coaxial cable. Polyethylene insert. Adjustable strap with self-locking feature permits use on masts up to 2 1/4" diameter.

No.	Dir. Cost
No. 6274—3 1/2" Stand-off.....	\$11.40 C
No. 6275—7" Stand-off.....	15.00 C

### SNAP-ON MAST STAND-OFF

For twin-lead or coaxial cable. Easily snaps on mast. Low-loss polyethylene insert.



No.	Dir. Cost
For 1 1/4" Mast	
No. 6269—3 1/2" Stand-off,	
Dir. Cost \$6.00 C	
For 1 1/2" Mast	
No. 6270—3 1/4" Stand-off.....	Dir. Cost 7.80 C

### MAST STAND-OFF



Has 3 1/4" pointed shaft for use on wood surfaces. Low-loss polyethylene insert. For twin-lead or coaxial cable.

No. 6271.....Dealer Cost \$3.60 C

### TRIANGULAR EYE BOLT



Sturdy, cadmium-plated steel eye bolts. A handy item for television antenna installation problems. 4" long; 1/4"-20 thread.

No. 6289.....Dealer Cost \$6.00 C

### GUY WIRE ANCHOR



When guy wire must be added to existing antenna installations, the ICA wire anchor may be added by drilling necessary holes at desired point on the mast. Suitable for any type of guy wire. Nut and washer supplied for secure fixing.

No. 6142.....Dealer Cost \$0.60

### DOUBLE POLE DOUBLE THROW SWITCHES



Ideal for television needs. Black bakelite base is 2 3/4" x 1 1/4".

No. 1219. Dir. Cost \$.81

Same as above with PORCELAIN Base.  
No. 238....Dir. Cost \$.54

### MINIATURE SWITCH

Double pole double throw. Black bakelite base is 1" x 1 1/4". Can be mounted on panel.

No. 2225.....Dealer Cost \$.45  
See page U-68 for complete line of switches.



### ICA AIRCRAFT TYPE INSULATOR

A strain insulator made of Insulex. Particularly adaptable for aircraft, automobile and TV installation. Two 1/4" mounting holes. Distance between holes 3/4".



No. 2325.....Dealer Cost \$.07

### TWIN-LEAD CONNECTOR



Fully-insulated, bakelite, solderless, 2-section connector for 300-ohm twin-lead wire. Skillfully designed. Convenient. Simplifies connecting or disconnecting of lead (without use of tools) necessary when moving television receiver or for other reasons. Will prove handy on many occasions.

No. 6172.....Dealer Cost \$.84

### Display Card of 10 above

No. D-76172.....Dealer Cost \$8.40

### THE NEW ICA TELEVISION FILTER



A sensational improvement that adds to the enjoyment of television reception. A scientifically compounded Filter... easy to install... suitable for every type of receiver.

The ICA Filter offers these outstanding television viewing features: Dissolves fuzzy grays... snaps up blacks... sharpens detail... restful tinting cuts down eyestrain... eliminates glare and room-light interference... reduces flickering and picture grain... unbreakable. Excellent for daylight reception.

No.	Dealer Cost
6176—7" tube size.....	\$.87
6177—10" tube size.....	1.17
6173—10" tube size ROUND.....	1.66
6178—12" tube size.....	1.77
6174—12 1/2" tube size.....	2.50
6181—12 1/2" tube size ROUND.....	1.99
6179—15" tube size.....	2.37
6175—16" tube size.....	4.58
6182—16" tube size ROUND.....	2.58
6180—20" tube size.....	3.57

# WORKSHOP TELEVISION ANTENNAS and ACCESSORY EQUIPMENT

## DUBL-VEE TV ANTENNA (MODEL VV)

The DUBL-VEE (Model VV) is the first TV antenna to use the end-fire principle with no parasitic elements. With this radical innovation, Model VV sets a new standard in antenna engineering, design and performance. All-channel, higher gain, sharper directivity, and closer match assure you

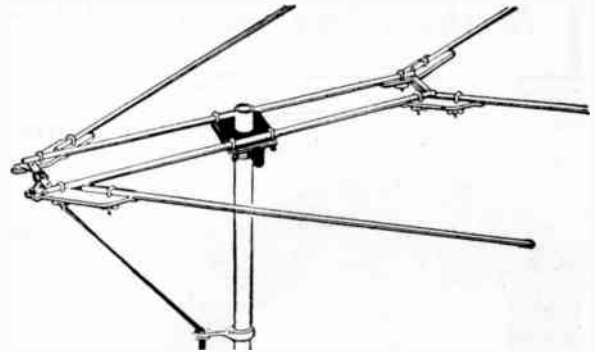
of superlative reception — clearer, steadier, sharper pictures. Its rugged construction resists corrosion and is equal to the most severe weather conditions. Assembly is easy and quick — a matter of seconds — saves time, expense, and trouble.

### SENSATIONAL GAIN

The remarkably high gain extends your receiving distance and makes your pictures better. Model VV was especially designed for difficult-to-receive high channels but has high gain on the low channels, too. A single-array Model VV *actually outperforms* double-stacked models of most other types.

Channel	Gain*	
	Model VV	Model 2 VV
2	1.5	2.5
3	2.0	3.5
4	2.5	5.0
5	3.5	6.0
6	4.0	7.0
7	6.0	9.5
8	6.5	9.5
9	7.0	9.5
10	7.5	10.0
11	7.5	10.0
12	7.5	9.5
13	7.0	9.5

\* Actual Measured Gain



### SHARP DIRECTIVITY

The extremely sharp directivity of the Model VV on all channels concentrates power on your receiver, reduces noise and interference to give you better pictures.

### CLOSE MATCH

The Model VV is matched directly to 300-ohm line for optimum transmission — a close match to eliminate a source of ghosts. Matching is even better for Model 2VV — comparable to the very best commercial antenna.

## SOLDERLESS CABLE FITTINGS

### Silver Plated Solderless Cable Connector (Male)

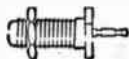
Model  
W-50



Used with W-59 (RG-59/U) coaxial cable. Specially slotted to withstand considerable strain. Mates with W-60 receptacle (on R-4A switch) and W-80 junction listed below. Individually packaged and plainly marked. List Price \$0.60

### Silver Plated Chassis Receptacle (Female)

Model  
W-60



Mates with W-50 cable connector. For chassis or panel mounting. Threaded stem  $\frac{3}{8}$  inch long. Soldering terminal protrudes from rear. Individually packaged and plainly marked. List Price \$0.80

### Silver Plated Cable or Panel Junction (Female)

Model  
W-80



Mates at either end with W-50 male connector. A complete splice requires one W-80 junction and two W-50 connectors which must be ordered separately. Each W-80 individually packaged and plainly marked. List Price \$1.00

### Cable Adaptor

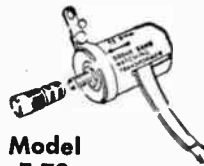
Model  
W-100



Required when changing from larger size W-11 (RG-11/U) or W-8 (RG-8/U) to smaller W-59 (RG-59/U) coaxial cables. No soldering necessary. W-50 cable connector furnished. Individually packaged and plainly marked. List Price \$2.50

## ACCESSORIES

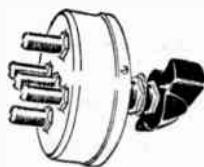
### Matching Transformer



Model  
T-72

Matches 72 ohm coaxial cable such as Workshop W-59 (RG-59/U) to 300 ohm receivers. Voltage step up of 2 : 1, with a flat response over the TV channels from 52-216 mos. A W-50 solderless cable connector is furnished. Size 2 inches long, 1-inch diameter. Strap provided for grounding and mounting container on receiver chassis. Negligible mismatch when used with W-8 52-ohm coaxial cable and W-100 adaptor. Individually packaged. List Price \$4.00

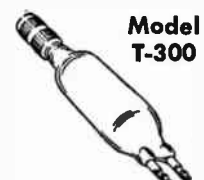
### New Coaxial Switch (SP4T)



Model R-4A

This virtually lossless, constant impedance switch will connect any one of four single-channel TV antennas to a receiver. By simply using additional switches it can also be used for demonstrating any number of TV receivers in a display room, or for low-level audio applications.

Receptacle fittings mate with W-50 solderless connectors for W-59 cable and must be ordered separately. Decals are supplied for panel marking of TV channels. Only one  $\frac{7}{16}$ -inch hole need be drilled for panel mounting. Size— $2\frac{1}{2}$  inches front to back; 2-inch diameter. Individually boxed. List Price \$12.00



Model  
T-300

### Exterior Matching Transformer

Completely weatherproof device for converting 72 ohm antennas for use with inexpensive 300 ohm Twin Lead transmission line at reasonable efficiency. Can also benefit of 72 ohm coaxial cable. Individually packed. List Price \$3.50

## THE WORKSHOP ASSOCIATES, INC.

135 Crescent Road, Needham 94, Mass.

Specialists in High-Frequency Antennas

*New!*

# TELEVISION ANTENNA ROTATOR

## by alliance

### Makes the Image Clear - Reduces Interference!

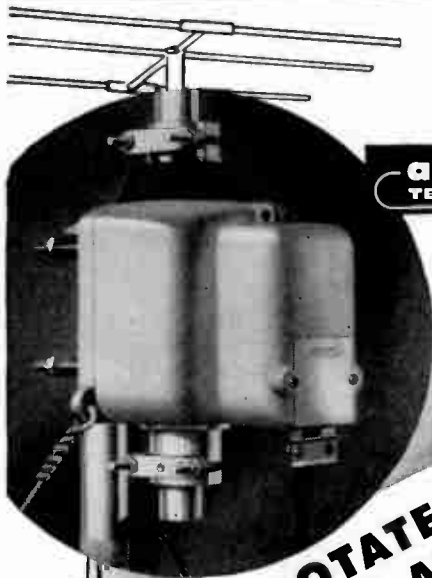
Operates in any weather  
Fits most types of T.V. and F.M. antenna

Approved by  
Underwriters'  
Laboratories!

This new Directional Aid means instant "arm-chair" control for Television Antenna. Dealers and Service Shops can order from their jobber now!

CONTROL BOX  
Size: 5" x 5" x 4"

**Announcement!**  
New deluxe Tenna-Rotor with indication control case (Model DIR) now available. . . . List Price \$44.95



GETS **STRONGER SIGNALS**

**ROTATES TV AND FM ANTENNA**

LIST PRICE **\$34.95**



Model  
A T R  
Size of  
rotor  
unit  
7 3/4"  
x 5 1/4" x  
8"

Ship-  
ping  
weight  
12 lbs.

Alliance  
4-conductor  
cable with  
"ZIP" feature  
makes for  
faster  
installations!

• The Alliance Tenna-Rotor is an antenna rotator designed to rotate the beam antenna in FM, Television and other high frequency radio applications. It consists of the rotator which is mounted on the antenna mast and a control box placed adjacent to the receiver.

The rotator unit, fully enclosed in a split zinc die-cast housing, is an electrically driven rotor—actually a rotating hollow shaft, into which the antenna center post is clamped. A four-conductor cable connects the rotator with a plastic control box which plugs into any 60-cycle 110-volt AC house circuit. A three-position selector switch controls the rotator. Throwing the switch to the right or left rotates the Rotor shaft clockwise or counter-clockwise through a complete arc of 365 degrees.

At the position of optimum reception, the switch is thrown to the center OFF position. Thus, Tenna-Rotor provides positive, instant control of rotation, enabling the operator to select the exact position for "peaked" reception! An automatic signal light illuminates a screen on the panel and tells when the limit of travel in either direction is reached. Tenna-Rotor is factory lubricated for life . . . designed for years of rugged service, works in any weather and the rotor unit resists corrosion. Tenna-Rotor reduces interference, expands the range and improves the performance of TV and FM installations. Amateurs can use it for trans-

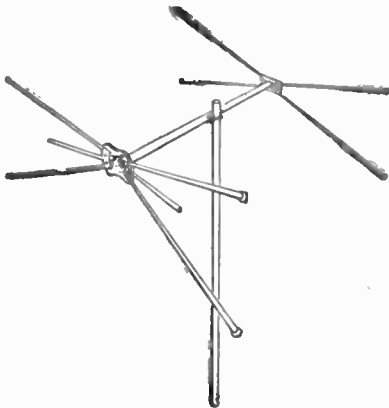
mission and reception with a special accessory thrust bearing (List Price \$4.95 additional) which will handle most three element beams with a thrust load up to 200 lbs.

### SPECIFICATIONS Electrical

- Input volts—110 volts 60 cycle AC
- Input power—30 watts
- Clockwise or counter-clockwise rotation
- Instantly reversible motor
- Minimum coast to stop
- No receiver interference

### Mechanical

- Positive mechanical stop at end of rotation
- Rotates through 365 of arc at speed of approx. 1 r.p.m.
- Factory lubricated for life
- Moisture sealed
- Corrosion resistant components throughout—  
—cadmium plated parts
- Maximum allowable antenna weight—20 lbs.
- Maximum O.D. for antenna mast—1 3/8"
- Interconnecting cable—4 conductor No. 20 gauge
- Rotator Size—7 3/4" x 5 1/4" x 8"
- Control Case Size—5" x 5" x 4"
- Approx. Shipping Wt., 12 lbs.



### WALSCO V-KING—No. 4060

Combines high gain and directivity on all channels with ease of assembly and low price. Excellent reception reported at 50 miles. Minimum coupling loss to 72, 150 and 300-ohm transmission lines. Low standing wave ratio. Several **EXCLUSIVE WALSCO** features: Silicone-treated styron-moulded insulator, reinforced elements made of marine-type high-tensile chromium-aluminum alloy with a yield point 94% higher than ordinary aluminum, butt-seamed tubing to assure highest elasticity. Assembles in few minutes, with wrench supplied with each antenna. Guaranteed for one year.

Packed individually or one dozen to a "Bulk Pack Carton."

Cat. No.	List Price
4060 —Without Mast .....	\$ 8.30
4060-5—With 5-ft. Mast.....	11.00
4060-8—With 8-ft. Mast.....	12.00

#### SPECIAL DISCOUNTS TO QUANTITY USERS

FOR STACKING KITS SEE NEXT PAGE

### WALSCO V-KING DUAL STACK—No. 4062

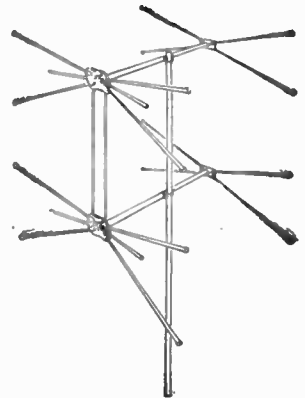
High gain and directivity on all channels. Excellent reception reported at over 100 miles. Peak signal-to-noise ratio due to low inception angle. Minimum coupling loss to 72, 150 and 300-ohm transmission lines. Low standing wave ratio. Same **EXCLUSIVE WALSCO** features as described in Model 4060.

Packed individually or in "Bulk Pack Carton" of 6.

Cat. No.	List Price
4062 —Without Mast .....	\$17.75
4062-10—With 10-ft. Mast.....	23.00

#### SPECIAL DISCOUNTS TO QUANTITY USERS

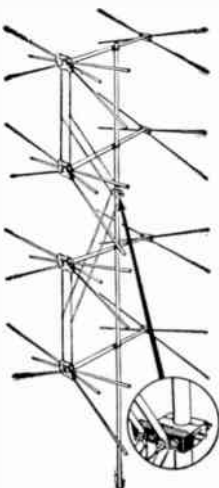
FOR STACKING KITS SEE NEXT PAGE



### WALSCO V-KING, 4-BAY STACK—No. 4064

Outstanding gain, high directivity and excellent ghost rejection. Excellent picture and sound reception reported in remote areas 150 miles away. A truly all-band antenna, effective on all present TV channels. Center impedance is 150 ohms. Both 72 and 300-ohm transmission lines may be connected directly to antenna without matching stubs. Silicone-treated styron-moulded insulator, marine-type high-tensile chromium-aluminum alloy, butt-seamed tubing. Guaranteed for one year.

Cat No.	List Price
4064—No Mast.....	\$39.90



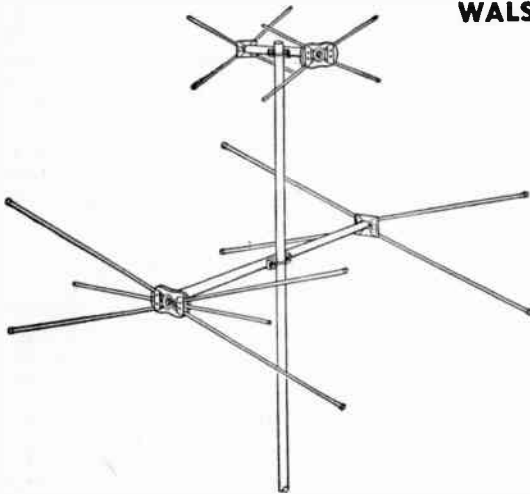
### WALSCO HI-BAND V-KING—No. 4070

For exclusive use on channels 7 to 13. Features all advantages of standard V-Kings. Especially recommended to make up dual orienting-arrays. Two high-band V-Kings, stacked (using stacking kit Cat. No. 4070-2) make a very effective high-gain array. One year guarantee.

Cat. No.	List Price
4070—No Mast.....	\$4.60



**WALSCO DUAL-ORIENTING V-KING ANTENNA—No. 4065**



An improved Dual-Orienting Array. Recommended for locations where one or more high-band channel transmitters are in a different direction from the other stations.

Has the following advantages over the conventional folded dipole high-low array:

1. The lower antenna is an all-band array—an important feature when some low and high-band stations are in the same direction.
2. Higher gain on all channels.
3. More uniform response on both bands.

Cat. No.	List Price
4065 — Without Mast .....	\$12.50
4065-8—With 8-ft. Mast .....	16.80

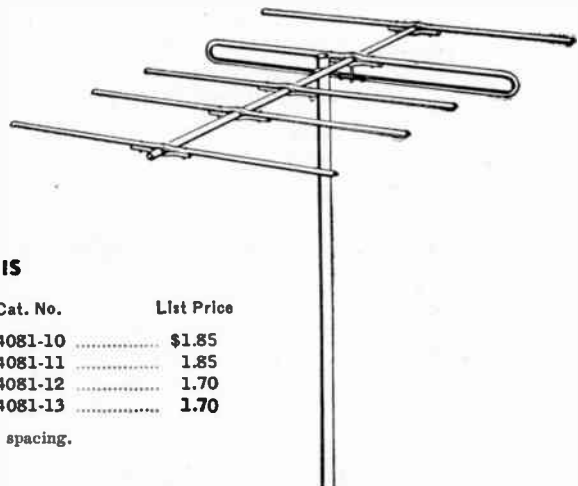
**WALSCO STACKING KITS**

	Cat. No.	List Price
2-Bay Stacking Kit (¼ wave matching stubs) to convert two 4060 Single V-Kings into one Dual Stack.....	4005-6	\$1.45
4-Bay Stacking Kit, to convert two 4062 Dual Stacks to one 4064 4-Bay Stack.....	4005-5	\$5.30
2-Bay Stacking Kit for Hi-Band V-Kings, No. 4070 (½ wave spacing).....	4070-2	\$1.30

**WALSCO "5-ELEMENT YAGI"—No. 4080**

Single-channel high-gain antenna of optimum performance. Designed for low signal areas or where interference makes a highly-directive array necessary. Cut for each channel. Improved signal-to-noise ratio. Minimizes co-channel or adjacent channel interference. Sharp forward pattern with negligible pick-up from sides or rear. Rugged aluminum-alloy construction. High-band models completely assembled; low-band models require only attaching of elements to cross-arm. No tools required.

Cat. No.	For Channel	List Price	Cat. No.	For Channel	List Price
4080-2	2	\$18.75	4080-8	8	\$11.10
4080-3	3	17.90	4080-9	9	11.10
4080-4	4	17.90	4080-10	10	10.80
4080-5	5	15.85	4080-11	11	10.80
4080-6	6	15.85	4080-12	12	10.70
4080-7	7	11.50	4080-13	13	10.70



**STACKING BARS FOR WALSCO YAGIS**

Cat. No.	List Price	Cat. No.	List Price	Cat. No.	List Price
4081-2 .....	\$2.60	4081-6 .....	\$1.85	4081-10 .....	\$1.85
4081-3 .....	2.10	4081-7 .....	1.85	4081-11 .....	1.85
4081-4 .....	2.10	4081-8 .....	1.85	4081-12 .....	1.70
4081-5 .....	1.85	4081-9 .....	1.85	4081-13 .....	1.70

Channel 2-6 Bars are ¼ wave spacing. Channel 7-13 Bars are ½ wave spacing.



### WALSCO FLEXITUBE Twin-Lead Size

Special clear, vinylite tubing, weather-resistant. Slips easily over standard 300-ohm twin-lead. Prevents deterioration of lead-in under adverse climatic conditions. Also used as protection when installing lead close to walls, over metal gutters, etc.

Cat. No.	List Price
609-75—Hank of 75 ft.....	\$5.93/hank
(Standard Pack: 12 hanks)	

### REPLACEMENT ELEMENTS FOR CONICAL ANTENNAS

$\frac{3}{8}$ " diameter elements made of butt-seamed high-strength chromium-aluminum alloy. One end reinforced, other end crimped, on 44" and 48" length.

Cat. No.	List Price
4004-20 —20" long, each.....	\$0.20
4004-44A—44" long, each.....	0.55
4004-48A—48" long, each.....	0.60

### WALSCO GUY-WIRE RING



Made of aluminum-alloy. Very strong and highly corrosion-resistant.

Cat. No.	List Price
4005-1 —For 1" Diam. Masts.....	\$0.40
4005-26—For 1 1/4" Diam. Masts.....	0.45
(Standard Pack: 25)	

### ANTENNA INSULATOR ASSEMBLY

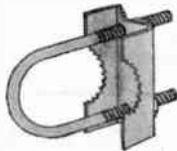
Complete insulator with holding straps, clamps, screws, nuts and lugs for the V-King Antennas.

Cat. No.	List Price
4005-11A .....	\$1.60

### U-BOLT BRACKET ASSEMBLY

Made of serrated steel, cadmium-plated with cadmium-plated steel U-bolts; fits masts up to 1 1/2". Grips mast tightly, will not slip or turn.

Cat. No.	List Price
4005-20 .....	\$0.50
(Standard Pack: 25)	



### MAST SWIVEL BASE

Heavy all-angle cadmium-plated steel base.



Cat. No.	List Price
4005-2 —For 1" Diameter Masts.....	\$0.75
4005-27—For 1 1/4" Diameter Masts.....	0.90
(Standard Pack: 25)	

### WALSCO ROOF PATCHING COMPOUND

For waterproofing around mast-hases, screw-eyes or wherever roof is punctured. Made of highest quality asphalt base with fibred asbestos. Easy to apply with applicators furnished with each can.

Cat. No.	List Price
1548—16 oz. can.....	\$0.90
(Standard Pack: 24)	

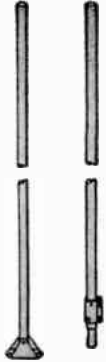


### WALSCO ANTENNA MASTS AND EXTENSIONS

#### STANDARD MASTS.

Made of seamless hard-drawn aluminum alloy 1 1/4" O.D. Light, rigid and very resistant to corrosion.

Cat. No.	List Price
4025-5 —5-ft. Mast complete with base and guy ring .....	\$3.05
4025-8 —8-ft. 2-section Mast with base and guy ring .....	4.35
4025-10—10-ft. 2-section Mast with base and guy ring .....	5.30
4026-5 —5-ft. extension, telescoping fit for above masts. Extra guy ring included	2.50



#### HEAVY DUTY MAST SECTIONS

Made of heat-treated structural quality aluminum-alloy. 1 1/4" O.D. with extra heavy wall thickness. May safely be stacked to 30 ft. if properly guyed.

Cat. No.	List Price
4027-6—6-ft. section with insert and guy ring sleeve for joining. Base not furnished.....	\$4.45



#### 40-FT. STEEL MASTS

Sectional, telescoping steel mast. Weatherproof, galvanized construction. Special design allows erection by one man. Complete with Guy Rings and instructions. Shipping weight: approximately 35 lbs.

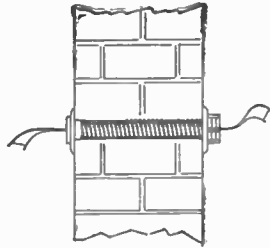
Cat. No.	List Price
4028-40—40-ft. Mast .....	\$32.50



### WALSCO FEED-THROUGH BUSHING FOR 300-OHM TWIN-LEAD (Patent Pending)



The ideal method for bringing TV and FM antenna Twin-Lead into the house. Weather-tight installation is now possible. Eliminates bringing the wire under the window. Attractive professional appearance on inside and outside of house. Supplied in 8 5/8" length to fit most walls. Easy to cut off if too long. Low-loss polystyrene holds line securely but will not change line impedance.



Cat. No.	List Price
4011—Feed-through Bushing.....	\$ 1.00
4011D—Display of 12 Bushings.....	12.00

### WALSCO ALUMINUM GROUND WIRE



High-conductivity, solid aluminum ground wire. Very soft and easy to install. 1/8" thick (No. 8 B & S gauge). For grounding of antennas.

Cat. No.	List Price
1500—100-ft. coil .....	\$ 2.50
1505—500-ft. coil .....	11.65

### WALSCO GUY WIRE

High-grade galvanized steel stranded Guy Wire, fully rust-resistant, excellent for masts and towers. Put up in 200-ft. continuous lengths, wired off into four 50-ft. coils.



Cat. No.	List Price
1510—4 Strand No. 20; 3/16" diam.....	\$1.30 per C ft.
1512—6 Strand No. 20; 1/8" diam.....	1.75 per C ft.

(Standard Pack: 1200 ft.)

### WALSCO SCREW EYES



Heavy steel cadmium-plated screw eyes for securing of guy wires.

Cat.No.	List Price	
	Each	Per Gross
1540—Over-all length 2".....	\$0.04	\$4.90
1542—Over-all length 3".....	0.07	7.50

(Standard Pack: 144)

### WALSCO STAND-OFF INSULATORS

Made of high-grade polyethylene insulator, precision molded for easy insertion of Twin-Lead or RG-59/U co-ax. Rust-resistant galvanized steel screw eyes.



#### Wood Screw Type

Cat. No.	Length	List Price
1560-1	3 1/2"	\$0.06
1560-3	7 1/2"	0.08

#### Mast Type

(Fits any size mast to 2 1/8" O.D.)

Cat. No.	Length	List Price
1565-1	3 1/2"	\$0.19
1565-3	7 1/2"	0.26

(Standard Pack: 100)



BULK QUANTITY PRICES ON REQUEST

### WALSCO PERFORATED STEEL STRAP



3/4" wide, galvanized strapping for fastening masts to chimneys, vent-pipes, etc. Flexible and strong. 1/4" diam. holes punched 3/4" apart.

Cat. No.	List Price
1518—10-ft. coil .....	\$0.65

(Standard Pack: 25 rolls)

### WALSCO TURNBUCKLES

Strong and rustproof. Indispensable for high mast and tower installations.

Cat. No.	Length Open	Length Closed	List Price
1533	4 1/4"	3"	\$0.25
1535	7 1/2"	5 1/2"	0.35
1537	10 1/2"	7 1/2"	0.85

(Standard Pack: 1 Dozen)



### WALSCO NO-LOSS TWIN-LEAD STRAP

All plastic clamp for 300-ohm Twin-Lead. Weather- and moisture-resistant for use inside or out. Will not affect line impedance. Rounded edges make damage to insulation impossible.

Cat. No.	List Price, per hundred
1520—Twin-Lead Strap.....	\$5.50

(Standard Pack: 100)



### WALSCO TWIN-LEAD WIRING NAILS

Designed for attaching 300-ohm leads to walls, moldings, etc. Ornamental head greatly improves the appearance of the installation. WALSCO nails have no appreciable effect on the impedance of the line as the heads consist almost entirely of insulating material.



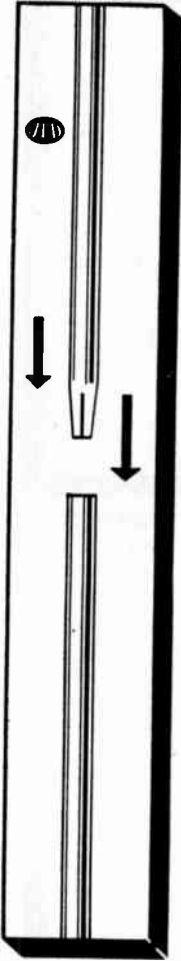
Cat. No.	Approx. Quantity per Pkg.	List Price
12552	35	\$0.40

(Standard Pack: 20 Pkgs. on Display Card or in Display Box)

2552-99	200	\$1.65
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(Standard Pack: 12 Pkgs.)

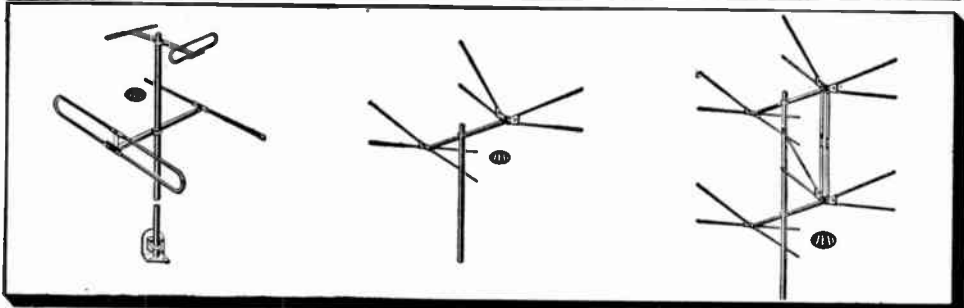
2552-BU—Bulk Pack—Minimum quantity: 1000.....\$7.00 per M



**JFD  
EXTENSION  
MASTS**

Elevate all antennas for stronger signal pick-up. Unique "jam-fit" stacking of sections made simple by swedged ends that lock quickly and permanently in place with seams of lower mast sections. Designed to fit almost any type popular mast. No drilling, shaping, or special tools required for installation. Absolutely no external coupling accessories necessary. Raises television and FM antennas simply, safely and swiftly. Thousands in successful use today. Made of heavy-duty corrosion-resistant steel.

- |                 |        |
|-----------------|--------|
| No.             | List   |
| M55 .....       | \$1.40 |
| (5'-1 1/4" OD)  |        |
| M100 .....      | \$2.80 |
| (10'-1 1/4" OD) |        |



**JFD "RANGER"  
HI-LO FOLDED DIPOLES**

Pre-assembled, no hardware bag, all-channel reception. Heavy-duty construction insures top performance and rugged dependability. Duo-Orienting upper and lower bays. Complete with mast, all-angle base mount and twin lead jumper.

- |                               |         |
|-------------------------------|---------|
| No.                           | List    |
| R5 (with 5' mast) .....       | \$12.35 |
| R55 (with 10' mast) .....     | 13.75   |
| R58 (with 8' mast, less base) | 12.50   |

**JFD "D-Xer"  
ALL-BAND CONICAL**

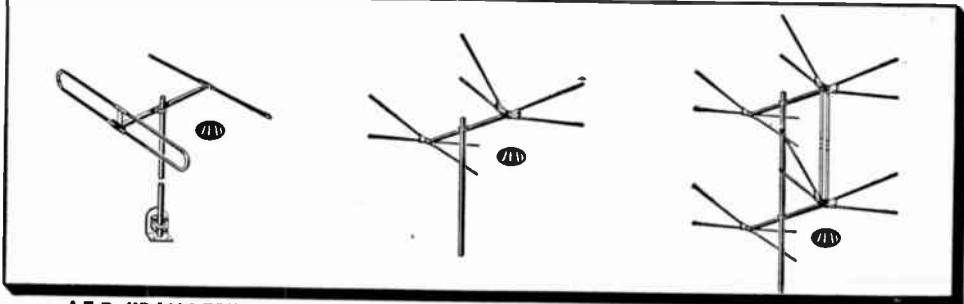
No better conical at any price. The only conical with reinforced elements. Heavy-wall aluminum tubing reinforced with wooden dowels eliminate element sway, bend or whip. Exceptionally high gain on all channels. Minimized ghosts. Not just a fair-weather antenna but a year-round, all-weather conical.

No. TA160 (less mast) List \$13.95

**JFD "Double D-Xer"  
STACKED CONICAL**

Employs same outstanding design and construction as TA160. Stacked bays offer higher DB and fewer multi-path reflections on both bands. The only conical with reinforced elements. A year-round, all-weather conical.

- |                          |         |
|--------------------------|---------|
| No.                      | List    |
| TA161 (1/4 wave. stack.) | \$29.25 |
| (less mast)              |         |
| TA162 (1/2 wave. stack.) | 30.90   |
| (less mast)              |         |



**JFD "RANGER"  
FOLDED DIPOLE**

Engineered for performance in strong and moderate signal areas. Ruggedly constructed. Insulated with Bakelite. Delivers top reception on Channels 1 to 6 plus FM. 300 ohm impedance. No hardware bag. Complete with Mast and All-Angle Base Mount.

- |                           |        |
|---------------------------|--------|
| No.                       | List   |
| R4 (with 5' mast) .....   | \$9.35 |
| R44 (with 10' mast) ..... | 10.75  |

**JFD  
"COMMANDAIR" CONICAL**

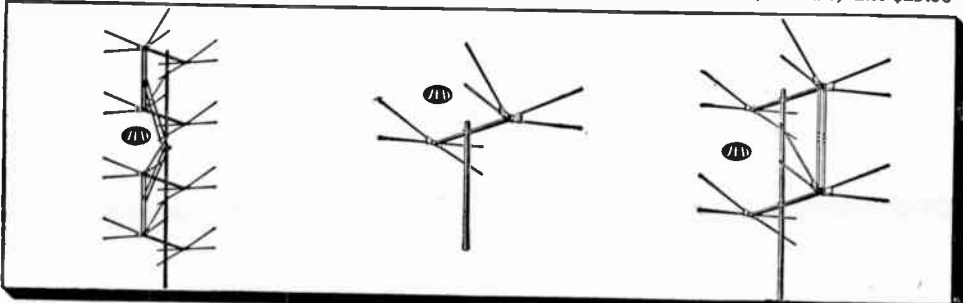
The lowest-priced, highest-value all-aluminum conical line on the market. Heavy-duty element brackets with extra-long gripping surface. Dipole insulators made of low-loss bakelite. Improved signal-to-noise ratio on all channels. Completely pre-assembled. No hardware bag.

No. C660 (less mast) List \$10.95

**JFD STACKED  
"COMMANDAIR" CONICAL**

Another leader from the lowest-priced, highest value all-aluminum conical line on the market. 1/4 wavelength stacked for higher gain, less noise and fading. Couples directly to 72, 150 or 300 ohm transmission lines with minimized energy transfer loss. Completely pre-assembled. No hardware bag. Jumper Bars included.

No. C661 (less mast) List \$23.00



**JFD "SUPER-D-Xer"  
DOUBLE STACKED  
CONICAL**

Delivers unsurpassed gain for long-distance reception. Opens "impossible" areas to brilliant TV reception. Consists of two 1/4 wavelength stacked TA161 arrays, two sets of J160 jumper bars and one J162 mast-supported aluminum jumper harness. The only conical with reinforced elements. Not just a fair-weather antenna but a year-round, all-weather conical.

No. TA164 (less mast) List \$61.80

**JFD  
"COMMANDAIR" CONICAL**

Built for brilliant performance at rock-bottom cost. Better all-channel performance with less fading and fewer ghosts. Completely corrosion resistant, will withstand year-round weather conditions. The finest conical available at so low a price.

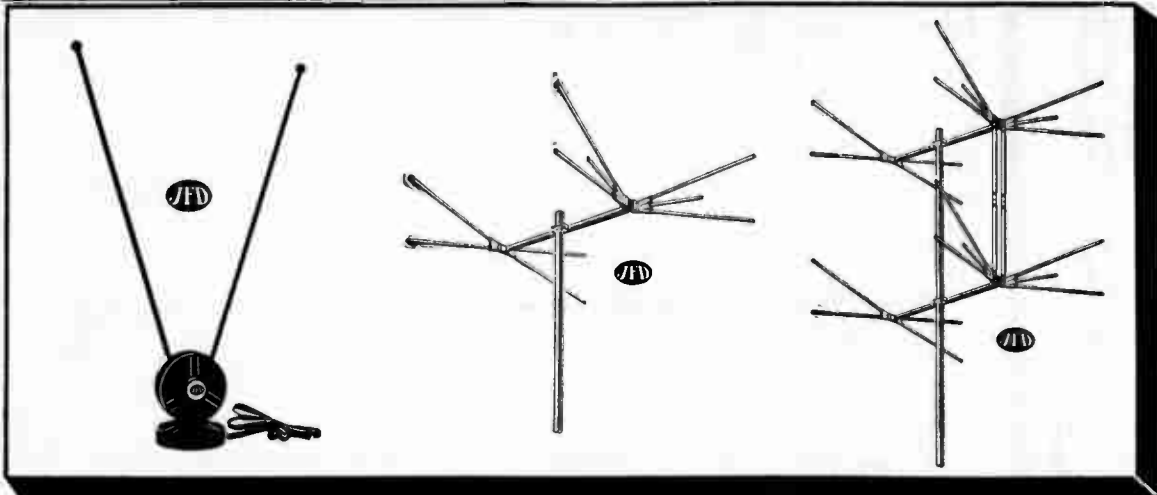
No. C360 (less mast) List \$9.95

**JFD STACKED  
"COMMANDAIR" CONICAL**

Another JFD "Economy" conical built for top performance at low cost. 1/4 wavelength stacked bays provide greater signal pick-up with reduced multi-path reflections. Fully corrosion-resistant. Priced for low-cost installations. Jumper bars included.

- |                               |         |
|-------------------------------|---------|
| No.                           | List    |
| C361 (1/4 wave. stack.) ..... | \$20.95 |
| (less mast)                   |         |





### JFD "PANORAMA" INDOOR TV ANTENNA

Handsome "Tip-Proof" weighted base of satin-finish Mahogany plastic matches finest furniture. All-channel reception, 3-section, triple-chrome plated brass telescopic dipoles can be adjusted for maximum reception. Felt pad protects furniture finish. Complete with 300 ohm twin lead.

No.	List
TA135 .....	\$6.95

### JFD "COMMANDAIR" CONICAL

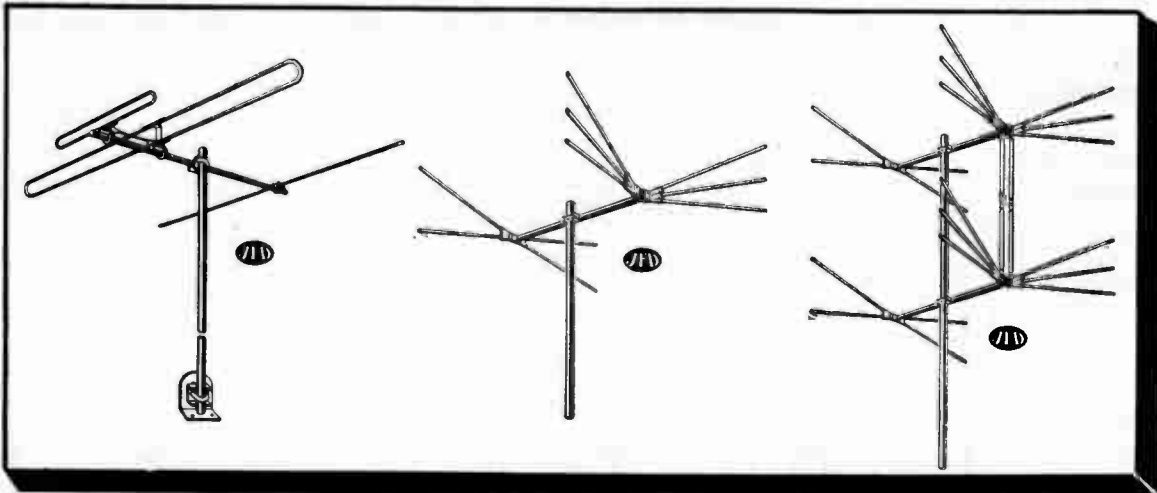
All-aluminum construction. Employs high frequency elements for improved response on upper channels. Heavy-duty element bracket. Pre-assembled, no hardware bag. Constant center impedance on all channels. Same array also available in partial steel construction.

No.	List
C670 (All-Aluminum) .....	\$11.50 (less mast)
C370 (Partial Steel) .....	10.50 (less mast)

### JFD STACKED "COMMANDAIR"

All-aluminum construction. High frequency elements deliver sharper upper-channel reception.  $\frac{1}{4}$  wavelength stacked for higher gain, less noise and fading. Pre-assembled, no hardware bag. Matches 72, 150 or 300 ohm impedances. Also available in partial steel construction. Includes Jumper Bars.

No.	List
C671 (All-Aluminum) .....	\$24.05 (less mast)
C371 (Partial Steel) .....	22.10 (less mast)



### JFD STRAIGHT LINE HI-LO ARRAY

Highly directional. Maintains high front-to-back and front-to-side ratios on all channels. Adjustable U-bolt clamp design permits wide adjustment of elements for polarized and directed reception. Supplied complete with 5' rust-resistant  $1\frac{1}{4}$ " Mast, All-Angle Base Mount and Twin Lead Jumper.

No.	List
TA150 .....	\$15.30

### JFD "COMMANDAIR" CONICAL

All-aluminum construction. Third dipole element provides exceptional broad band response across both bands. Uniform impedance eliminates line matching losses. Pre-assembled, no hardware bag. Also available in partial steel construction at "economy" price.

No.	List
C680 (All-Aluminum) .....	\$12.25 (less mast)
C380 (Partial Steel) .....	11.25 (less mast)

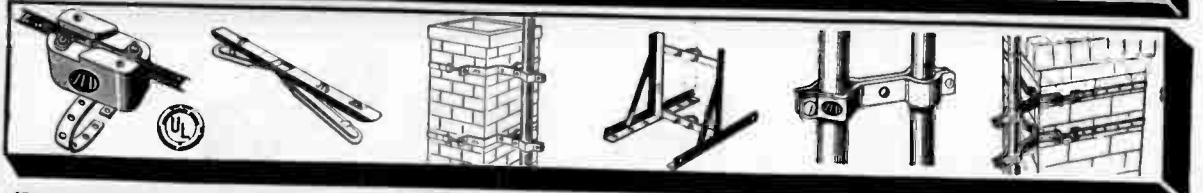
### JFD STACKED "COMMANDAIR"

All-aluminum construction. Delivers excellent, all-channel broad band response by means of third dipole element.  $\frac{1}{4}$  wavelength stacked for greater DB, reduced noise and fading. Pre-assembled, no hardware bag. Constant center impedance. Also available in partial steel construction. Jumper Bars included.

No.	List
C681 (All-Aluminum) .....	\$25.60 (less mast)
C381 (Partial Steel) .....	23.60 (less mast)



# TV BRACKETS & ACCESSORIES



### JFD TWIN LEAD LIGHTNING ARRESTER

Approved by Underwriters' Laboratories for Outdoor - Indoor use in U.S.A. Approved by Canadian Standards Association for use in Canada.

No.	List
AT102 (for \$2.25 reg. twin lead)	
AT103 (for hvy. 2.25 & tubular twin lead)	

### JFD TWIN LEAD STRIPPER

Strips and slits most types of Twin Lead. Simple to use. Does not crush wire. Made of nickel-plated steel.

No.	List
WS1	\$ 1.30
WS12 (12 with Display)	15.60

### JFD ANTENNA CHIMNEY MOUNT

Fits any chimney. No special tools or drilling necessary. Separate sections permit unlimited spacing between brackets. Holds masts 1/2" to 1 1/2" OD. Supplied with two 12' steel bands and hardware.

No.	List
BR2	\$2.50

(2 per set)

### JFD ANGLE STEEL BASE MOUNT

Rugged trussing and welded construction offers maximum support for any size mast. Special design permits permanently secure mounting. Made of heavy gauge galvanized steel. 12" by 12" in size.

No.	List
BR3	\$15.00

### JFD MAST BRACKET

Joins 3/4" to 1 1/4" (OD) Masts. Ideally suited for secure attachment of high frequency antennas to original mast. Made of galvanized steel. Two brackets per set.

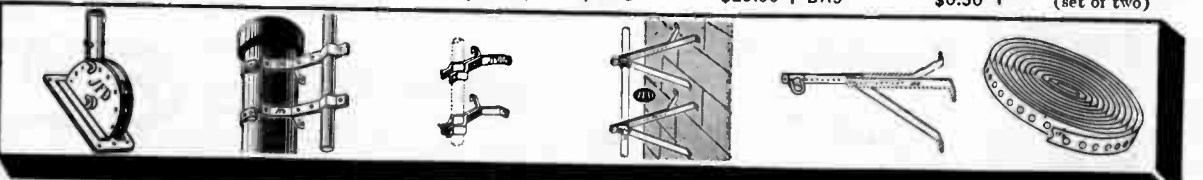
No.	List
BR5	\$0.50

### JFD CHIMNEY MOUNT

Can be erected in 5 minutes. No experience, special tools or drilling necessary. Holds masts from 1/2" to 1 1/2" OD. Made of corrosion-resistant steel. Complete with two 12' steel bands.

No.	List
BR7	\$4.25

(set of two)



### JFD ANTENNA BASE MOUNT

Permits mounting of masts up to 1 3/4" OD, anywhere—on walls, window sills, peak, gabled or flat roofs—for top reception efficiency. Sets at any angle. Rugged, corrosion-resistant steel.

No.	List
BR8	\$7.50

### JFD VENT PIPE MOUNT

Fits snugly around vent pipes and variety of other objects. Fastens quickly with minimum effort. Complete with hardware. Made of corrosion-resistant steel.

No.	List
BR9	\$3.60

(set of two)

### JFD VERTICAL WALL MOUNT

Extends masts 6" from wall. Grips masts 1/2" to 1 1/2" OD. Extremely compact in size yet exceptionally powerful in operation.

No.	List
BR10	\$3.60

(set of 2)

### JFD ADJUSTABLE WALL MOUNT

Anchors 3/4" - 1 1/4" OD masts 6 to 15 inches from wall. Ideal for clearing projecting parts. Also available with additional extension bar No. BR11X for 24" wall clearance.

No.	List
BR11	\$7.50

(set of 2)

### JFD WALL EXTENSION BAR

Designed for use with JFD Wall Mount, No. BR11. Extends range of wall clearance to 24". Made from heavy-gauge steel.

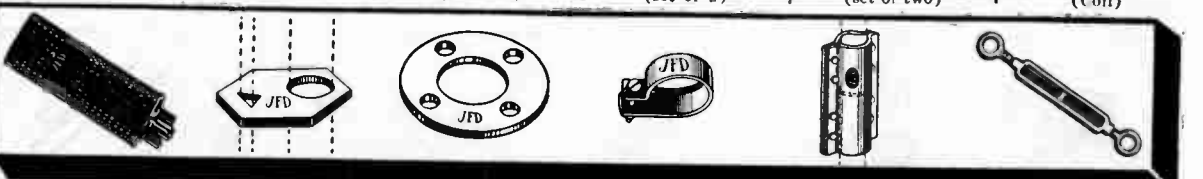
No.	List
BR11X	\$3.00

(set of two)

### JFD HANGER STRAPPING

Highly useful for mounting masts to pipes and other odd-shaped objects. Flexible yet tough. Made of 3/4" galvanized steel strapping.

No.	List
BR15-12' (Coil)	\$ .75
BR15-100' (Coil)	4.95



### JFD TV BALLAST

Emerson: 397021, 397022, 397023, 571-606. Telephone: TBR102D, TBR103D, TBR104D. Stewart-Warner: SW607300. Pilot: 85-87. Electromatic: 408100.

List, ea. \$2.25

Motorola: 17A470308, 17A485459. Raytheon-Belmont: B9M16584, B9M15822, B9M16067, B9M17571. List ea. \$2.25

### JFD RUBBER STAND-OFF

Anchors both Twin Lead or Coaxial Cable lines to masts up to 1 1/4" OD. Weather-resistant. Made of rubber.

No.	List
BR21	\$0.08

### JFD "FLOATING" GUY RING

No. For Mast List

BR24-1"	Mast	\$0.15
BR24-1 1/8"	Mast	.15
BR24-1 1/4"	Mast	.15
BR24-1 3/8"	Mast	.15
BR24-1 1/2"	Mast	.15
BR-24-2"	Mast	.20

### JFD RING CLAMP

Adjustable to fit popular mast diameters. Ruggedly constructed. Made of corrosion-resistant steel. Many installation uses.

No.	List
BR25-1	\$0.10

(for 3/4"-1" Masts)

BR25-1 1/4	.10
------------	-----

(for 1 1/4"-1 1/2" Masts)

### JFD MAST EXT'N CONNECTOR

Joins masts quickly and effectively. Made of corrosion-resistant steel.

No.	List
BR26-1	\$1.00

(for 1"-1 1/4" Masts)

BR26-1 1/4	1.00
------------	------

(for 1 1/4"-1 3/4" Masts)

### JFD TURNBUCKLE

Takes up guy wire slack swiftly and securely. Made of plated, corrosion-resistant steel.

No.	List
BR28-2 (3 1/2")	\$0.25
BR28-5 (5 1/2")	.30
BR28-7 (7 1/2")	.90



### JFD SPRING WING TOGGLE BOLT

Highly useful in antenna installation work. Assists in mounting brackets against hollow walls and partitions. Cadmium-plated for greater corrosion-resistance.

No.	List
BR29	\$0.25

### JFD DRIVE RING

Quick and effective. Easily hammered in at most suitable angle. Acts as strong anchor for guy wire. Made of galvanized steel.

No.	List
BR31	\$0.08

### JFD BRIDLE RING

Large eye accommodates any size or number guy wires. Wood screw thread insures permanent, non-slip installation. Made of corrosion-resistant galvanized steel.

No.	List
BR32	\$0.08

### JFD LAG BOLT

Screws into wood, brick and other material easily and quickly. Holds brackets and other mounts.

No.	List
BR36-1 (1")	\$0.07
BR36-1 1/2 (1 1/2")	.07
BR36-2 (2")	.08
BR36-3 (3")	.09

### JFD U-BOLT

Handy for mounting antenna masts to steel plates, wooden sections and other type walls. Takes masts up to 1 1/2" OD. Supplied with nuts and washers in place.

No.	List
BR37	\$0.25

### JFD U-BOLT CLAMP

Powerful U-Bolt bracket permits lightning-fast attachment of crossarms to masts up to 1 1/2" OD. Can be attached to cross-arm by drilling pair of holes through center. Made of corrosion-resistant steel.

No.	List
BR38	\$0.40



# TV BRACKETS & ACCESSORIES



### JFD MAST JOINER

Highly practical. Serrated retaining clamp holds two masts firmly together in powerful U-Bolt. Essential to joining high frequency masts to low band antenna masts. Made of galvanized steel.

No.	List
BR40	\$0.40

### JFD PIPE HANGER

Ideal for fastening masts, poles and variety of other round-shaped objects to walls, roofs, chimneys and cornices. Made of galvanized steel.

No.	List
BR41-1" Masts	\$0.06
BR41-1/4" Masts	.06

### JFD SCREW LEAD ANCHOR

Designed for use with insulators and other accessories and brackets. Threaded to take No. 10 wood screws and to fit 1/2" holes. Made of corrosion-resistant steel and lead.

No.	List
BR43	\$0.11

### JFD ANCHOR BOLT

Ideal for mounting brackets and other installation fixtures to all types of masonry. Fits 1/2" holes and bolt can be cut to required length after installation. Made of corrosion-resistant steel.

No.	List
BR44	\$0.15

### JFD LEAD ANCHOR

Secures brackets and other accessories to all types of masonry by acting as anchor for lag bolts. Available in variety of screw sizes and lengths.

No.	List
BR43-3/4" hole	\$0.08
BR43-1" hole	.09
BR43-1 1/2" hole	.11

### JFD ANCHOR EYE BOLT

Constructed to give permanent anchorage to brackets, guy wire and other installation accessories. Fits 1/4" mounting hole. Made of corrosion-resistant steel and lead.

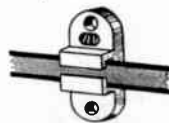
No.	List
BR45	\$0.18



No. BR48



No. BR49



### U-BOLT BRACKET

One of the most practical antenna mounts made. Sturdy U-bolt securely grips all masts from 1"-2" OD. Made of corrosion-resistant steel. Complete with hardware.

No.	List
BR46-3 (3")	\$1.80
BR46-4 (4")	2.10
BR46-7 (7")	2.50

### JFD TAMPING TOOL

No. BR48 is essential for installing Anchor Bolts No. BR44 in masonry. No. BR49 installs Anchor Eye Bolts No. BR45 into brick and other types of masonry. Made of hardened steel alloy. Life-time construction.

No.	List
BR48	\$2.00
BR49	4.75

### JFD TENASTUB

One of the simplest methods of improving impedance match and eliminating ghosts. Two different lengths of aluminum shorting stubs slip over lead-in and help produce better and brighter pictures.

No.	List
BR56	\$0.50

### JFD TWIN LEAD CONNECTOR

Joins two twin lead lines simply and swiftly. Exceptionally convenient to use. Compactly designed. Made of clear, all-weather, low-loss plastic.

No.	List
BR57	\$0.25

### JFD TWIN LEAD INSULATOR

Anchors twin lead-ins safely and securely against baseboards, panels and other surfaces. Twin lead slips in conveniently through slot in front. Made of clear, all-weather, low-loss plastic.

No.	List
BR58	\$0.15

### JFD HV ANODE CAP WITH LEAD

Acts as dependable protection from high voltages found on cathode ray tubes. Made of sturdy rubber.

No.	List
BR59L	\$1.10
(for RCA, GE & Sylvania tubes)	
BR59S	1.10
(for all Dumont tubes)	



### WIRE RETAINER LEAD INSULATOR

Does two jobs at once! Anchors transmission lines to masts and holds guy wire. Fits 3/4"-1 1/2" masts. Made of galvanized steel.

No.	List
BR60TL	\$0.35
(for twin lead)	
BR60RG	.35
(for coaxial)	

### JFD GUY WIRE THIMBLE

Unsurpassed for swift and sure joining of guy wires. Vise-tightening operation insures tight, permanent grip. Made with corrosion-resistant steel.

No.	List
BR61	\$0.25

### JFD LEAD-IN GUARD

Shields transmission lines from chafing against sharp corners. Made of heavy-duty asbestos fabric loom. Highly flexible, can be bent into any shape.

No.	List
BR62	per ft. \$0.10

### JFD EYE BOLT

Especially suited for taking up slack in hanger strapping. Overall length of 4 inches. Complete with washer and nut. Ruggedly constructed of galvanized steel.

No.	List
BR70	\$0.12

### AC SAFETY CORD

Serves as fool-proof safety interlock by cutting off line voltage when TV receiver cabinet is opened. Insulated with high quality rubber. Plugs directly into AC Interlock Plug No. BR75.

No.	List
BR71	\$0.75

### JFD LOADING COIL

Effectively reduces interaction between upper and lower duorienting TV bays. 35 inches long. Supplied complete with capacitors and terminal lugs.

No.	List
BR72	\$1.75



### JFD 2-TERMINAL ANTENNA STRIP

Sturdily constructed and insulated. Excellent for mounting twin lead transmission lines in RCA and similar type television receivers.

No.	List
BR73	\$0.22

### JFD 3-TERMINAL ANTENNA STRIP

Used as synchronizing lock strip in RCA type television receivers. Ideal for mounting twin lead transmission lines. Constructed of low-loss insulation material.

No.	List
BR74	\$0.18

### JFD FUSE MOUNTING BASE

Insulated fuse mounting base protects high voltage and similar type circuits by acting as dependable holder for fuse. Designed to fit practically all types of receivers.

No.	List
BR76	\$0.23

### JFD AC INTERLOCK PLUG

Mounts on TV receiver cabinet. Serves as male socket for female plug end of AC Safety Cord No. BR71. Equipped with two-terminal lugs for connection to interior circuits.

No.	List
BR75	\$0.20

### JFD TWIN LEAD HOLDER

Attaches to TV receiver bracket for purpose of securing and insulating twin lead lines. Made of strong, heavy-duty insulation material.

No.	List
BR77	\$0.11

### JFD TWIN LEAD INSULATOR

Protects twin lead by insulating it from contact with receiver transformer. Made of sturdy insulation material. Can also be used for many other insulating purposes.

No.	List
BR78	\$0.15



# TV ACCESSORIES & SCREW EYES



**JFD ALUMINUM GROUND WIRE**  
Recommended for use by Nat'l Electrical Code. Ideal for grounding antenna masts and other objects. Fully corrosion-proof. Made of highly flexible No. 8 aluminum wire. Will not sway or whip.  
No. List  
BR79-100ft. \$2.50  
BR79-500ft. 12.00

**JFD PLATED GROUND ROD**  
Acts as dependable year-round ground stake. Made of copper-plated, heavy gauge 4 ft. steel rod. Equipped with sturdy mounting clamp for secure attachment of ground wire.  
No. List  
BR80 \$1.50

**JFD GROUND CLAMP**  
Excellent for grounding masts. Sharp-pointed screw assures good ground connection. Fits any size mast. Made of corrosion-resistant steel.  
No. List  
67-6 \$0.20

**JFD TV FILTER**  
No. List  
GF7 \$1.50  
GF10 2.10  
GF11 3.25  
GF12 3.75  
GF12½ 4.25  
GF15 6.35  
GF16 8.85  
GF20 12.00  
GF7H 1.50  
GF10Z 5.00  
GF12Z 7.00

**JFD RUBBER-WALL STANDOFF**  
Ideal for securing twin lead lines indoors to walls, base boards and moulding. Ribbon-type lead-ins can be slipped conveniently through slot at top without disturbing installation.  
No. List  
MB100 \$0.10

**STEEL STRAND GUY WIRE**  
Made from high-strength No. 20 galvanized steel lines.  
No. List  
TW4-100' \$ 1.60 (8 Strand)  
TW4-1000' 15.75 (8 Strand)  
TW5-100' 1.15 (4 Strand)  
TW5-1000' 11.00 (4 Strand)



**JFD TWIN LEAD 300 OHM**  
Designed for maximum signal transfer with minimum loss and distortion. 300 ohm surge impedance. Made with all-weather, low-loss polyethylene.  
No. List  
TW101 (100') \$3.30  
TW500 (500') 15.00  
TW1000 (1000') 27.00

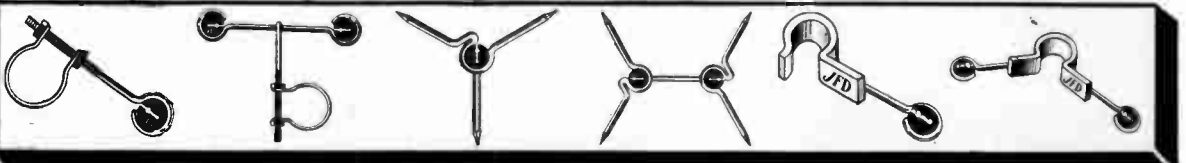
**JFD TV-FM ALIGNING TOOL**  
Sturdy screw driver end recessed in one end of bone fibre handle. Other end bears heavy metal screw-driver nib. Excellent where fine adjustment of TV or FM receivers is required.  
No. List  
5-68 \$0.75

**JFD TV-FM INSULATED SCREW DRIVER**  
Made of ¼" durable bone fibre rod. No metal parts. Perfect for adjusting TV and FM receivers. 7" long. Ends can be reground when necessary.  
No. List  
5-72 \$0.40

**JFD SCREW EYE STAND-OFF**  
Polyethylene Insert  
FOR TWIN LEAD  
No. List  
BR18TL3 3½" \$5.40/C  
BR18TL5 5½" 7.00/C  
BR18TL7 7½" 8.05/C  
BR18TL12 12" 15.00/C  
FOR COAXIAL CABLE  
No. List  
BR18RG3 3½" \$5.40/C  
BR18RG5 5½" 7.00/C  
BR18RG7 7½" 8.05/C  
BR18RG12 12" 15.00/C

**DOUBLE SCREW-EYE STAND-OFF**  
Polyethylene Insert  
DUAL TWIN LEADS  
No. List  
DBR18TL3 3½" \$2.24  
DBR18TL5 5½" .27  
DBR18TL7 7½" .29  
DBR18TL12 12" .46  
DUAL COAXIAL  
No. List  
DBR18RG3 3½" \$2.24  
DBR18RG5 5½" .27  
DBR18RG7 7½" .29  
DBR18RG12 12" .46

**NAIL "DRIVE-IN" INSULATORS**  
Polyethylene Insert  
FOR TWIN LEAD  
No. List  
NT100 \$0.06 (3½" -#8 wire)  
NT200 .12 (3½" -#6 wire)  
NT207 .15 (7" -#6 wire)  
To order coaxial sizes substitute R for T.



**MAST LEAD-IN STAND-OFF**  
Polyethylene Insert  
FOR TWIN LEAD  
For ¾" Mast  
No. List  
TL75-350 3½" \$1.15  
TL75-550 5½" .20  
TL75-750 7½" .21  
For 1" Mast  
TL100-350 3½" .15  
TL100-550 5½" .20  
TL100-750 7½" .21  
TL100-1200 12" .32  
For 1¼" Mast  
TL125-350 3½" .15  
TL125-550 5½" .20  
TL125-750 7½" .21  
TL125-1200 12" .32  
For 1½" Mast  
TL150-350 3½" .18  
TL150-550 5½" .21  
TL150-750 7½" .22  
TL150-1200 12" .33  
For 1¾" Mast  
TL175-350 3½" .19  
TL175-550 5½" .22  
TL175-750 7½" .23  
TL175-1200 12" .35  
For 2" Mast  
TL200-350 3½" .20  
TL200-550 5½" .23  
TL200-750 7½" .24  
TL200-1200 12" .36

**DOUBLE MAST STAND-OFF**  
Polyethylene Insert  
FOR DUAL TWIN LEAD  
For 1" Mast  
No. List  
DTL100-350 3½" \$3.35  
DTL100-550 5½" .38  
DTL100-750 7½" .40  
DTL100-1200 12" .55  
For 1¼" Mast  
DTL125-350 3½" .35  
DTL125-550 5½" .38  
DTL125-750 7½" .40  
DTL125-1200 12" .55  
For 1½" Mast  
DTL150-350 3½" .40  
DTL150-550 5½" .43  
DTL150-750 7½" .45  
DTL150-1200 12" .60  
For 1¾" Mast  
DTL175-350 3½" .40  
DTL175-550 5½" .43  
DTL175-750 7½" .45  
DTL175-1200 12" .60  
For 2" Mast  
DTL200-350 3½" .45  
DTL200-550 5½" .48  
DTL200-750 7½" .50  
DTL200-1200 12" .65  
To order coaxial types substitute letters RG for TL.

**SELF-ANCHORING STAND-OFF**  
Polyethylene Insert  
Braces lead-ins against inaccessible parts of walls. Prevents line sway. No drilling required.  
FOR TWIN LEAD  
No. List  
LST350 \$0.20  
FOR COAXIAL CABLES  
LSR350 \$0.20

**DOUBLE SELF-ANCHORING STAND-OFF**  
Polyethylene Insert  
Ideal for protecting lead-ins against parts of wall that are inaccessible.  
DUAL TWIN LEADS  
No. List  
DLST350 \$0.35  
For Dual Coaxial Cables  
DLSR350 \$0.35

**JFD SNAP-ON INSULATOR**  
FOR TWIN LEAD  
No. List  
SPT100 (1") \$0.10  
SPT116 (1" EMT Cond.) .10  
SPT125 (1¼") .10  
SPT138 (1½") .12  
SPT150 (1¾") .12  
SPT158 (1¾") .13  
SPT175 (1¾") .13  
SPT178 (1¾") .13  
SPT200 (2") .14  
To order coaxial types substitute R for T.

**JFD DOUBLE SNAP-ON INSULATOR**  
Polyethylene Insert  
FOR DUAL TWIN LEADS  
No. List  
DSPT100 (1") \$0.25  
DSPT125 (1¼") .25  
DSPT138 (1½") .30  
DSPT150 (1¾") .30  
DSPT158 (1¾") .30  
DSPT175 (1¾") .35  
DSPT178 (1¾") .35  
DSPT200 (2") .40

**JFD ADJUSTABLE STAND-OFFS**  
Polyethylene Insert  
Fit any size mast. Attach in seconds. Simply pull strap and tighten screw eye.  
FOR TWIN LEAD  
No. List  
UT350 3½" \$0.19  
UT550 5½" .24  
UT750 7½" .25  
UT1200 12" .46  
To order coaxial types substitute R for T.

**DOUBLE ADJUSTABLE STAND-OFF**  
Polyethylene Insert  
Firmly grip dual lead-ins. Eliminate loose twisting lines. Completely pre-assembled for quick installation.  
FOR DUAL TWIN LEADS  
No. List  
DUT350 3½" \$0.35  
DUT550 5½" .39  
DUT750 7½" .40  
DUT1200 12" .55  
To order coaxial types substitute R for T.


**JFD MASONRY "DRIVE-IN"**  
Polyethylene Insert  
Hammers directly into concrete, cement, mortar, brick and other types of masonry. No drilling or special tools required.  
FOR TWIN LEAD  
No. List  
FN100T \$0.12  
FOR COAXIAL CABLE  
FN100R \$0.12

**D'B'L MASONRY "DRIVE-IN"**  
Polyethylene Insert  
Anchors both high and low-band lead-ins. Prevents line tangling. Drives into wall. No drilling or special tools necessary.  
For Dual Twin Leads  
No. List  
DFN100T \$0.24  
For Dual Coaxial Cables  
DFN100R \$0.24

# NEW Teletower with EXCLUSIVE Penn Pilot Hole

*So Foolproof... So Safe...*

*A Green Apprentice Can Zip it up Fast*



2 Men Do the Job — Minimizes Wind Resistance . . .  
Reduces Vibration — Weighs Less Than 2 Pounds per Foot.  
Sectional Construction (in 10 foot lengths) — Saves Storage Space.

Penn Pilot Hole — Cuts Assembly Time 1/3.  
(Patent Applied For)

Quick erection by the installer means quick profit for the wholesale distributor . . . that's the boiled-down truth about the new Penn TELETOWER.

Why? Because—at last—a manufacturer has taken the trouble to engineer a simple mechanical feature that serves as a foolproof guide to speedier, safer tower erection. One leg of the middle section in Penn's tripod-type tower is made longer than the others. Position this single leg correctly and — zip! — the other two are automatically brought

into correct alignment.

As a result of this exclusive feature, Penn offers a tower with tripod stability that's as simply erected as a single pole. Two "green-hands" can put this tower up fast . . . and in safety!

When erected, this Penn Teletower forms a rigidly locked tripod that is unaffected by high winds and will not vibrate out of position. Yet, the entire assembly — built of lightweight steel — weighs less than 20 pounds. Sectional, prefabricated construction permits space-saving storage. Cross braces on tripod serve as rungs and make the tower a safe, useful ladder when erecting antenna. Mount is so designed that not an ounce of tower weight rests on the motor!

Penn Teletowers are already on the way "up"! . . . on roofs . . . and in sales! It will pay to drop us a line.

A profitable Penn Teletower connection in your territory may still be available — Though we anticipate heavy Distributor demand. Write or wire today. No obligation.

**PENN BOILER AND BURNER  
MANUFACTURING CORP.**

# Radion

## ANTENNA

All fast-moving package items. Each does a special job. Each has a place in your TV or Radio installations. 1,000,000 Radions in use today . . . best evidence of their popularity and performance.

Pleasing design and dielectric correctness together with quality manufacturing make all the items on this page "demand" packages . . . a pleasure and satisfaction to handle.



### METROPOLITAN

The industry standard. Model TA-49 M Indoor TV Antenna. Mahogany bakelite, felt base pad. 10 feet of 300 ohm line. 3-section telescoping tubular steel dipoles, bright nickel-plated. Stands 19 inches high. Tubular dipoles extend to 92 inches, telescope to 32 inches. Fully assembled. Individually packaged. Shipped six to a master carton. Weight 11 pounds. Mounts on TV set, table, wall, etc. List price, \$6.95.



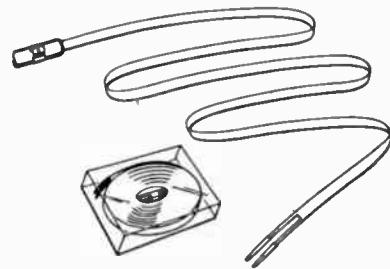
### THE SUBURBAN

Model TA-51 Conical Outdoor Antenna. For wall, window or attic mounting. Weatherized ebony bakelite head. 15 feet of 300 ohm line. Four 4-section telescoping tubular steel dipoles, triple chrome plated. 8-foot telescoping mast. Steel base mount, black copperoxide, rustproof. Full channel coverage. Fully assembled. Individually packaged. Packed 6 to a master carton. Shipping weight, 30 pounds. List price, \$9.95.



### THE RANGER

Model RA-43. AM-Shortwave Radion Antenna. 84-inch, 5-section telescoping tubular steel mast with red plastic tip. All steel, triple chrome plated. Universal mounting base—adjustable for any flat or sloping surface. Equipped with built-in lightning arrestor. Complete with all mounting hardware (nuts, bolts, washers, wood screws and 40 feet of lead-in wire) and instruction sheet. Individually packaged. Completely assembled. Weight of master carton of twelve, 25 pounds.



### LINKED LEAD-IN

The new TL-10. Ten foot lead-in, stripped, split . . . terminals already on . . . For 20 feet, snap two lengths together. A great time saver. Packaged complete with combination stand-off and insulator . . . 12 to a box . . . 144 to shipping carton, weight 25 pounds.

**The Radion Corporation • 1137 Milwaukee Avenue • Chicago 22, Ill.**

# Monitor TOWERS FOR TELEVISION

BAKER MANUFACTURING CO. EVANSVILLE, WISCONSIN

## MODEL TH

60' or 70' Residential roof guyed tower-mast combination. Includes 30' tower with universal joint base, 30' telescoping mast, complete with special hardware for vertical erection of mast, and guy washers. Additional 10' tower sections available, 70' maximum recommended. Unit includes antenna mounting adjustable for mast diameter 1" to 2". Tower has 9" face, can be climbed. Heavily galvanized, built to withstand an 80 mile wind. Shipped folded flat with major assembly done at factory.



TOWER NO.	HEIGHT	WT. LBS.	LIST PRICE	NET DEALER PRICE
60 TH	60'	140	\$67.50	\$40.50
10 TH	10' section	35	17.50	10.50
30 TH	30' tower	110	55.00	33.00

## MODEL TX

Heavy duty guyed tower for ground or roof mounting. Heights to 100' require only two sets of three guys, 55' or lower only one set. Sold in sections, with 5' base section with universal joint, 15' intermediate sections, and 5' tapered top section. Antenna mounting adjustable for mast diameter 1" to 2". Tower has 12" face, can be climbed. Heavily galvanized, built to withstand an 80 mile wind. Shipped folded flat with major assembly done at factory. Towers will be drop shipped to dealers or their customers.

TOWER NO.	HEIGHT	WT. LBS.	LIST	DEALER
15 TX	15' middle	76	\$30.00	\$22.50
5 TX	5' top	32	12.50	9.38
4 TX	5' bottom	47	19.50	14.63

## HEAVY DUTY GUY AND HARDWARE KITS FOR MODEL TX

KIT NO.	HEIGHT	LIST	DEALER
<b>Roof Mounting</b>			
TQ-91	25' — One set 3 guys	\$21.25	\$15.94
TQ-92	40' — One set 3 guys	23.50	17.63
TQ-93	55' — One set 3 guys	25.25	18.94
TQ-94	70' — Two sets 3 guys	47.00	35.25
<b>Ground Mounting</b>			
TX-91	25' — One set 3 guys	\$24.25	\$18.19
TX-92	40' — One set 3 guys	26.50	19.87
TX-93	55' — One set 3 guys	28.75	21.56
TX-94	70' — Two sets 3 guys	50.00	37.50
TX-95	85' — Two sets 3 guys	53.50	40.12
TX-96	100' — Two sets 3 guys	57.25	42.94

## MODEL TK

Tower 10' high with special hardware for 40' telescoping tower assembly. Includes base to fit all roofs, self contained permanent ladder, antenna mounting adjustable for mast diameter 1" to 2", special mast couplers for vertical erection of 30' telescoping mast, and guy washers. Heavily galvanized, built to withstand an 80 mile wind. Shipped folded flat with major assembly done at factory.

Tower No.	Height	Wt. Lbs.	List Price	Net Dealer Price
10 TK	10' Tower	50	\$32.00	\$19.20
40 TK	40' (Tower & 30' mast)	80	45.00	27.00



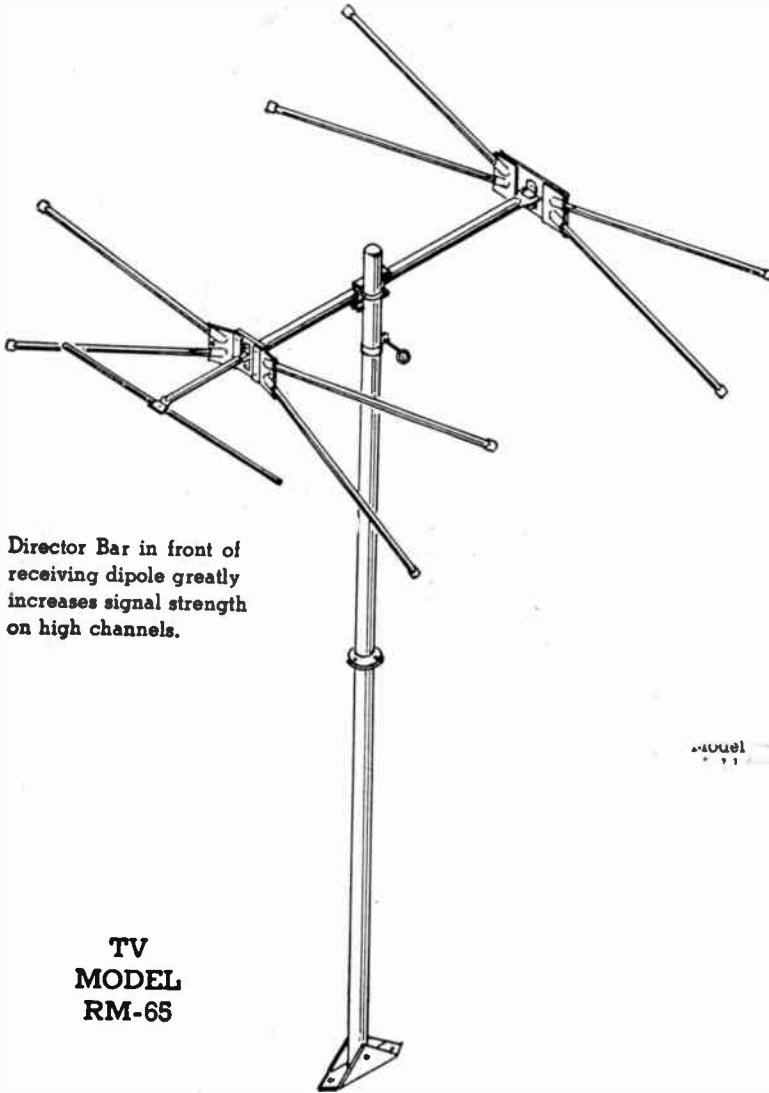
## SELF-SUPPORTING MODEL TV

Self-supporting tower built to support the heaviest TV and Amateur antennas, designed to withstand an 80 mile wind. Three post steel angle construction, heavily galvanized. Base spread is approximately one-fifth of height. Shipped knocked down with full instructions, all fittings, hardware, ladder, platform and antenna mounting adjustable for mast diameter 1" to 2". Towers will be drop shipped direct to dealers or their customers. Specify whether for ground or roof mounting.

Tower No.	Height	Wt. Lbs.	List	Dealer
22 TV	22'	280	\$56.00	\$42.00
35 TV	35'	434	95.00	71.25
48 TV	48'	650	142.00	106.50
62 TV	62'	970	211.00	158.25
75 TV	75'	1400	305.00	228.75
88 TV	88'	1835	399.00	299.25



## NEW RADELCO BAR-X DIPOLE VASTLY SUPERIOR TO ORDINARY CONICALS

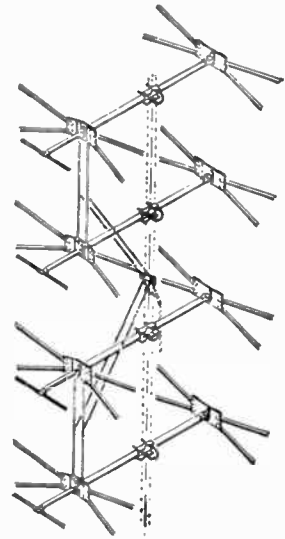


Director Bar in front of receiving dipole greatly increases signal strength on high channels.

**TV  
MODEL  
RM-65**

Radelco Wonder Bar definitely improves performance on high channels where reception is most difficult. Rugged 1 1/4" galvanized steel mast with 1" cross boom. Heavy duty construction throughout. Aluminum elements specially engineered to reduce vibration and noise. Accessories consist of swivel base, guy ring and clamp-type standoff insulator.

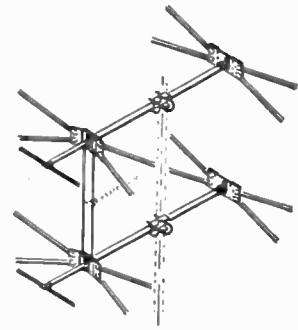
Model	List	Description	Ship Wt.
RM-65	\$10.95	10 ft. mast and accessories.....	10.5 lbs.
RM-65S	8.95	5 ft. mast only.....	7.2 lbs.
RM-652	19.45	2 bays, 10 ft. mast and accessories.....	13.0 lbs.



**QUAD STACK RS-754**

Consists of 4 bays complete with all linking bars and terminal block.

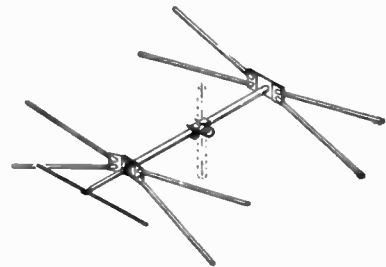
Model	List	Ship Wt.
RS-754	\$36.00	21.8 lbs.



**DOUBLE STACK RS-752**

Consists of 2 bays, complete with jumper bars.

Model	List	Ship Wt.
RS-752	\$16.00	10.2 lbs.

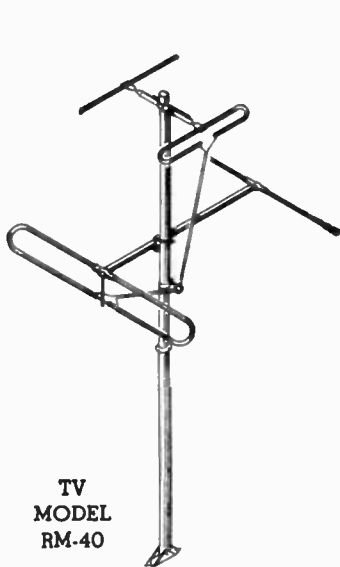


**SINGLE STACK RS-751**

Consists of single Bar-X array, U-Bolt mounting. Fits masts as large as 1 1/4".

Model	List	Ship Wt.
RS-751	\$7.45	5.7 lbs.





TV  
MODEL  
RM-40

### HI-LO DIPOLE

A fine general purpose antenna for local and near fringe reception. The high channel array can be oriented independently for better reception of high channel stations. Easier to assemble and install. Ruggedly constructed with 1 1/4" galvanized steel mast and heavy duty 1" galvanized steel cross boom.

Model RM-40 includes two 5-ft. sections of 1 1/4" mast, swivel base, guy ring, clamp-type standoff insulator, jumper cable and arrays.

Model RM-40S includes high and low channel arrays and 5-ft. mast only.

Model	List	Ship Wt.
RM-40	\$10.95	9.2 lbs.
RM-40S	8.95	7.5 lbs.



TV  
MODEL  
RM-42

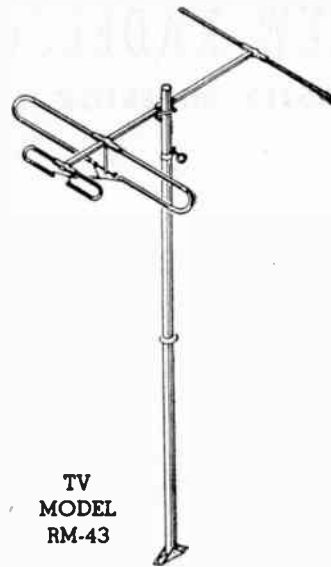
### LOW BAND DIPOLE

A splendid, low cost antenna for local and near fringe areas where only low channels are operating. Can be converted for high channel operation by adding RT-51 high channel array. Reception in fringe areas can be improved by adding RS-52 low band stacking array. Same rugged construction as Model RM-40.

Model RM-42 includes two 5-ft. sections of 1 1/4" galvanized steel mast, swivel base, guy ring, clamp-type standoff insulator and low channel array.

Model RM-42S includes low channel array and 5-ft. mast only.

Model	List	Ship Wt.
RM-42	\$8.95	8.8 lbs.
RM-42S	6.95	6.2 lbs.



TV  
MODEL  
RM-43

### DUAL BAND DIPOLE

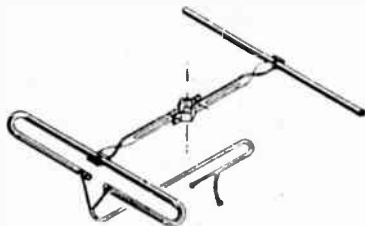
A multi-channel antenna made with a special dual band array. This antenna is particularly useful where all stations are in approximately the same direction. The antenna is especially sensitive on the high channel stations where it functions as a three-element array with an average gain of 5.5 db. Made with strong 1" galvanized steel boom and 1 1/4" galvanized steel mast.

Model RM-43 includes two 5-ft. sections of 1 1/4" mast, swivel base, guy ring, clamp-type standoff insulator and array.

Model RM-43S includes array and 5-ft. mast only.

Model	List	Ship. Wt.
RM-43	\$10.45	9.8 lbs.
RM-43S	8.45	7.5 lbs.

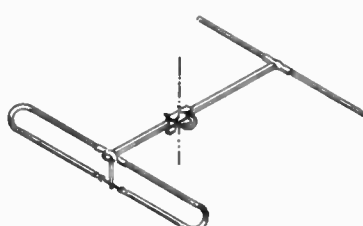
### RT-51 HIGH BAND TELEVISION ARRAY



For adding a high band array to existing antenna or for stacking purposes. Jumper lead included. Fits 7/8" to 1 1/4" mast.

Model	List	Frequency	Ship Wt.
RT-51	\$2.50	174-216 mc	1.3 lbs.

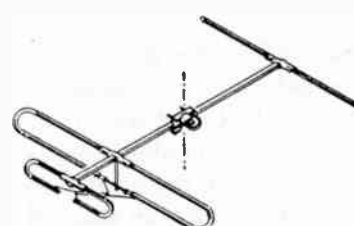
### RS-52 LOW BAND TELEVISION ARRAY



For stacking purposes to improve fringe reception. Fits all masts up to 1 1/4" diameter.

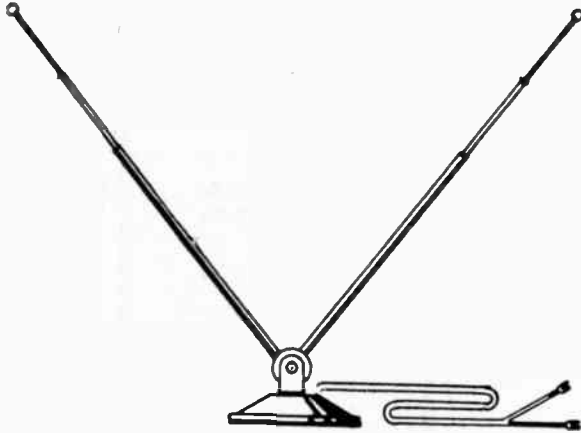
Model	List	Frequency	Ship Wt.
RS-52	\$5.95	54-88 mc	4.5 lbs.

### RS-53 DUAL BAND TELEVISION ARRAY



For stacking purposes. Model RS-531 is a single bay. Model RS-532 includes two bays complete with jumper bars.

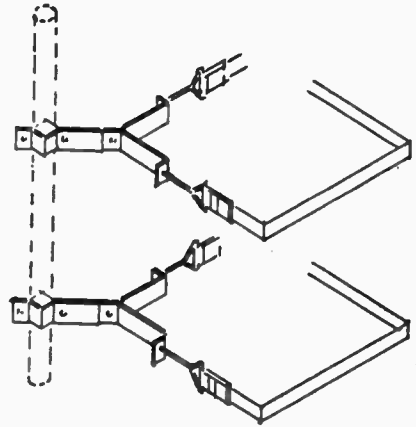
Model	List	Frequency	Ship Wt.
RS-531	\$ 7.45	54-216 mc	5.5 lbs.
RS-532	16.00	54-216 mc	11.5 lbs.



### VT-3 INDOOR ANTENNA

Attractive, heavily weighted base with three-section masts of chrome plated seamless brass tube extending to 45". Covers all TV and FM channels. Includes lead cable with terminals.

Model VT-3      List \$3.45      Ship Wt. 1.4 lbs.



### R-105 CHIMNEY MOUNT

Stronger! Better! Exclusive design provides bracket arms of double strength. Complete with four adjusting eyebolts and extra thick 3/4" steel strap, heavily galvanized for long dependable service.

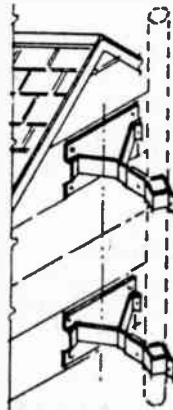
Model R-105      List \$2.15      Ship Wt. 3.3 lbs.



### MAST EXTENSIONS

Heavily galvanized, internal lock-seam steel tube with swedged end and key way lock.

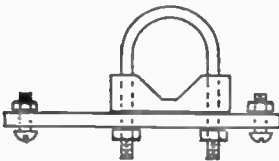
ME-48      List \$1.10      1" Dia. x 4' long  
ME-60      "    1.35      1 1/4" Dia. x 5' long



### R-106 WALL MOUNT

Exclusive design with double strength brackets allowing 5" clearance from wall. Large bearing plate with four mounting holes suitable for wood siding or masonry walls. Adjustable for 1" to 1 3/16" masts.

Model R-106      List \$1.50  
Ship Wt. 2.5 lbs.



### RT-111

#### TERMINAL BLOCK

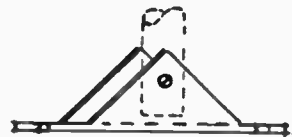
Mast mounting terminal block for coupling phasing bars to lead cable.

RT-111      List \$ .75

### JUMPER AND PHASING BARS

Jumper bars are used to connect two arrays into a double stack. Phasing bars are used to connect two double stack arrays to a terminal block on the mast forming a quad stack.

RQ-42 JUMPER BAR      List \$ .75 ea.  
RQ-45 PHASING BAR      List \$ .85 ea.



### SWIVEL MOUNTING BASE

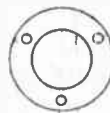
Type R-107 illustrated is for 1 1/4" mast. One-inch mast uses type R-104.

R-107      List \$ .40      R-104      List \$ .40

### QUAD STACK PHASING KITS

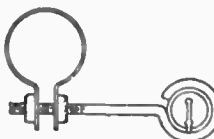
Four phasing bars RQ-45 plus one RT-111 Terminal Block. Couples two double stack arrays into a quad stack.

R-114      List \$4.00



### GUY RINGS

R-101 for 1" Mast      List \$ .10  
R-112 for 1 1/4" Mast      List \$ .10



### STANDOFF INSULATOR

Clamp type for masts from 1" to 1 1/4".

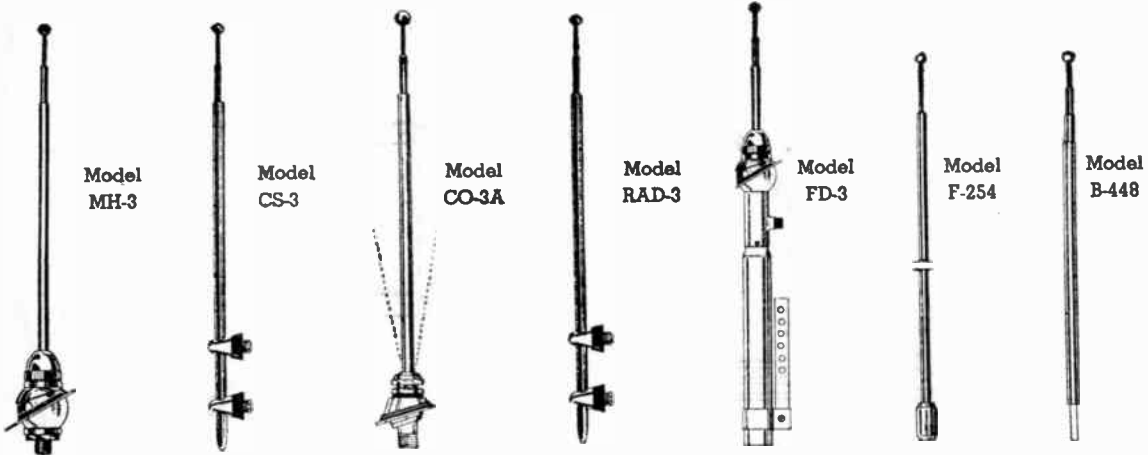
R-102      List \$ .15



### GROUND ROD

A four-foot copper coated ground rod complete with terminal bolt.

R-110      List \$ .95



## THE CHOICE ACROSS THE NATION FOR QUICK, EASY INSTALLATION!

### MH MONARCH COWL-FENDER

Ball-joint metal mounting base, adjustable from flat to 30°. Base sufficiently large to cover largest holes. Lovely chrome finish. Waterproof construction. Holds angular adjustment permanently. 36" cable.

MH-3	List \$5.45	3 Sec.	57"
MH-3A	" 5.95	3 Sec.	70"

### CS-3 CHAMPION SIDE COWL

A competitively priced Aerial built to RADELCO's high quality standard. Chrome plated brass tubing. Shielded polyethylene cable with black cover. Screw on connector and chrome capped insulators.

CS-3	List \$3.45	3 Sec.	68"
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### CO-3A ROTOLOK COWL-FENDER

Easy mounting, all tightening outside. Half-inch mounting hole. Chrome plated mounting base. Exclusive VISE-LOCK eliminates clumsy braces. Fits any fender or top cowl. 36" Radar type cable.

CO-3A	List \$4.95	3 Sec.	57"
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### RAD DELUXE SIDE COWL

Built to superior quality standards. Automotive specification chrome plate. Low loss 100% shielded 36" Radar cable with screw-on connectors.

RAD-3	List \$4.65	3 Sec.	70"
RAD-4	" 5.65	4 "	92"
RAD-5	" 6.65	5 "	112"

### FD CONCEALED COWL-FENDER

Chrome plated all metal adjustable mounting base. Strong, non-crushable. Waterproof, electrically efficient, guaranteed trouble free. 48" Radar Cable.

FD-3	List \$6.95	3 Sec.	4" - 55"
FD-3A	" 7.45	3 Sec.	9" - 68"

### F-254 FORD REPLACEMENT MAST

For 1941-42-46-47 Ford-Mercury Roof Antenna that operates behind windshield center post.

F-254	List \$2.00	2 Sec.	54"
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### B-448 BUICK REPLACEMENT MAST

Replacement mast for roof aerials on all Buicks 1940 to present.

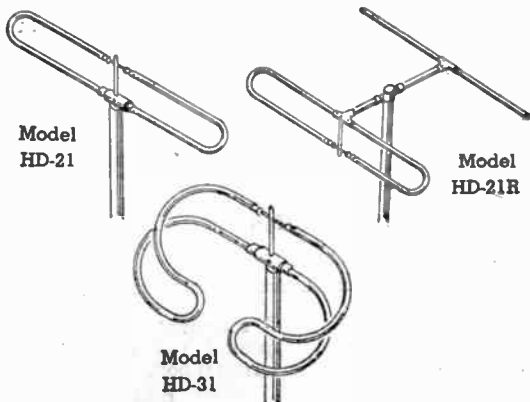
B-448	List \$2.50	4 Sec.	45"
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### RADAR LEAD CABLES

Radar type coaxial polyethylene cable completely shielded. Type L as supplied with aerials. Extension type LE has male and female pin plug fittings.

Model	L-36	L-48	LE-12	LE-24	LE-36
List	\$1.35	\$1.60	\$ .75	\$1.10	\$1.35
Length	36"	48"	12"	24"	36"

### ★ DOUBLE STAR FM DIPOLES ★



### HD-21 FOLDED DIPOLE

Impedance of 300 ohms matches RMA Standard receiver input. Complete with 8 ft. mast, guy ring, stand-off insulator, wall brackets, base and 50 ft. of 300 ohm line.

HD-21	List \$8.25	88-108 MC
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### HD-21R DIPOLE-REFLECTOR

Same accessories as Model HD-21 plus reflector to increase signal strength. More directional than Model HD-21 with much increase in forward gain.

HD-21R	List \$10.75	88-108 MC
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### HD-31 DIFOLD DIPOLE

Much less directional than folded dipole. Use where signals come from several directions. Same accessories as HD-21.


HD-31	List \$8.95	88-108 MC
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### FM ACCESSORIES

ME-48	4 ft. steel mast extension	List \$1.10
HR-1	Reflector Kit for HD-21	" 2.50

## Retainer Ring "S" Type Sockets

Extremely compact sockets, furnished complete with retainer rings. Mount in 1-11/64" keyed hole. Use Amphenol No. 25-LD-1 Punch and Die.


	Black Bakelite	List	Contacts	Steatite	List
	78-S4	\$.13	4 Contacts	49-SS4	\$.47
	78-S5	.13	5 Contacts	49-SS5	.47
	78-S6	.13	6 Contacts	49-SS6	.47
	78-S7C*	.17	7 Comb. for 7L, 7S		
	78-S7L*	.13	7 Large	49-SS7L*	.59
<b>Block Bakelite</b>	78-S7S	.13	7 Small	49-SS7S	.47
	78-S8	.17	8 Octal	49-SS8	.47
	78-S8L	.21	8 Loktal		
	78-S9	.21	9 Octal Style		
	78-S11	.29	11 Octal Style		
	78-A7P†	.30	7 for Miniatures		
	78-A9P†	.45	9 for Miniatures		
	78-B	.07	Blank		

\* Mounts in 1-21/64" keyed hole. Use 25-LD-2 Punch and Die.  
† Mounts in standard socket hole. Has miniature socket in center.

**Magnal Socket** Has 1-1/16" pin circle for cathode ray and television tubes. Mounts in 1-5/8" hole. Steatite.  
No. 49-SS11L 11 Contact, Magnal ..... List \$1.21

## Miniature Retainer Ring Type Sockets

Mount in 5/8" round or "D" shaped hole with No. 2-9 retainer rings.

	Block Bakelite	Number	Description	List
		78-S3S	For 3 prong min. photo cells	\$.17
		78-S4S	4 Contact	.17
		78-S5S	5 Contact	.21
		78-S6S	6 Contact	.21
		78-7P	7 Contact, Miniature	.21

**Mica-Filled Bakelite**  
78-7PT 7 Contact, Miniature ..... .28

## Duodecal and Diheptal Tube Sockets



Designed for television viewing tubes, oscilloscopes and other cathode-ray tubes. Provides means of grouping leads within the socket housing and bringing them out radially in a neat, unit-cable form, reducing the space required to a minimum. Grouping of the wires in the enclosed raceway eliminates flexing at solder terminals, minimizing breakage.

Removable socket cap provides complete enclosure for all connections, eliminating shock hazard, yet the cap is easily removed for wiring or servicing. Opening for the lead

wire harness can be positioned in any of 6 locations. Contacts are seated in individual wells, the walls of which form efficient creepage barriers. Socket cap and body molded from high quality electrical bakelite. Contacts are Amphenol exclusive "clover-leaf" design featuring four full lines of contact on each tube pin.

The socket is designed for easy assembly and disassembly... requires no special tools.

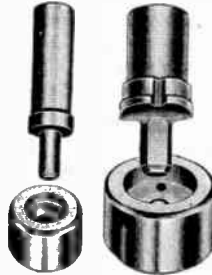
**Duodecal Socket** for a maximum of 12 equally spaced pins on a circle diameter of 1.063".  
No. 59-402 ..... List \$1.56

**Diheptal Sockets** for a maximum of 14 equally spaced pins on a circle diameter of 1.750".

No. 59-415 Small—for 2.050" D. Tube base ..... List \$1.67  
No. 59-417 Medium—for 2.250" D. Tube base ..... 1.67

## Laboratory Punch and Dies

For punching mounting holes for Amphenol connectors, plugs and receptacles. Made of tool steel, properly hardened.



**For Amphenol Retainer Ring Mounting Tube Sockets, Radio Plugs, etc.**

Drill 1/2" hole for pilot punch.  
No. Size of Hole List  
25-LD-1 1-11/64" keyed ..... \$12.00  
25-LD-2 1-21/64" keyed ..... 12.00

**For Miniature Sockets and Microphone Connectors**

Drill 3/8" pilot hole for 25-LD-3, 5 and 6 and 1/4" hole for 25-LD-4.  
25-LD-3 13/16" round ..... \$3.60  
25-LD-4 5/8" round ..... 3.60  
25-LD-5 5/8" "D" hole ..... 6.00  
25-LD-6 1/2" "D" hole ..... 6.00

## Retainer Ring Hand Tools



Convenient for assembling miniature sockets, plugs and tip jacks to panels or chassis. Designed for hand operation.

Number	Description	List
51-5	For No. 2-9 Rings	\$1.20
51-6	For No. 2-11 Rings	1.20
51-7	For No. 2-10 Rings	1.20
51-1	For "S" type sockets and "CP" type plugs except 7C and 7L sizes. Required where socket spacing is very close.	6.66
51-2	For "S" type sockets 7-large and 7-combination	6.66
51-3	For "SS" steatite sockets and "60" and "61" receptacles. Of two-piece construction... somewhat easier but slower to use than 51-1 (above) for "S" sockets and "CP" plugs	6.66

## Magic Eye Assembly



For easily adapting or replacing a 6 prong magic eye tube in any radio having automatic volume control. Also for FM receivers, test instruments, signal tracers, and as volume level and modulation indicators. Includes 1 megohm target plate resistor wired into socket and 5 wire, color coded cable 22" long. Mounting bracket is slotted for tube adjustment. Complete as illustrated, with escutcheon and hardware for assembly. Tube not included.

No. 58-MEA6 Complete Magic Eye Assembly ..... List \$1.51

## Octal Magic Eye Assembly



Similar to No. 58-MEA6 shown above, but for octal type magic eye tubes. New universal short bracket for the smaller tube sizes permits use of any of the octal magic eye tubes including the dual pattern and the new multi-pattern types. Complete with 8 wire, color coded cable, 22" long, full vision escutcheon and hardware for assembly. Tube not included.

No. 58-MEA8 Complete Octal Magic Eye Assembly ..... List \$1.51

## Magic Eye Escutcheons

Hood type is of sturdy plastic with beautiful antique bronze finish. Full vision type for octal dual-pattern and new octal multi-pattern types is brass with antique bronze finish.



Number	Description	List
10-102	Hood Type. For 6 prong tubes.	\$.15
10-2	Full Vision Type. For octal tubes.	.36



### MIP Molded-In-Plate Sockets



Molded of high dielectric black Bakelite, sturdy, steel mounting plate molded directly into the solid body, cannot come loose or vibrate. Contacts grip tube prongs firmly and retain their resiliency indefinitely. Mount in 1-5/32" round hole. Two 5/32" screw holes on 1-1/2" centers.

Number	Contacts	List	Number	Contacts	List
77-MIP-4	4 Contacts	\$.12	77-MIP-8	8, Octal	\$.14
77-MIP-5	5 Contacts	.12	77-MIP-9	9, Octal style	.18
77-MIP-6	6 Contacts	.12	77-MIP-11	11, Octal style	.24
77-MIP-7L*	7 Large	.14	77-MIP-12	12, Octal style	.30
77-MIP-7S	7 Small	.12			

\* 77-MIP-7L mounts in 1-9/32" D. round hole.

### Compact MIP Sockets



Same as MIP series above but smaller in diameter. Mount in 1-1/8" round hole. Two 5/32" diameter mounting holes on 1-5/16" centers. Black Bakelite dielectric.

Number	Contacts	List
88-8	8 Contacts	\$.14
88-8X	8, Loktal	.21

### Saddle Type Sockets



Sharp nibs on mounting plate score chassis during riveting, breaking thru any oxidation for a perfect ground. Designed for bottom mounting in 1-1/8" round hole. Two 5/32" diameter mounting holes on 1-1/2" centers.

Number	Contacts	List
74-8	8 Octal, Black Bakelite	\$.14

### High Voltage Safety Sockets



For rectifier and other tubes with base diameter of 1.156". Socket is set at the bottom of a deep molded Bakelite shell. Heavy steel mounting plate molded into shell has 5/32" diam. mounting holes on 1-7/8" centers. Socket mounts from above or below in 1-1/2" round hole.

Number	Contacts	List
77A-4T	4 Contacts, Mica-filled	\$.151

### Replacement Sockets



Regular "S" sockets, assembled with No. 4 retainer ring to steel mounting plate with slotted holes to fit mounting centers from 1-1/2" to 1-7/8".

Black Bakelite	List	Contacts	Steatite	List
78-RS4	\$.14	4 Contacts	49-RSS4	\$.48
78-RS5	.14	5 Contacts	49-RSS5	.48
78-RS6	.14	6 Contacts	49-RSS6	.48
78-RS7C	.18	7 Comb.		....
78-RS7L	.14	7 Large	49-RSS7L	.61
78-RS7S	.14	7 Small	49-RSS7S	.48
78-RS8	.18	8 Octal	49-RSS8	.48
78-RS8L	.22	8 Loktal		....
78-RS9	.22	9 Octal style		....
78-RS11	.30	11 Octal style		....

### Floating Octal Sockets



Live rubber grommets fit into mounting holes to cushion this socket for vibration-free operation. Black bakelite dielectric. Mounts in 1-3/16" round hole above or below chassis. Two 1/4" screw holes on 1-1/2" centers.

Number	Description	List
77-MIP-8FK	Octal. Complete with 4 rubber grommets, 2 mounting screws, nuts and washers.	\$.39
11-3K	Kit for making floating connections using Amphenol MIP Sockets, 4 grommets, 2 mounting screws, nuts and washers only.	.24

### Tube Shield and Spring Assemblies



Number	Height	Description	List
5-401	1-3/8"	For 7 Pin Miniature Sockets	\$.14
5-402	1-3/4"	For 7 Pin Miniature Sockets	.14
Tube Shields No. 5-401 and 5-402 are used with Sockets No. 59-367, 147-905, 147-913, 147-925, 147-955 and 147-963.			
5-405	1-1/2"	For Noval Sockets	.20
5-408	1-15/16"	For Noval Sockets	.24
5-409	2-3/8"	For Noval Sockets	.24
Tube Shields No. 5-405, 5-408 and 5-409 are used with Sockets No. 59-369, 59-406 and 59-407.			

## MINIATURE 7 AND 9 PIN SOCKETS

### ZIP-IN, Ethylon-A



Molded of Ethylon-A with high "Q" factor. Mounting plate has .136" diameter holes on 1-5/16" centers. Round chassis holes are 27/32" for 7 pin and 15/16" for 9 pin.

Number	Description	List
59-357	7 Pin. Without tube shield base	\$.21
59-367	7 Pin. With tube shield base	.27
59-359	9 Pin. Without tube shield base	.51
59-369	9 Pin. With tube shield base	.61



Above—Bottom Mounted  
Right—Top Mounted with Tube Shield Base



Number	Contacts	Dielectric	List
147-500	7	Black Bakelite	\$.24
147-501	7	Steatite	.51
59-409	9	Black Bakelite	.39
59-410	9	Mica-Filled Bakelite	.40

### Bakelite and Steatite Sockets

Used for television, FM, auto radios, portables, etc. 147 Series mount in 5/8" chassis hole; mounting centers 7/8"; screw holes 1/8". 59 Series mount in 3/4" chassis hole; mounting centers 1-1/8"; rivet holes .095".

#### Bottom Mounting—No Tube Shield Base

Number	Contacts	Dielectric	List
147-500	7	Black Bakelite	\$.24
147-501	7	Steatite	.51
59-409	9	Black Bakelite	.39
59-410	9	Mica-Filled Bakelite	.40

#### Top Mounting—With Tube Shield Base

147-905	7	Black Bakelite	.39
147-913	7	Mica-Filled Bakelite	.40
147-925	7	Steatite	.63
59-406	9	Black Bakelite	.56
59-407	9	Mica-Filled Bakelite	.57

#### Rubber Mounted—No Tube Shield Base

147-502	7	Black Bakelite	.25
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#### Rubber Mounted—With Tube Shield Base

147-955	7	Black Bakelite	.50
147-963	7	Mica-Filled Bakelite	.51



**Shielded Cable Connectors, 110—250 Volt**  
End Cable Outlet—For cables up to 1/2" diameter



Fully shielded cable terminals with black Bakelite connector units encased in a tight cap that fits securely and is easily removed. Available with cable clamp that relieves soldered connections of strain, or with rubber grommets for protection against abrasion.

With Cable Clamp		With Grommet	
List	Description	List	Description
60-F11	.66 3 Pole Receptacle	60-F4	.60 3 Pole Polarized Plug
60-M11	.66 2 Pole Universal Receptacle	60-M4	.60 2 Pole Standard Plug
61-F11	.54 2 Pole Polarized Plug	61-F4	.48 2 Pole Standard Plug
61-M11	.54 2 Pole Universal Receptacle	61-M4	.48 2 Pole Polarized Plug
61-MP11	.54 2 Pole Polarized Plug	61-MP4	.48 2 Pole Universal Receptacle

**Flush Motor Plug, 110—250 Volt**

Neat, compact plug or receptacle set in type 61-61 steel shell for below surface mounting. Room for insertion of Amphenol End Cable Outlet Plugs.

Number	Description	List
61-F10	2 Pole Universal Receptacle	.48
61-M10	2 Pole Standard Plug	.48
61-MP10	2 Pole Polarized Plug	.48

**Molded-In-Plate Receptacle**



Same as 61-F Receptacle with standard steel mounting plate molded into the Bakelite body. Mounts in 1-3/16" chassis hole; two 5/32" screw holes on 1-1/2" centers.

No. 61-MIP-61F 2 Pole Universal Receptacle.....List..... \$ .30

**Miniature Cable Connectors**



Short

Long

Flared

For shielded or unshielded cables having up to 6 conductors. Black Bakelite elements are housed in cadmium plated brass shells and are held in place by side set screws. Polarized contact spacing makes incorrect insertions impossible. Accommodates cable up to 1/4" diameter.

Short Shell—13/16" Long		Long Shell—1-3/16" Long	
Male	List	Female	List
91-MPM3S	.36	91-MPF3S	.36
91-MPM4S	.40	91-MPF4S	.40

Also use with shielded chassis units shown below.

91-MPM3L	.36	91-MPF3L	.36
91-MPM4L	.40	91-MPF4L	.40
91-MPM5L	.45		
91-MPM6L	.45		

**Note:** Use long shell type with shielded chassis units; use either long or short shells with unshielded types such as 78-S3S and 86-CP-3S.

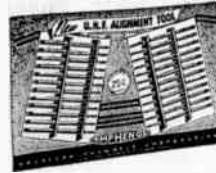
Flared Shell—1-3/16" Long	
Number	List
91-MPF3	.36
91-MPF4	.40

**Shielded Chassis Units**



Economical chassis receptacles for connecting shielded or unshielded cables having from 2 to 6 conductors (for 2 wire cable use 3 contact unit and leave 1 contact unwired). Black Bakelite element; steel mounting plate. Can be mounted on surface or behind chassis or panel in 7/8" D. hole; 5/32" screw holes on 1-1/4" centers. Use with long shell cable connector above for a fully shielded connection.

Female	Description	List
78-PCG3F	3 Contact	.36
78-PCG4F	4 Contact	.36
78-PCG5F	5 Contact	.41
78-PCG6F	6 Contact	.41



**Alignment Tool**



Made of Amphenol 912-A polystyrene. Has no capacity effect when aligning critical circuits. A necessary tool for anyone who must make adjustments on high frequency circuits.

No. 55 U.H.F. Alignment Tool (minimum order 24).....List \$ .25  
Illustrated above is the colorful sales card on which are mounted 24 Amphenol Alignment Tools.  
No. 55-024 Sales Card with 24 Alignment Tools.....List \$6.00

**Shielded Multi-Wire Cable Connectors**



Multi-wire cable connectors consist of Amphenol "S" type tube sockets and "CP" plugs. Metal cap shields connections and provides an unbreakable cover for cable termination. Cap may be removed with an ordinary screwdriver. Accommodates cable up to 7/16" diameter. Female chassis receptacles or sockets 78-S, 78-RS and 77-MIP; male receptacles are listed below.

**With Rubber Grommets**

Female	List	Contacts	Male	List
78-PF4	.31	4 Contact	86-PM4	.31
78-PF5	.31	5 Contact	86-PM5	.31
78-PF6	.31	6 Contact	86-PM6	.31
78-PF7L	.31	7 Large	86-PM7L	.31
78-PF7S	.31	7 Small	86-PM7S	.31
78-PF8	.35	8 Octal	86-PM8	.35
78-PF9	.39	9 Octal Style	86-PM9	.39
78-PF11	.47	11 Octal Style	86-PM11	.47

**With Cable Clamps**

Female	List	Contacts	Male	List
78-PF4-11	.37	4 Contact	86-PM4-11	.37
78-PF5-11	.37	5 Contact	86-PM5-11	.37
78-PF6-11	.37	6 Contact	86-PM6-11	.37
78-PF7L-11	.37	7 Large	86-PM7L-11	.37
78-PF7S-11	.37	7 Small	86-PM7S-11	.37
78-PF8-11	.41	8 Octal	86-PM8-11	.41
78-PF9-11	.45	9 Octal Style	86-PM9-11	.45
78-PF11-11	.53	11 Octal Style	86-PM11-11	.53

**Male Receptacles**

Extremely compact. Held firmly in place by Amphenol patented retainer ring. Can be rotated to line up contacts for shortest possible leads. Nickel-plated steel mounting plate has slotted screw holes, centers from 1-1/2 to 1-7/8".

Number	Contacts	List
86-RCP4	4 Contact	.14
86-RCP5	5 Contact	.14
86-RCP6	6 Contact	.14
86-RCP-7L	7 Large	.14
86-RCP-7S	7 Small	.14
86-RCP8	8 Octal	.18
86-RCP9	9 Octal Style	.22
86-RCP11	11 Octal Style	.30



Female plugs are shown above, other styles can be made by assembling "S" type sockets with plug caps.

**Rubber Plug Handle**



End cable outlet receptacles or plugs (PF and PM or 61-F4 types) snap into this rubber handle and are held securely in place by a live rubber inner molded shoulder. Illustration is cut away to show how connector is gripped by plug handle.

3-RPH Plug Handle Only.....List \$ .18

### 16" TV TUBE MOUNTING ACCESSORIES

For metal and glass tubes



Tube mounting bracket for tube protection in shipping and vibration-free reception — live rubber cushions. Base is molded of polystyrene and holding straps are of fibre laminated phenolic. Easily attached to chassis or cabinet.

155-360 16" Tube Mtg. Bracket  
List \$7.30 ea.



Molded Polyethylene Rim provides a superior mounting using conventional methods. Better protection for tubes and adequate insulation especially where the rim is joined. The unique overlapping provides long creepage paths. Heavy, uniform wall thickness. Outer groove provides for safety or masking glass.

Number Description List

187-072 Rim for 16" TV Tube \$3.65

187-079 Same less safety glass groove..... 3.35



Cross-section

### Receptacle Shells



ACS Shell extends "CP" or "S" type sockets or plugs 13/16" above or below surface. 4 knockouts in sides. Mounts in 1-3/4" hole; has 3 notched holes for No. 6 screws.

Number	Description	List
23-1S	For small "S" Sockets.....	\$.12
23-1L	For large "S" Sockets.....	.12

61-61 Shell. Nickel plated steel shell, lowers bottom of "CP" and "S" type plugs and sockets and 60 and 61 connectors 1-3/16" below surface. Mounts in 1-7/16" hole; two 5/32" screw holes on 1-3/4" centers.



No. 61-61 Shell only.....List \$ .18

### Tip Jacks

Molded of Bakelite in black or red. Mount in 3/8" hole with retainer ring included. Use standard phone tips for 78-1P1, and 78-1 Contacts recessed 1/8". The body may be used as a feed-thru.



Number	Description	List
78-1S	For 3/32" Plug.....	\$.09
78-1L	For 5/32" Plug.....	.09
78-1M	For 1/8" Plug.....	.09
78-1P	For .080 Phone Tip.....	.09
78-1P1	High Voltage for .080 Phone Tip. Mounts in 1/2" hole.....	.12

### Single Prong Plugs



Bakelite Plugs, black or red, for use with Tip Jacks above.

Number	Description	List
71-1S	For 3/32" Socket.....	\$.06
71-1M	For 1/8" Socket.....	.06
71-1L	For 5/32" Socket.....	.06

### Inserts and Shells for Cable Plugs, Connectors and Receptacles. For Assembly Into Type Required



Retainer Ring Type Number	List
61-F	\$.30
60-F	.42

Retainer Ring Type Number	List
61-M	\$.30
61-MP	.30
60-M	.42



"S" Socket (Listings on page 4).



"CP" Plug

### For 110-250 Volt Plugs and Receptacles

Compact in design, molded from high dielectric black Bakelite. Rated at 15 amp., 110 v. or 10 amp., 250 v. Two-pole type accepts any standard electric plug. Retainer ring type mounts in 1-11/64" keyed hole as punched by Tools 25-LD-1 Mounting plate type requires 1-9/32" D. chassis hole; has slotted screw holes on 1-1/2 to 1-7/8" centers—Mounting plate type is similar to Type "RS" Replacement Sockets.

### Receptacles

Description	With Mounting Plate Number	List
2 Pole, Universal	61-F1	\$.34
3 Pole, Polarized	60-F1	.46

### Plugs

Description	With Mounting Plate Number	List
2 Pole, Standard	61-M1	\$.34
2 Pole, Polarized	61-MP1	.34
3 Pole, Polarized	60-M1	.46

### For Multi-Wire Plugs and Receptacles

For quick, easy assembly to chassis or panels from 19 to 16 gage (.044 to .062") using Amphénol retainer ring. Black Bakelite or steatite. Cadmium plated socket contacts for easy soldering; plug prongs are nickel plated brass; rotation feature for lining up contacts. Complete with retainer ring.

Can be assembled in any of the plug caps or receptacle shells below. For chassis mounting in 1-11/64" keyed hole as punched by Tools 25-LD-1.

### "CP" Plugs

Black Bakelite	List	Contacts	Steatite	List
86-CP4	\$.13	4 Prong	49-245-00	\$.49
86-CP5	.13	5 Prong	49-255-00	.49
86-CP6	.13	6 Prong	49-265-00	.49
86-CP7L*	.13	7 Large	.....	.....
86-CP7S	.13	7 Small	.....	.....
86-CP8	.17	8 Prong, Octal	49-285-00	.49
86-CP9	.21	9 Prong, Octal Style	.....	.....
86-CP11	.29	11 Prong, Octal Style	.....	.....

\* Mounts in 1-21/64" keyed hole. Use 25-LD-2.

### Plug Caps for Every Purpose



3-10

3-12

3-13

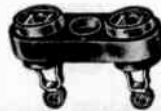
3-17

3-24

Cable terminals can be assembled with these plug caps, using retainer ring type plugs, sockets and 60 and 61 series shown above. Plug caps are designed to fit all but the 7-large and 7-combination sizes. For 7-large and 7-comb. use Plug Cap 3-13L shown below.

Number	Length	End Hole	Side Hole	Grommet	List
3-10	1"	None	None	None	\$.18
3-12	1"	5/16"	None	Metal	.18
3-13	1"	7/16"	None	Rubber	.18
3-17	1"	None	7/16"	Rubber	.18
3-24	Cap with Cable Clamp attached. Accommodates cables to 1/2" diameter.....				.24
79-CC4	Cable Clamp only. Same as used on Cap 3-24.....				.12
3-13L	Cap for large 7 Socket and Plugs, end rubber grommet 7/16" ID.....				.24

### Crystal Holder Socket



Molded of mica-filled Bakelite... Number Description List  
for crystal holders having 2 prongs on 3/4" centers. Easily mounted. 33-2T For 1/8" Prongs... \$.17  
May be used as dual tip jacks on test panels. 33-3T For 5/32" Prongs... .17



### Heavy Duty Power Plugs

Male unit has four heavy brass blades; female has heavy phosphor bronze contacts. For use with current loads up to 15 amperes at 125 volts or 10 amperes at 250 volts. Molded black Bakelite unit is enclosed in tight, heavy brass shell . . . bright cadmium plated. Polarized with shell keys and keyways. Strain is taken up by concealed cable clamp. Grounding screw in body for safe wiring. Threaded locking ring keeps shells tight. Chassis or panel receptacle mounts in 1 1/4" hole in any material up to 1/2" thick. Complete with lock washer, spacer washer and nut.



Plug



Jack



Receptacle

Mating parts are arranged in same horizontal line below.

Number	Contacts	List	Number	Contacts	List	Number	Contacts	List
92-M	Male	\$3.01	92-F	Female	\$3.01	92-C	Female	\$3.01
92-F1	Female	3.01	92-M1	Male	3.01	92-C1	Male	3.01



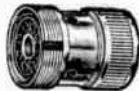
### Flush Receptacles

Flush receptacles may be made up of above receptacles and steel yoke for mounting in regular wall switch boxes. Full open end will come thru wall plate 1/8" to grip locking ring.

Number	Description	List
92-12	Cadmium plated steel yoke only. With mtg. screws	.18
79-CCC8	Cap and Chain. Seals receptacles above and below	.61

### Heavy Duty Radio Connectors

The plugs shown in bold face type mate with jacks and receptacles listed in bold type in the same horizontal line. For numbers in light faced type follow the same procedure . . . plugs mate with jacks and receptacles in the same horizontal line. Bold type also designates the most popular units.



Contacts	Plug		Jack		Receptacle		List
	Male	Female	Female	Male	Female	Male	
4	<b>79-04M</b>	79-04F1	<b>79-04F</b>	79-04M1	<b>79-P04F</b>	79-P04M	\$1.51
5	<b>79-05M</b>	79-05F1	<b>79-05F</b>	79-05M1	<b>79-P05F</b>	79-P05M	1.51
6	<b>79-06M</b>	79-06F1	<b>79-06F</b>	79-06M1	<b>79-P06F</b>	79-P06M	1.51
8	<b>79-08M</b>	79-08F1	<b>79-08F</b>	79-08M1	<b>79-P08F</b>	79-P08M	1.51
12	<b>79-012M</b>	79-012F1	<b>79-012F</b>	79-012M1	<b>79-P012F</b>	79-P012M	2.41



### Bulb Tester and Tube Socket

Standard 7 contact combination socket for large and small 7 prong tubes. For testing miniature bulbs, either screw or bayonet types.

Number	Description	List
78-7CD	With retainer ring	\$.53

### Adapters

A simple way to make adapter units which may be used for modernizing tube checkers and analyzers, adapting new tubes to old circuits and for connections to output meter, phonograph pickup, etc.



Socket Tops Only			Bases Only		
Number	Contacts	List	With side stud accommodating a metal tube grid cap clip. Both tops (left) and bases are drilled for self-tapping screws which are supplied with bases.		
44-8	8 Octal	.24	<b>Number</b>	<b>Prongs</b>	<b>List</b>
44-9	9 Noval	.45	50-8SG	8 Octal	.36

#### Shell Only

Of metal tubing for snap-in connection on either end of Amphenol "S" type sockets or "CP" plugs. Combinations possible from 4 to 11 prongs or contacts.

No. 3-14D With side hole, rubber grommet . . . . . List \$ .24



### Molded Speaker Plugs

Prongs are securely molded into one-piece black bakelite body. Each prong is deeply set into individually molded pocket, eliminating the possibility of shorts in case of pull-back of wire insulation.

With Finger Grip	Prongs	List	With Straight Sides	Prongs	List
71-4	4	\$.13	70-8	8	\$.17
71-5	5	.13	70-9	9	.21
71-6	6	.13	70-12	12	.30
71-7	7	.13	70-20	20	.61

### Miniature Plugs



Cable Type used extensively for speaker connections in compact mid-gets. Ideal for all plug-in connections where space is limited. Brass prongs are deeply recessed in molded pockets preventing shorts due to insulation pulling back. With molded finger grip. Use with miniature sockets.



Chassis Type mounts in plain round 5/8" hole. No screws or rivets required. Held firmly by retainer ring included. Use with female miniature connectors (MPF type).

Cable Type	List Price	Description	Chassis Type	List
71-3S	\$.15	3 Prong	86-CP-3S	\$.15
71-4S	.15	4 Prong	86-CP-4S	.15
71-5S	.21	5 Prong		
71-6S	.21	6 Prong		

### Rectangular Plugs and Sockets



For compact apparatus. Plugs are often used as a supported type self-sustaining coil form.

Style	Plugs			List
	Number	Style	Prongs or Contacts	
Style B	70-25	B	3	.15
	70-26	B	4	.18
Style C	77-26	C	4	.30

### Tap Change Switch



An 8-position single pole continuous switch with white markings clearly visible in window cap. Side set screw locks switch arm in position preventing accidental tap changes.

Number	Description	List
36-1	With numerals 1 to 8	\$.90
36-2	With impedance markings 0-2-4-8-16-250-500	.90

### Universal Grid Cap



A grid cap of improved design for universal use with tube grid caps from 1/4 to 3/4" diameter including standard glass and metal tubes. Spring brass contacts in phenolic body.

63-1 Unwired Grid Cap . . . . . List Price \$ .18





# AMERICAN PHENOLIC CORPORATION

1830 SOUTH 54TH AVENUE, CHICAGO 50, ILLINOIS

## Series 75 Microphone Connectors—Single Contact

Fit almost every microphone. Standard with leading manufacturers for many years. Compact, rugged, neat. Chassis receptacles are integral parts of microphones using single conductor cable. Widely used in amplifiers, transmitters, phonoelectric devices, home recorders and similar equipment. They are also suitable for connecting various units such as PM speakers, headphones, and for theft alarms or wall type coin operated devices, etc.

In the 75 Series, plugs mate with all cable jacks and receptacles. Circuit closing contacts are the same except that they close the circuit when plug is disengaged, eliminating open circuit grid howls.

Locknut Receptacles mount in .385" holes when grounding to chassis and 3/8" holes for ungrounded 2 circuit applications.



75-MC1FA

Angle Plug



75-MC1F

Straight Plug



75-MC1M

Cable Jack



75-PC1M



75-CL-PC1M

Locknut Receptacles

Contact List		Contact List		Contact List		Contact List		
75-MC1F-A	Flush	\$1.00	75-MC1F	Flush	\$.45	75-MC1M	Flush	\$.35
						75-PC1M	Flush	\$.30
						75-CL-PC1M	Cl. Cr.	\$.45

## Cap and Chain



Seals open chassis units against dirt and dust. Also used with 80 Series Connectors. 75-CCC1... List \$.55 Cl. Cr. Closed Circuit.

## Phone Plug Adapter



Screws into coupling ring of 75-MC1F and 75-MC1F-A plugs, permitting the cable to be plugged into any standard phone jack. No soldering or wiring.

75-MC1P.....List \$.50

## Microphone Switch

Threaded on one end, coupling ring on the other end. For 75 Series Connectors. May be connected directly to any mike equipped with 75-PC1M or similar receptacle. Push-to-talk or slide button for permanent connection.

75-MC1S.....List \$1.40



## Series 80 Microphone Connectors—Single and Double Contacts



80-MC2M

Plugs



80-MC2F

Cable Jacks



80-PC2F

Locknut Receptacles

Contacts		List	Contacts		List	Contacts		List
<b>SINGLE CONTACT</b>								
80-M	M	\$.71	80-F	F	\$.71	80-C	F	\$.44
80-F1	F	.71	80-M1	M	.71	80-C1	M	.44
<b>TWO CONTACTS</b>								
80-MC2M	M	.88	80-MC2F	F	.88	80-PC2F	F	.49
80-MC2F1	F	.88	80-MC2M1	M	.88	80-PC2M	M	.49

Series 80 Cable Connectors are designed for shielded cables; for single and two conductor coaxial cables, microphone cables; for twisted pairs, concentric lines, photo cell leads, patch cords and similar uses. Suitable for connecting model railroad equipment, pin ball games and other small electrical apparatus. Elements are high dielectric black Bakelite. Receptacles mount in 5/8" chassis holes. Maximum chassis thickness for locknut type receptacles is 11/32".

Mating families of connectors are listed in horizontal lines.

The most popular connectors are shown in bold face type.

Cap and Chain required is 75-CCC1.

M Male. F Female.

## Series 91 Microphone Connectors—3 and 4 Contacts

Extensively used on all types of portable apparatus, these connectors were designed primarily to use with microphones. Some of the advantages of Amphendol Microphone Connectors...

- Accidental disconnections are eliminated by a positive screw-type connection.
- Incorrect insertions are impossible because connectors are polarized.

- Pulling and twisting strain on soldered contacts is eliminated because a squeeze-type clamp grips cable securely after assembly.

Chassis receptacles mount in 27/32" chassis holes. Maximum chassis thickness for chassis receptacle is 1/8".

Mating families of connectors are listed in horizontal lines.



91-MC3M

Plugs



91-MC3F

Cable Jacks



91-PC3F

Chassis Receptacles

Contacts		List	Contacts		List	Contacts		List
<b>THREE CONTACTS</b>								
91-MC3M	M	\$1.10	91-MC3F	F	\$1.10	91-PC3F	F	\$.55
91-MC3F1	F	1.10	91-MC3M1	M	1.10	91-PC3M	M	.55
<b>FOUR CONTACTS</b>								
91-MC4M1	M	1.20	91-MC4F	F	1.20	91-PC4F	F	.60
91-MC4F1	F	1.20	91-MC4M1	M	1.20	91-PC4M	M	.60

## Side Cable Outlet



Provide an outlet for microphone cable where it is not practical to run the cable thru the stand. For use between microphones and stands having 5/8-27 threads.

91-SCO3.....List \$. 82

## Cap and Chain

For 91 Series Connectors. Same construction and material as No. 75-CCC1.

No. 91-CCC3.....List \$ .55

M Male. F Female. The most popular connectors are shown in bold face type.

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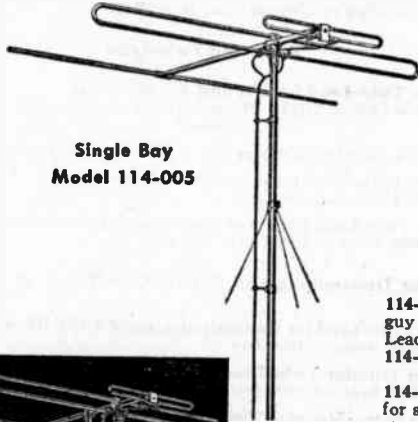
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### Television Antennas

Engineered and perfected in the Amphenol Antenna Development Laboratories, the antennas illustrated and described on this page will provide unsurpassed reception of FM and TV signals. Top-quality

materials, rugged construction and the latest in design are incorporated into each Amphenol antenna to provide perfect performance. Each antenna packaged complete with instructions for easy installation.



Single Bay  
Model 114-005



Piggy-Back  
TV Antenna  
Model 114-026



"Telestar"  
Indoor  
TV Antenna  
Model  
114-024



TWO BAY  
INLINE TV  
ANTENNA  
MODEL  
114-302

114-005 TELEVISION ANTENNA ARRAY, complete with mast, swivel mounting plate, guy clamp, necessary hardware, stand-off insulators and 75 ft. Amphenol 300 ohm Twin-Lead.....List ea. \$19.50  
114-009 Same less transmission line.....List ea. 17.00

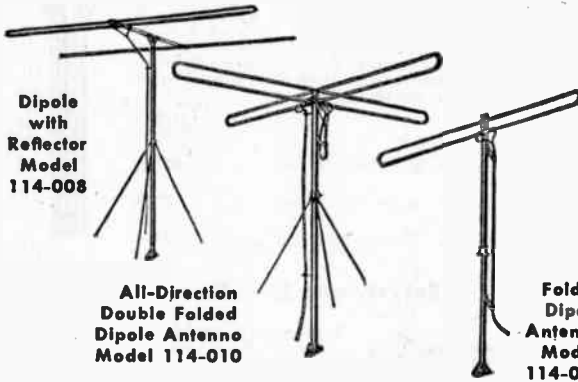
114-301 SINGLE BAY for building 114-005 into a Stacked Array includes connecting rods for symmetrical feed, two box brackets, two 5-foot lengths of 1-1/4" Mast, guy ring and stand-off insulators.....List ea. \$20.50

114-302 TWO BAY TV STACKED ARRAY consists of a top and bottom bay, connecting rods, two box brackets, two 5-foot lengths of 1-1/4" mast, guy ring and stand-off insulators. Twin-Lead transmission line is not included.....List ea. \$35.00

114-026 PIGGY-BACK TV ANTENNA consists of one folded dipole and reflector for each band which may be oriented individually, phasing leads, guy clamp, stand-off insulators and 75 ft. Amphenol Twin-Lead.....List ea. \$19.50  
114-029 Same less transmission line.....List ea. 17.00

114-024 INDOOR TV ANTENNA "TELESTAR" has low-loss polystyrene base with rubber feet to protect furniture. Light weight aluminum rods are pre-tuned for receiving all channels. Five-foot natural color polyethylene 300 ohm Twin-Lead is included.  
List ea. \$4.95

### FM Antennas



Dipole  
with  
Reflector  
Model  
114-008

All-Direction  
Double Folded  
Dipole Antenna  
Model 114-010

Folded  
Dipole  
Antenna  
Model  
114-001

114-008 DELUXE FM FOLDED DIPOLE WITH REFLECTOR, complete with mast, mounting plate, insulators, guy clamp, hardware and 75 ft. Amphenol 300 ohm Twin-Lead.....List ea. \$16.25  
114-023 Same less transmission line.....List ea. 12.65

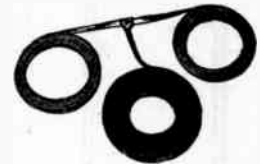
114-010 DELUXE FM ALL-DIRECTION DOUBLE FOLDED DIPOLE ANTENNA, complete with quarter-wave phasing stub, mast, mounting plate, guy clamp, hardware, insulators, and 75 ft. Amphenol 300 ohm Twin-Lead.....List ea. \$16.25  
114-015 Same less transmission line.....List ea. 12.65

114-001 FM FOLDED DIPOLE ANTENNA, complete with mast, swivel mounting plate, insulators, guy clamp, necessary hardware and 75 ft. Amphenol 300 ohm Twin-Lead.....List ea. \$12.25  
114-012 Same less transmission line.....List ea. 8.65

### Twin Lead Folded Dipole Amateur Antennas

The finest ready-made amateur transmitting antenna ever developed. Ready-cut to the four most popular bands. Broadband characteristics. Excellent for your regular transmitting antenna, as an auxiliary antenna or for portable or field day use. Flat top portion is Amphenol 14-022 with copper clad steel conductors, 75 foot lead-in is Amphenol 14-056 joined to top with molded "T" junction. Packaged complete with easy installation instructions.

A real DX antenna, cut-to-band, in use by thousands of amateurs.



Amphenol Number	Frequency	Band	Antenna Length	Price
139-813	28 mc	10 Meters	18 feet	\$ 2.70
139-815	14 mc	20 Meters	35 feet	6.60
139-816	7 mc	40 Meters	70 feet	13.50
139-817	3.5 mc	80 Meters	135 feet	28.75

# AMPHENOL

## AMERICAN PHENOLIC CORPORATION

### Twin-Lead Transmission Lines

Illustrated are 14-056 Flat Twin-Lead and 14-271 Tubular Twin-Lead.



Coil of 300 ohm Twin-Lead 14-056 packaged in handy carton.

Number	List
184-801 75 ft.	\$2.55
184-802 100 ft.	3.40

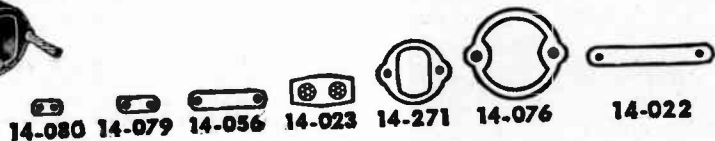
Convenient, efficient Amphenol Twin-Lead is the first choice of amateurs for construction of antennas and transmission lines. It transmits signals with minimum losses... it's durable... inexpensive... simple to install... repels water... is unaffected by acids, alkalis and oils because the dielectric is Amphenol Polyethylene. Remains flexible at -70°C. and after continuous aging in sunlight.

#### Receiving Twin-Lead

	List Per 1000 ft.
300 ohm Twin-Lead for FM and TV Antennas	
14-056 (500) & (1000) Standard, brown polyethylene insulation.....	\$32.00
14-271 Tubular for deluxe FM and TV. Reels of 1000 feet..	60.50
150 ohm Twin-Lead for experimental work	
14-079 Reels of 1000 feet.....	26.50
75 ohm Twin-Lead for lower impedance applications	
14-080 Reels of 1000 feet.....	23.50

#### Amateur Transmitting and Copper Clad Types of Twin-Lead

75 ohm Twin-Lead for transmitting, rated 1 KW RF power	
14-023 Reels of 1000 feet.....	\$104.00
300 ohm Tubular Twin-Lead rated 1 KW RF power	
14-076 Reels of 1000 feet.....	86.00
300 ohm Extra-Strength Twin-Lead with copper clad conductors	
14-022 Reels of 1000 feet.....	76.50



### Antenna Accessories

#### Stand-Off Insulators



66-201

66-202



66-909

Screw eye insulators have low-loss polyethylene inserts. Twin-Lead types accommodate 14-056, 14-079 and 14-080. Coax types accommodate coax and other cable not exceeding 1/2" diameter. Wood screws are No. 14 and machine screws have 10-32 thread.

	Twin-Lead Type List per 100	Coax or Tubular Type List per 100
Wood Screws	66-202 3" length... \$4.44	66-201 3" length... \$5.44
	66-209 7 1/4" lgth... 7.64	66-208 7 1/4" lgth... 7.94
Mach. Screws	66-204 3" length... 6.11	66-203 3" length... 6.42
	66-210 7 1/4" lgth... 8.35	
Nail-ins	66-211 8 1/2" lgth... 6.25	66-212 3 1/4" lgth... 7.11

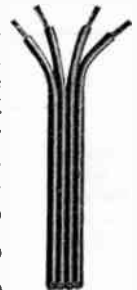
Polystyrene stand-off insulators space Twin-Lead 1-5/16" from mounting surface. Perfect insulation.

66-909 for 14-056 300 ohm Twin-Lead.....List ea. \$0.835

#### Remote Control Wire

For wiring antenna rotators and other low voltage remote controls such as miniature electric trains. Recommended for circuits up to 28 volts. For easy wiring, each conductor with its insulation may be ripped apart without exposing the conductor. Conductors are 7/28 copper wire with one conductor tinned to facilitate tracing. High dielectric polyethylene insulation is weatherproof.

	List per 1000 ft.
14-316 3 conductor Reels of 1000 feet.....	\$34.00
14-298 4 conductor Reels of 1000 feet.....	37.50
14-317 5 conductor Reels of 1000 feet.....	45.50



#### Polystyrene Line Spreaders



For separating feeder lines and construction of folded dipole antenna from wire. Wire holes .085" diameter.

2" spacing	4" spacing	6" spacing
66-205..List ea. \$.15	66-206..List ea. \$.20	66-207..List ea. \$.25

#### Antenna Mast Extensions

Television Mast Extension for 114-302 two bay television antenna and other 1-1/4" diameter antenna masts. Consists of 5 foot length of 1-1/4" diameter alloy steel tubing, guy ring and two clamp type stand-off insulators.

114-291.....List ea. \$3.00

FM and Television Mast Extension for all Amphenol FM and Television antennas except the two bay antenna which requires the mast extension listed above. Consists of 5 foot length 3/4" steel conduit and guy wire clamp.

114-300.....List ea. \$3.00



#### Lightning Arrestor For Antennas

Attaches to 14-056 300 ohm Twin-Lead without cutting the conductors. Designed to meet the requirements of the Underwriters' Laboratories. Molded of high grade electrical phenolic with conducting plate and gap molded in. Precise gap spacing is maintained. Self contained also is a high resistance shunt permanently sealed against moisture. Overall dimension 1-7/8"x2"x3/4".

155-338.....List ea. \$1.40



COAXIAL CABLES AND CONNECTORS • INDUSTRIAL CONNECTORS, FITTINGS AND CONDUIT • ANTENNAS • RADIO COMPONENTS • PLASTICS FOR ELECTRONICS

# AMPHENOL



**Amphenol Coax and Twinax RG Cables**

Fully approved and produced in accordance with Army-Navy specifications (JAN-C-17A). These specifications utilize the very fine dielectric properties of polyethylene, proven most efficient as a low-loss, flexible, mechanically stable dielectric. The outer jacket in most of Amphenol's approved types is tough, resistant vinyl . . . protective, nonhygroscopic, and impervious to exposure to acids, alkalis, oils and gasoline. Polyethylene is also used as outer jacket for some of the types listed.

Polyethylene is processed in strict accordance with Bureau of Ships Specification RE-9172. It should be emphasized that unusually strict standards are applied to every operation in the processing of Amphenol's RG cables. Rigid laboratory tests and process checks, plus Amphenol's "OK" certification and notarized affidavit on every unit shipment is final assurance of extra quality and dependability.



**RG-5/U**  
**21-001**

50 ohm Coax Cable with medium size, solid copper conductor, double copper shield and black vinyl jacket.



**RG-8/U**  
**21-004**

50 ohm Coax Cable with medium size, stranded copper conductor, single copper shield and black vinyl jacket.



**RG-11/U**  
**21-007**

70 ohm Coax Cable with medium size, stranded tinned-copper conductor, single copper shield and black vinyl jacket.



**RG-22/U**  
**21-038**

95 ohm Twinax Cable with two small size, stranded copper conductors, single tinned-copper shield and black vinyl jacket.



**RG-57/U**  
**21-039**

95 ohm Twinax Cable with two medium size stranded copper conductors, single tinned-copper shield and black vinyl jacket.



**RG-58/U**  
**21-024**

50 ohm general purpose Coax Cable with a small size, solid copper conductor, single tinned-copper shield and black vinyl jacket.

**Polyethylene Characteristics**

Specific Gravity	92
Water Absorption	.005%
Cold-Brittleness	-70° C.
Dielectric Constant, 60 cycles to 100 mc	2.29
Power Factor, 60 cycles to 100 mc	.0004
Volume Resistivity, ohm-cm	10 <sup>18</sup>
Softening Temperature, transparency point	103-105° C.

**RG Cables**

Chart shows characteristics and dimensions of RG Cables manufactured by Amphenol. Further specifications and prices on request. Impedance subheads below are approximate . . . for the purpose of grouping. Nominal impedance is shown in the third column.

Abbreviations used in chart: C—Copper CW—Copperweld N—Nichrome Poly.—Polyethylene S—Silvered Copper T—Tinned Copper

Amphenol No.	Army-Navy No.	Nominal Impedance	Nominal mmf ft.	Conductor Wire Size	Dielectric O.D.	Inner Shield	Outer Shield	Vinyl Jacket	Jacket O.D.
<b>50 Ohm Group</b>									
21-018	RG-29/U	53.5	28.5	20	.116	T	..	Poly.	.184
21-024	RG-58/U	53.5	28.5	20	.116	T	..	Black	.195
21-199	RG-58A/U	52	28.5	19-.0073	.116	T	..	Black	.195
21-023	RG-55/U	53.5	28.5	20	.116	T	T	Poly.	.206
21-001	RG-5/U	52.5	28.5	16	.185	C	C	Black	.332
21-017	RG-21/U	53	29	16N	.185	S	S	Grey	.332
21-004	RG-8/U	52	29.5	7-21	.285	C	..	Black	.405
21-006†	RG-10/U	52	29.5	7-21	.285	C	..	Grey	.405
21-005	RG-9/U	51	30	7-21 S.	.280	S	C	Grey	.420
21-231	RG-9A/U	51	30	7-21 S.	.280	S	S	Grey	.420
21-010	RG-14/U	52	29.5	10	.370	C	C	Grey	.545
21-041†	RG-74/U	52	29.5	10	.370	C	C	Grey	.545
21-013	RG-17/U	52	29	.188	.680	C	..	Grey	.870
21-014†	RG-18/U	52	29	.188	.680	C	..	Grey	.870
21-015	RG-19/U	52	29.5	.250	.910	C	..	Grey	1.120
21-016†	RG-20/U	52	29.5	.250	.910	C	..	Grey	1.120
<b>60 Ohm Group</b>									
21-022	RG-54A/U	58	26.5	7-.0152	.178	T	..	Poly.	.250
<b>70 Ohm Group</b>									
21-025	RG-59/U	73	21	22 CW	.146	C	..	Black	.242
21-002	RG-6/U	76	20	21 CW	.185	S	C	Grey	.332
21-007	RG-11/U	75	20.5	7-26 T	.285	C	..	Black	.405
21-008†	RG-12/U	75	20.5	7-26 T	.285	C	..	Grey	.405
21-009	RG-13/U	74	20.5	7-26 T	.280	C	C	Black	.420
21-011	RG-15/U	76	20	15 CW	.370	C	C	Black	.545
21-019	RG-34/U	71	21.5	7-21	.455	C	..	Black	.625
21-020†	RG-35/U	71	21.5	9	.680	C	..	Grey	.870
21-125**	.....	72	21.5	9	.680	C	..	Grey	.870
<b>90 Ohm Group</b>									
21-029*	RG-71/U	93	13.5	22 CW	.146*	T	T	Poly.	.250
21-026*	RG-62/U	93	13.5	22 CW	.146*	C	..	Black	.242
21-003*	RG-7/U	97.5	12.5	19	.250*	C	..	Black	.370
21-038	RG-22/U	95	16	Two 7-.0152	.285	T	..	Black	.405
21-039	RG-57/U	95	17	Two 7-21	.472	T	..	Black	.625

\* Semi-solid Dielectric

\*\* RG-35/U less armor

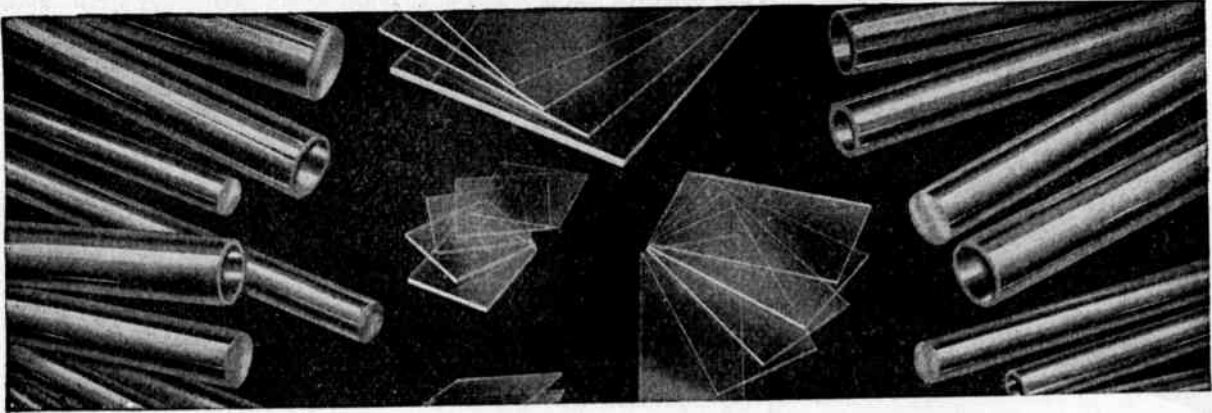
† Armored Cable

WRITE FOR PRICES WHICH ARE BASED ON REEL LENGTHS

# AMPHENOL

## AMERICAN PHENOLIC CORPORATION

### Polystyrene, Polyweld and Coll Forms



**B**ECAUSE of its low-loss factor, Amphenol POLYSTYRENE is used extensively for sockets, insulators and dielectrics in the very-high, ultra high and super high frequency

fields. Further, it is colorless and transparent and does not deteriorate with age. Continuous exposure to sunlight affects its clarity only slightly.

#### "912-A" Polystyrene Rods

Supplied in 12" and 48" lengths as shown below. Also available in diameters from 1 1/8" to 4 1/2" in 12" lengths or in lengths up to 48".

List 12" Diam-		List 48"	
Number	Lgth.	Number	Lgth.
19R125	.04 1/8"	19R125-48	.15
19R187	.08 3/16"	19R187-48	.31
19R250	.13 1/4"	19R250-48	.51
19R312	.20 5/16"	19R312-48	.77
19R375	.29 3/8"	19R375-48	1.11
19R500	.52 1/2"	19R500-48	2.00
19R625	.81 5/8"	19R625-48	3.12
19R750	1.15 3/4"	19R750-48	4.49
19R875	1.59 7/8"	19R875-48	6.16
19R1000	2.15 1"	19R1000-48	8.29

#### "912-A" Polystyrene Tubes

Tolerances maintained suitable for radio coil form and electronic applications. . . . supplied in 12" and 48" lengths in various diameters as shown. Wall thickness is 1/16".

List 12" Overall		List 48"	
Number	Lgth. Diameter	Number	Lgth.
19T1-062	.10 3/16"	19T1-062-48	\$.40
19T2-062	.15 1/4"	19T2-062-48	.55
19T3-062	.20 5/16"	19T3-062-48	.75
19T4-062	.25 3/8"	19T4-062-48	.95
19T5-062	.35 1/2"	19T5-062-48	1.35
19T6-062	.45 5/8"	19T6-062-48	1.75
19T7-062	.55 3/4"	19T7-062-48	2.15
19T8-062	.75 1"	19T8-062-48	2.95

#### "912-A" Polystyrene Sheet Stock

Optical clarity suitable for dial window and gage glass applications.

Number	Size	List per Sheet
19-0628	4"x8"x1/16"	\$.28
19-0938	4"x8"x3/32"	.34
19-1258	4"x8"x1/8"	.40
19-1878	4"x8"x3/16"	.50
19-2508	4"x8"x1/4"	.67

#### Amphenol POLYWELD "912"



Amphenol POLYWELD "912", colorless, transparent and ready-to-use, is pure polystyrene in solution. Matchless for "doping", coating, impregnating or sealing for radio frequency, ultra-high frequency, very-high frequency or general electronics applications. Used as an adherent, POLYWELD joins two sections of polystyrene. It contains solvents which will actually "weld" the surfaces of polystyrene into a single unit of uniform tensile strength.

Description	Polyweld "912"	List
2 oz. Bottle	53-912-2	\$.50
4 oz. Bottle	53-912-4	.65
Pint Container	53-912-P	2.25
Quart Container	53-912-Q	4.00
1 gallon Can	53-912-G	13.35

Description	Thinner	List
2 oz. Bottle	53-916-2T	\$.25
4 oz. Bottle	53-916-4T	.35
Pint Container	53-916-PT	.50
Quart Container	53-916-QT	.80
1 gallon Can	53-916-GT	2.00

#### Amphenol 912-A Polystyrene Coll Forms



#### Plug-In Coll Forms—A

Prong spacing fits standard tube sockets. Diameter of coil 1 1/4"; length of body 2 1/4"; Impregnate wound coils with Amphenol "912" Polyweld.

Number	Description	List
24-4P	4 Prong	\$.40
24-5P	5 Prong	.40
24-6P	6 Prong	.40

#### Miniature Plug-In Coll Forms—B

For transceivers, low power transmitters and UHF receivers.

No. 24-6H 6 Prong . . . . . List \$ .40

#### Miniature Coll Forms—C

Raised hole in center of base for self-tapping screw.  
No. 24 3/4" OD, 1-9/16" long. . . . . List \$ .15

COAXIAL CABLES AND CONNECTORS • INDUSTRIAL CONNECTORS, FITTINGS AND CONDUIT • ANTENNAS • RADIO COMPONENTS • PLASTICS FOR ELECTRONICS

# AMPHENOL

# EBY SALES COMPANY

## SOCKETS

### MINIATURE SHOCK SHIELD TYPE:

7 prongs, 7/8" mounting centers



Cat. No.		List Price each
102M	Ceramic, beryllium copper contacts, JAN-SO-10C	\$1.15
103M	Mica-filled bakelite, beryllium copper contacts, JAN-SO-10M	0.70
8322	Black bakelite, phosphor bronze contacts	0.32
8328	Ceramic, phosphor bronze contacts	0.55
8329	Mica-filled bakelite, phosphor bronze contacts	0.35

### MINIATURE SADDLE TYPE:

7 prongs, 7/8" mounting centers



Cat. No.		List Price each
8323	Black bakelite, phosphor bronze contacts (with center grounding shield)	\$0.17
8539	Black bakelite, phosphor bronze contacts (no center grounding shield)	0.15
8328	Ceramic, phosphor bronze contacts (with center grounding shield)	0.45
8327	Mica-filled bakelite, phosphor bronze contacts (with center grounding shield)	0.20

### SHIELDS FOR MINIATURE SHOCK SHIELD TYPE SOCKETS:

Brass, cadmium plated with inner spring.



Cat. No.		List Price each
7797	Height 1 3/4"	\$0.19
7798	Height 1 3/8"	0.19
8694	Height 2-11/64"	0.30

### FOR MINIATURE SADDLE TYPE SOCKET:



Cat. No.		List Price each
8757	Height 1 3/4". Steel, cadmium plated	\$0.10
8758	Shield holder	0.05

### LAMINATED MINIATURE SOCKETS:



Cat. No.		List Price each
48-1	7 pin, laminated bakelite, spring brass contacts, no center grounding shield	\$0.10
48-2	7 pin, laminated bakelite spring brass contacts, with center shield and ground strap	0.11
48-23	9 pin, laminated bakelite, spring brass contacts, with center shield, no ground strap	0.13

### CRYSTAL SOCKET



Cat. No.		List Price each
CR-7	For crystals having .050 diameter pins and .486 spacing between pins. Steatite, grade L-5 JAN-1-10. Contacts: Phosphor bronze, cadmium plated, or beryllium copper; silver plated with tabs tinned. Phosphor Bronze Contacts \$0.40 Beryllium Copper Contacts 0.60	



SO-200	For crystals having 3/4" centers and .135 diameter. Banana type or .156 solid type pins. Insulator: Low Loss Phenolic. Contacts: Beryllium Copper, Silver Plated	0.65
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### TYPE 12 SOCKETS

Phosphor bronze contacts, 1-11/16" mounting centers

Cat. No.	No. of Contacts	List Price each
12-4	4	\$0.40
12-5	5	0.45
12-6	6	0.45
12-7 N-O	7 lg. & sm. comb.	0.50
12-8	8 Octal	0.50



### OCTAL SADDLE TYPE:

Cat. No.		List Price
9067	Black bakelite, steel saddle, cadmium plated with 4 ground lugs. Mounting centers, 1-5/16". Brass contacts, cadmium plated.	\$0.13 ea.



### LOCTAL SADDLE TYPE:

Cat. No.		List Price
8451	Black bakelite, steel saddle, cadmium plated with 4 ground lugs. Mounting centers 1-5/16". Phosphor bronze contacts, cadmium plated.	\$0.17 ea.

### OCTAL ALL-MOLDED TYPE:

Cat. No.		List Price
8490	Black bakelite, mounting centers 1-5/16". Brass contacts, cadmium plated.	\$0.14 ea.



### LOCTAL ALL-MOLDED TYPE:

Cat. No.		List Price
8191	Black bakelite, mounting centers 1-5/16". Phosphor bronze contacts, cadmium plated.	\$0.16 ea.

### MAGNAL TYPE TELEVISION SOCKET:

Cat. No.		List Price
S-20-11	Black bakelite, phosphor bronze contacts, cadmium plated. 11 contacts. Supplied with press-on permanent mounting ring.	\$0.95 ea.



### DUO DECAL TYPE TELEVISION SOCKET:

Cat. No.		List Price
9706	Accommodates up to 12 pins. Top diameter is 1-23/32"; overall depth is 63/64". Contacts recessed to avoid shorting.	\$1.10 ea.

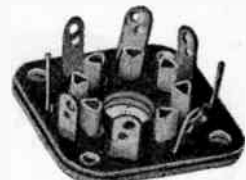


### DI HEPTAL TYPE TELEVISION SOCKET:

Cat. No.		List Price
9709-8	Heavy-duty type, accommodates up to 14 pins. Top diameter is 2-7/32"; overall depth is 63/64". Contacts recessed to avoid shorting.	\$1.20 ea.

### OCTAL TYPE:

Cat. No.	48-5-E 8 prong:	
Dimensions:		
Mounting Centers	1-5/16"	
Overall Width	1-13/32"	
Overall Length	1-5/8"	
	List Price	\$0.10 ea.



### Cat. No. 46-1-E 8 prong:

Dimensions:	
Mounting Centers	1-1/2"
Overall Width	1-13/32"
Overall Length	1-27/32"
	List Price \$0.10 ea.

### GLASS TUBE TYPE:

Cat. No.	Mounting Centers	Width	Length	List Price each	
34-1AA	4 prong	1 1/2"	1 3/8"	1 7/8"	\$0.10
34-1-B	5 prong	1 1/2"	1 1/2"	1 7/8"	0.11
34-1-C	6 prong	1 1/2"	1 1/2"	1 7/8"	0.12
34-1-DX	7 prong	1 1/2"	1 1/2"	1 7/8"	0.13

## PLUGS



### MOLDED BATTERY PLUGS

Cat. No.	Number of Prongs	Volts	Batt.	List Price each
30-2	2	3	A	\$0.09
30-3B	3	45	B	0.09
30-3C	3	4½	C	0.09
30-4L	4		A & B	0.09
30-5	5	22½	C	0.11
30-7½	5	7½	C	0.11



Cat. No.	Number of Prongs	Volts	Batt.	List Price each
30-2M	2	1½	A	\$0.08
30-2M3	2	6	A	0.09
30-3M	3	45	Midget B	0.08



### MOLDED SPEAKER PLUGS

Cat. No.	No. of Prongs	List Price ea.
29-4	4	\$0.11
29-5	5	0.11
29-6	6	0.12
29-7	7 .750 layout	0.13



Cat. No.	No. of Prongs	List Price ea.
28-4	4	\$0.20
28-5	5	0.21
28-6	6	0.24
28-7	7 .750 layout	0.26



### LAMINATED BATTERY PLUGS

Cat. No.	Number of Prongs	Volts	Batt.	List Price each
66-2	2	3	A	\$0.06
66-2M	2	1½	A	0.05
66-2M3	2	6	A	0.05
66-3B	3	45	B	0.07
66-3C	3	4½	C	0.08
66-3M	3	45	Midget B	0.06
66-4MS	4		A & B	0.07
66-4	4		A & B	0.09
66-4½	2	4½	A	0.05
66-8	9		A & B	0.13

## BINDING POSTS



**Cat. No. 37. ENSIGN:** Knobs and base are molded Bakelite. Metal inserts are plain brass. Knurled base prevents post turning.

**Knob:** ½" diam. x 7/16" high.  
**Base:** ½" diam. x ¼" thick.  
**Solid Stem:** 6/32" x 5/8" long.  
**Drilled Neck Diameter:** 3/16".  
**Width of contact flanges:** 3/8".

**List Price \$0.35 ea.**

**Cat. No. 38. ENSIGN:** Same as No. 37 except that it has a molded insulating boss on base.

**List Price \$0.37 ea.**

**Cat. No. 39. ENSIGN:** Same as No. 37 except that it has molded dowel pin on base.

**List Price \$0.37 ea.**



**Cat. No. 40. COMMANDER:** Knobs and base are molded Bakelite. Metal inserts are plain brass. Knurled base prevents post turning.

**Knob:** 9/16" diam. x ½" high.  
**Base:** ¾" diam. x ¼" thick.  
**Solid Stem:** 8/32" x 7/8" long.  
**Drilled Neck Diameter:** 13/64".  
**Width of contact flanges:** 7/16".

**List Price \$0.50 ea.**

**Cat. No. 41. COMMANDER:** Same as No. 40 except that it has a molded insulating boss on base.

**List Price \$0.55 ea.**



**Cat. No. 42. COMMANDER:** Same as No. 40 except that it has a metal dowel pin on base.

**List Price \$0.55 ea.**

**Cat. No. 43. ADMIRAL:** Knobs and base are molded Bakelite. Metal inserts are plain brass. Knurled base prevents post turning.

**Knob:** 5/8" diam. x 17/32" high.  
**Base:** 23/32" diam. x ¼" thick.  
**Solid Stem:** 8/32" x ¾" long.  
**Plain Neck:** 13/64" diameter.  
**Width of contact flanges:** 7/16".

**List Price \$0.60 ea.**

**Cat. No. 44. ADMIRAL:** Same as No. 43 except that it has molded insulating boss on base.

**List Price \$0.55 ea.**

**Cat. No. 45. ADMIRAL:** Same as No. 43 except that it has a molded dowel pin on base.

**List Price \$0.55 ea.**

**Cat. No. 43-S. ADMIRAL:** Same as No. 43 except that it has a elongated slot in neck.

**List Price \$0.65**



**Cat. No. 21-R. All-molded Bakelite, non-removable tops. Both posts completely insulated. Center mounting screw 6/32" x ¼" long. Base is 2" long, 11/16" wide and 3/16" thick. Center distance between posts is 7/8".**

**List Price \$0.70 ea.**

**Cat. No. 21-S. All-molded Bakelite, non-removable tops. One post is completely insulated. One mounting screw 6/32" x ¼" long. Ground post is second mounting screw. Base is 2" long, 11/16" wide and 3/16" thick.**

**List Price \$0.70 ea.**

## TIP JACKS

**Cat. No. 49. Top diameter ½" x 5/32" thick. Threaded brass body 5/16"-32 x ¾" long. One hexagon nut and two insulating washers furnished. Hole for washers is 19/64". Red or Black Bakelite top.**

**List Price: Red \$0.19 ea.  
Black 0.17 ea.**



**Cat. No. 52. Top diameter ½" x 1/8" thick. Body is 5/16" x ¾" long. Special steel assembly washers, cadmium plated, are furnished. Red or black Bakelite.**

**List Price: Red \$0.10 ea.  
Black 0.09 ea.**



**Cat. No. 76. Top diameter 5/8" x 5/32" thick. Body is .495" x 5/8" long. Special steel assembly washers, cadmium plated, are furnished. Red or black Bakelite.**

**List Price: Red \$0.18  
Black 0.15**



**Cat. No. 17. This twin jack with molded Bakelite base, is provided with two terminals 1¾" apart and has a 6/32" x ¼" mounting screw at center.**

**List Price \$0.65 ea.**



**Cat. No. 18. Twin jack, is provided with two terminals 7/8" apart and has two .140" diameter holes, 1-11/16" centers. Bottom plate is 1/16" thick, top plate 1/32" thick. 5/8" wide x 2-1/16" long.**

**List Price \$0.13 ea.**



**Cat. No. 18-T. Triple jack is provided with three terminals 9/16" apart and has two .140" diameter mounting holes, 1-15/16" centers. Bottom plate is 1/16" thick, top plate 3/64" thick. 5/8" wide x 2¾" long.**

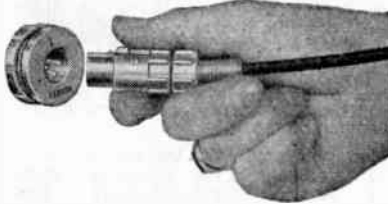
**List Price \$0.19 ea.**

# CANNON CONNECTORS

CANNON ELECTRIC DEVELOPMENT COMPANY • 3209 HUMBOLDT STREET, LOS ANGELES 31, CALIFORNIA



## TYPE XL FITTINGS



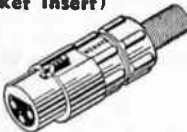
"XL-3-14N" Receptacle and "XL-3-11" Plug in engaging position. Compare small size of plug with hand.

The Cannon Electric Type "XL" Connector combines various features found in other Cannon types into a small fitting comparable only in size to the Type "X" for low level sound transmission circuits. Among the leading features are the following: (1) convenient latchlock device to hold connector tight. (2) lightweight. (3) polarizing means (4) compression gland with relief spring or integral clamp, if desired. (5) streamlined design. (6) tamped metal for insert retaining screw. (7) provision for special grounding contact and grounding to shell. Contacts are 15-amp. for No. 14 B&S stranded wire in 3 contact insert; 10-amp. in 4 contact insert. Shell is zinc or steel, with various finishes available, bright nickel being standard. Satin-chrome finish available on steel shells. Min. flashover voltage, 1500 (250 working voltage).

### ZINC SHELL TYPES

#### TYPE "XL-11" STRAIGHT CORD PLUG (Socket Insert)

Type XL-3-11 is equipped with latch device and has raised polarizing boss. No. 1 contact engages before Nos. 2 and 3, and may be used for grounding purposes, if desired.  $\frac{3}{8}$  cable accommodation. Overall dimensions: length, 2  $\frac{1}{8}$ , with relief spring, 2  $\frac{1}{2}$  approx.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.0992	XL-3-11	1.40
4	10-amp.	.0992	XL-4-11	1.95

#### TYPE "XL-12" STRAIGHT CORD PLUG (Pin Insert)

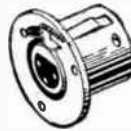
Type XL-12 plug has alignment rib in addition to polarizing groove. Cable accommodation is  $\frac{3}{8}$ . Insert is removable for soldering or inspection. Overall dimensions: length, 1 $\frac{1}{2}$ , with cable relief spring, 2 $\frac{1}{2}$ ; max. diameter  $\frac{3}{8}$ . Insert dia.  $\frac{5}{16}$ .



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.0792	XL-3-12	1.35
4	10-amp.	.0792	XL-4-12	1.80

#### TYPE "XL-13" RECEPTACLE (Socket Insert)

A wall mounting receptacle similar to XL-14 except that it has socket insert assembly and latch locking device. Overall Dimensions: flange diameter, 1 $\frac{1}{2}$ ; flange thickness  $\frac{3}{8}$ ; rear of flange to solder pot extension 1 $\frac{1}{2}$ ; dia. barrel,  $\frac{3}{8}$ ; three mounting holes drilled .136



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.132	XL-3-13	1.40
4	10-amp.	.132	XL-4-13	1.95

#### TYPE "XL-14" RECEPTACLE (Pin Insert)



This wall mounting receptacle has three mounting holes having .136 diameter. Overall dimensions: flange diameter, 1 $\frac{1}{2}$ ; width flange,  $\frac{3}{8}$ ; length behind flange to solder pot extension, 1 $\frac{1}{2}$ ; barrel diameter,  $\frac{3}{8}$ . Material zinc, bright nickel finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.0592	XL-3-14	1.10
4	10-amp.	.0592	XL-4-14	1.55

#### TYPE "XL-13N" RECEPTACLE (Socket Insert)

Similar to XL-14N except has socket insert assembly, with latchlock device, and polarizing boss on insert barrel. No. 1 contact engages before Nos. 2 and 3 and may be used for grounding circuit, if desired. Overall dimensions: flange and barrel and nut are identical to XL-14N, length from face of flange including solder pot extension, 1 $\frac{1}{2}$ .



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.2112	XL-3-13N	1.40
4	10-amp.	.2112	XL-4-13N	1.95

#### TYPE "XL-14N" RECEPTACLE (Pin Insert)



Designed to be mounted in a panel and has lock nut, accommodating up to  $\frac{1}{8}$  inch panel. Two fittings may be mounted on a single gang plate. Overall Dimensions: flange diameter, 1 $\frac{1}{2}$ ; barrel diameter, 1; width flange to barrel,  $\frac{3}{8}$ , with  $\frac{3}{8}$  max. solder pot extension; flange thickness,  $\frac{3}{8}$ .

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.2048	XL-3-14N	1.30
4	10-amp.	.2048	XL-4-14N	1.75

#### TYPE "XL" ADAPTER RECEPTACLES



XL-3-50	XL-3-50T	XL-3-50N
1.60 List Pr.	1.75 List Pr.	1.95
XL-4 2.20	XL-4 2.35	XL-4 2.85

#### SINGLE GANG WALL RECEPTACLES



##### Type XL-3-35 (Socket Insert)

Face plate similar to type used in P-35. Takes an XL-3-13N Receptacle. Wt. 0.3479.

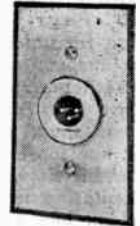
Cat. No.	List Price
XL-3-35	4.00
XL-4-35	4.40

#### TWO-GANG TYPES ALSO AVAILABLE

##### Type XL-3-36 (Pin Insert)

Takes an XL-3-14N Receptacle. Bright nickel finish.

Cat. No.	List Price
XL-3-36	4.05
XL-4-36	4.50



#### TWO GANG WALL RECEPTACLES

Model	List Price
XL-3-35-2G (2 socket inserts)	8.50
XL-4-35-2G (2 socket inserts)	9.60
XL-3-36-2G (2 pin inserts)	8.45
XL-4-36-2G (2 pin inserts)	9.30

#### TYPE XL-42 RECEPTACLE (Pin Insert)

The -42 Receptacle is similar to the X-42 shown under "X" Fittings, except that it has the XL type insert. For special mounting purposes.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.063	XL-3-42	1.35
4	10-amp.	0.063	XL-4-42	1.50

#### STEEL SHELL PLUGS INTEGRAL CLAMP TYPES

##### TYPE XL-3-11SC PLUG (Socket Insert)



The steel shell type is built for rugged service and has cable entry of  $\frac{1}{4}$ " min.,  $\frac{5}{16}$ " max.  $\frac{6}{32}$ " shorter overall shell than zinc type. Otherwise same construction, mating with regular XL receptacle.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.1333	XL-3-11SC	3.10
4	10-amp.	.1333	XL-4-11SC	3.65

##### TYPE XL-3-12SC PLUG (Pin Insert)

Corresponds to XL-3-12 except that shell is steel with integral clamp. For  $\frac{5}{16}$ " max. entry. Shell is  $\frac{7}{32}$ " shorter in overall length than corresponding zinc shell.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	.1250	XL-3-12SC	3.05
4	10-amp.	.1250	XL-4-12SC	3.65



# CANNON CONNECTORS

CANNON ELECTRIC DEVELOPMENT COMPANY • 3209 HUMBOLDT STREET, LOS ANGELES 31, CALIFORNIA

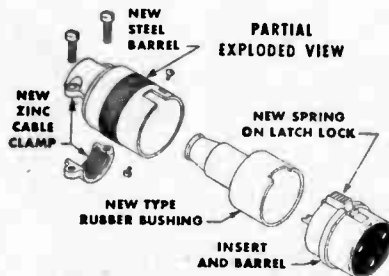


## TYPE P FITTINGS

### REVISED PRICES

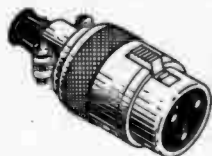
**CANNON "TYPE P" FITTINGS.** Universally used in sound and allied applications. "Type P" Fittings include a size and type for every requirement, with a high standard of quality. All 90° Plugs have split-shell construction for quick, easy access for wiring or inspection. Splash-proof but not weather-proof. Plug and receptacle dust caps are available. Laboratory tests show an average voltage-drop of not more than 10 millivolts, with current flowing at the rated capacity. Insulating material is black phenolic which has a 0.7% absorption in 24 hours of immersion in water and a dielectric strength of 550 volts per mil at 60 cycles. Two to 6 contact inserts accommodate No. 10 B&S stranded wire; 8 contact insert No. 14 wire.

New shell designs of the P-CG-11S and P-CG-12S, cord plugs, replace both old type shells of zinc and steel, and such improvements as shorter length, new rubber bushing, improved latch and spring, integral clamp. Shell material is steel, integral clamp zinc.



NEW TYPES WILL MATE WITH CORRESPONDING FITTINGS, SAME AS OLD DESIGN

### TYPE P-CG-11S CORD PLUG COMBINATION STEEL & ZINC (With Socket Insert)

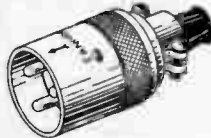


This new type plug with steel shell and integral zinc clamp is  $\frac{1}{8}$ " shorter than the old type and has an overall length of  $2\frac{1}{4}$ ". The new rubber bushing allows a  $\frac{1}{8}$ " D. cable entry, and on P4, P5, P6 and P8  $\frac{1}{2}$ " D. max. cable entry. Satin chrome finish.

Poles	Capacity	Wt.	Lbs.	Cat. No.	List Price
2	30-amp.	0.202		P2-CG-11S	\$5.60
3	30-amp.	0.202		P3-CG-11S	5.75
4	30-amp.	0.202		P4-CG-11S	6.05
5	30-amp.	0.206		P5-CG-11S	6.35
6	30-amp.	0.208		P6-CG-11S	6.55
8	15-amp.	0.208		P8-CG-11S	7.00

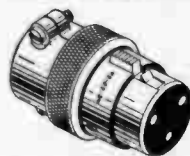
### TYPE P-CG-12S CORD PLUG COMBINATION STEEL & ZINC (With Pin Insert)

Similar construction and materials to the -11S, except for pin insert. New rubber bushing on P4 to P8 fittings is contained within the shell and lines the solder pot cavity. Same cable entry sizes as -11S. Satin chrome finish.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.163		P2-CG-12S	\$4.55
3	30-amp.	0.159		P3-CG-12S	4.70
4	30-amp.	0.159		P4-CG-12S	4.80
5	30-amp.	0.163		P5-CG-12S	4.90
6	30-amp.	0.167		P6-CG-12S	5.15
8	15-amp.	0.163		P8-CG-12S	5.45

### TYPE "P-23" STRAIGHT CORD PLUG (With Socket Insert), HEAVY DUTY



Shell is die-cast zinc for severe service, but employing all features such as the latch type locking device which is standard on "Type P." It has integral clamp for  $\frac{3}{8}$ " cable. Also made for  $\frac{1}{2}$ " &  $\frac{5}{8}$ " cable if specified. Satin chrome finish.

Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.166		P2-23	\$8.10
3	30-amp.	0.170		P3-23	8.35
4	30-amp.	0.174		P4-23	8.80
5	30-amp.	0.178		P5-23	9.20
6	30-amp.	0.182		P6-23	9.45
8	15-amp.	0.178		P8-23	10.05

### TYPE "P-24" STRAIGHT CORD PLUG (With Pin Insert), HEAVY DUTY

Corresponds with "Type P-23" Plug (Socket Insert). Built for hard service. The skirt is of steel, body die-cast zinc. Has Integral Clamp, for  $\frac{3}{8}$ ",  $\frac{5}{8}$ " or  $\frac{1}{2}$ " cable, if specified. Satin chrome finish.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.170		P2-24	\$8.10
3	30-amp.	0.173		P3-24	8.35
4	30-amp.	0.176		P4-24	8.50
5	30-amp.	0.179		P5-24	8.70
6	30-amp.	0.182		P6-24	9.05
8	15-amp.	0.179		P8-24	9.45

### TYPE "P-CG-15" 90° CORD PLUG (With Socket Insert)



Has Split Shell and all other "Type P" features found in "Type P-15, 90° Plug" except cable connection, which is an Integral Clamp for  $\frac{1}{2}$ " or smaller cable. Made of cast aluminum alloy, finished in tin plate. New, heavier clamp.

Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Price
2	30-amp.	0.220		P2-CG-15	\$6.30
3	30-amp.	0.224		P3-CG-15	6.50
4	30-amp.	0.228		P4-CG-15	6.80
5	30-amp.	0.232		P5-CG-15	7.10
6	30-amp.	0.236		P6-CG-15	7.30
8	15-amp.	0.232		P8-CG-15	7.70

### TYPE "P-CG-16" 90° CORD PLUG (With Pin Insert)

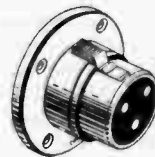
Corresponds with Type P-CG-15 90° Plug. (Socket Insert), having Integral Clamp for  $\frac{1}{2}$ " or smaller cable. Barrel is of steel and shell of cast aluminum alloy, tin plate finish. Removable cap for easy access to contacts for wiring or inspection. New heavier clamp.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.195		P2-CG-16	\$5.85
3	30-amp.	0.198		P3-CG-16	5.95
4	30-amp.	0.201		P4-CG-16	6.05
5	30-amp.	0.204		P5-CG-16	6.20
6	30-amp.	0.207		P6-CG-16	6.45
8	15-amp.	0.204		P8-CG-16	6.75

### TYPE "P-17" PANEL RECEPTACLE (With Socket Insert)

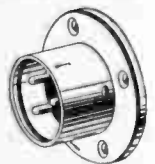
Surface Mounting  
P-17 has Latch Locking Device and all other "Type P" features. Made of die-cast zinc. Satin chrome finish. Flange is 2" in diameter, drilled and countersunk at four points 90° apart on  $\frac{1}{4}$ " radius for four #4-40 oval head M.S. Body extends 1" in front of  $\frac{1}{8}$ " mounting flange.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.125		P2-17	\$7.00
3	30-amp.	0.129		P3-17	7.25
4	30-amp.	0.133		P4-17	7.65
5	30-amp.	0.137		P5-17	8.10
6	30-amp.	0.141		P6-17	8.35
8	15-amp.	0.137		P8-17	8.95

### TYPE "P-18" PANEL RECEPTACLE (with Pin Insert) Surface Mounting

Corresponds to "Type P-17", Panel Receptacle. Shell is made of brass, satin chrome finish. Flange is 2" in diameter, drilled and countersunk at four points on  $\frac{1}{4}$ " radius for four #4-40 oval head machine screws.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.156		P2-18	\$3.75
3	30-amp.	0.159		P3-18	3.95
4	30-amp.	0.162		P4-18	4.10
5	30-amp.	0.165		P5-18	4.25
6	30-amp.	0.168		P6-18	4.60
8	15-amp.	0.165		P8-18	5.05

### TYPE "P-13" PANEL RECEPTACLE (with Socket Insert) Flush Mounting

Has Latch Locking Device which operates from front of panel. Made of die-cast zinc, satin chrome finish. Flange is 2" in diameter and drilled and countersunk at four points on  $\frac{1}{4}$ " radius for four #4-40 oval head machine screws.



Contacts	Capacity	Wt.	Lbs.	Cat. No.	List Pr.
2	30-amp.	0.202		P2-13	\$4.70
3	30-amp.	0.206		P3-13	4.85
4	30-amp.	0.210		P4-13	5.15
5	30-amp.	0.214		P5-13	5.45
6	30-amp.	0.218		P6-13	5.65
8	15-amp.	0.214		P8-13	6.05

# CANNON CONNECTORS

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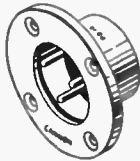


## TYPE P FITTINGS

REVISED PRICES—CONTINUED

### TYPE "P-14" RECEPTACLE (Pin Insert), FLUSH MOUNTING

Flange is 2" in diameter, drilled with four .120" diameter holes to take four #4-40 oval-head mounting screws, arranged 90° apart on a radius of 1/8". Shell is die-cast zinc, satin chrome finish.



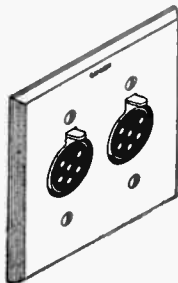
Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.104	P2-14	\$2.45
3	30-amp.	0.107	P3-14	2.55
4	30-amp.	0.110	P4-14	2.70
5	30-amp.	0.113	P5-14	2.80
6	30-amp.	0.116	P6-14	3.05
8	15-amp.	0.113	P8-14	3.35



### TYPE "P-35" SINGLE GANG WALL RECEPTACLE (With Socket Insert)

Furnished with brackets for standard switch box. Shell is die-cast zinc, satin chrome finish. Plate is 4 1/2" high and 2 3/4" wide. Latch Locking Device operates from front of panel.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.341	P2-35	\$8.15
3	30-amp.	0.345	P3-35	8.30
4	30-amp.	0.349	P4-35	8.60
5	30-amp.	0.353	P5-35	8.90
6	30-amp.	0.357	P6-35	9.10
8	15-amp.	0.353	P8-35	9.50



### TYPE "P-35-2G" TWO-GANG WALL RECEPTACLE (With Socket Inserts)

Furnished with brackets for standard switch box. Plate is 4 1/2" high and 4 3/4" wide. Both receptacles have Latch Locking Device, operated from front of panel. Shell is die-cast zinc, satin chrome finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.448	P2-35-2G	\$16.35
3	30-amp.	0.456	P3-35-2G	16.85
4	30-amp.	0.464	P4-35-2G	17.70
5	30-amp.	0.472	P5-35-2G	18.55
6	30-amp.	0.480	P6-35-2G	19.05
8	15-amp.	0.472	P8-35-2G	20.25

### MINIMUM FLASHOVER VOLTAGES ON P INSERTS

P-8 (socket, #4 to shell) 1050V  
P-2 (socket, #1 to shell) 1100V  
P-3 (socket, #1 and #3 to shell) 1100V

(All others more than 1100 volts.)

For complete list, see Type "AP" Bulletin or Third Revised Edition "P & O" Bulletin

### TYPE "P-36" SINGLE GANG WALL RECEPTACLE

(With Pin Insert)

Plate is 4 1/2" high and 2 3/4" wide. Furnished with brackets for standard switch box. Made of die-cast zinc, satin chrome finish.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.277	P2-36	\$6.30
3	30-amp.	0.280	P3-36	6.45
4	30-amp.	0.283	P4-36	6.55
5	30-amp.	0.286	P5-36	6.70
6	30-amp.	0.289	P6-36	6.90
8	15-amp.	0.286	P8-36	7.20

### TYPE "P-36-2G" TWO-GANG WALL RECEPTACLE (With Pin Insert)

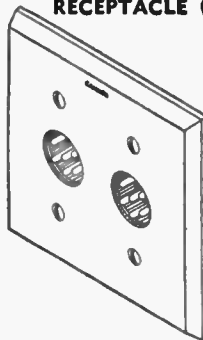
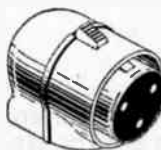


Plate is 4 1/2" high and 4 3/4" wide. Drilled to take four #6-32 oval-head mounting screws. Furnished with brackets for standard switch box. Made of die-cast zinc, satin chrome finish.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.554	P2-36-2G	\$12.95
3	30-amp.	0.563	P3-36-2G	13.30
4	30-amp.	0.572	P4-36-2G	13.60
5	30-amp.	0.579	P5-36-2G	13.95
6	30-amp.	0.588	P6-36-2G	14.65
8	15-amp.	0.579	P8-36-2G	15.50

### TYPE "P-41" 90° MICROPHONE OR PANEL RECEPTACLE

(With Socket Insert)



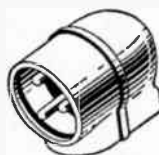
Can be mounted in equipment or instrument panel. Equipped with Latch Locking Device. Cap is removable for easy wiring. Shell is die-cast zinc, finished in black wrinkle enamel.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.249	P2-41	\$10.50
3	30-amp.	0.253	P3-41	10.75
4	30-amp.	0.257	P4-41	11.15
5	30-amp.	0.261	P5-41	11.60
6	30-amp.	0.265	P6-41	11.85
8	15-amp.	0.261	P8-41	12.45

### TYPE "P-42" 90° MICROPHONE OR PANEL RECEPTACLE

(With Pin Insert)

For mounting on equipment or instrument panel. Cap is removable for easy wiring. Shell is made of die-cast zinc with black wrinkle enamel finish.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
2	30-amp.	0.176	P2-42	\$7.65
3	30-amp.	0.179	P3-42	7.85
4	30-amp.	0.182	P4-42	8.00
5	30-amp.	0.185	P5-42	8.20
6	30-amp.	0.188	P6-42	8.50
8	15-amp.	0.185	P8-42	8.95

## ACCESSORY ITEMS

### DUST CAPS

Fits all "Type P" fittings with pin inserts. Made of brass, cadmium plated, with nickel silver bead chain.



Lbs.	Cat. No.	List
0.081	PPC	\$2.55
0.082	PCI*	3.00

\*Type PCI is insulated inside for application where contacts are "hot."

### TYPE PRC DUST CAP

Fits all "Type P" fittings with socket inserts. Made of brass, cadmium plated with nickel silver bead chain.



Lbs.	Cat. No.	List
0.095	PRC	\$2.15

## REPLACEMENT ITEMS

A number of Type P and Type O Connectors formerly catalogued have been omitted from the list. These include various Special Items. It is the policy of the company at the present time to list such items as obsolete or replacement fittings, which are available only upon special request. If, however, they are required for replacement purposes, write for Type P & O Replacement Page for listing and catalog number.

Net List

### TYPE "PCG" CLAMP GLAND NUT



Made of die-cast zinc, cadmium plated. Complete with gasket.

ONE-THIRD ACTUAL SIZE

Wt. Lbs.	Cat. No.	List Price
0.037	PCG	\$1.30

### TYPE "P" GLAND GASKET

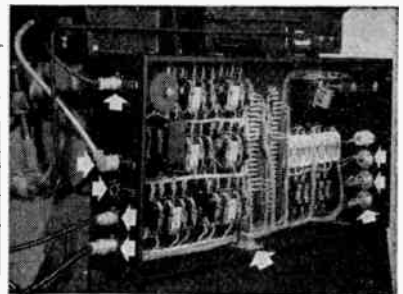


As used in Straight Glands and Clamp Glands. Made of soft white rubber.

ONE-THIRD ACTUAL SIZE

Cat. No.	List Price
P Gasket	\$ .20

## APPLICATION



Type "P" CONNECTORS on Mitchell Camera Background Projector

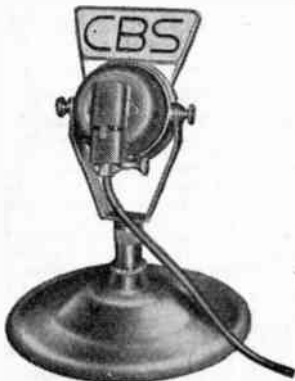
# CANNON CONNECTORS

CANNON ELECTRIC DEVELOPMENT COMPANY • 3209 HUMBOLDT STREET, LOS ANGELES 31, CALIFORNIA



## TYPE O FITTINGS

**CANNON "TYPE O" PLUGS AND RECEPTACLES.** This series consists of a line of 3-contact oval-shaped plugs and receptacles, equipped with Latch Locking Device. Contacts are silver-plated, full-floating, non-twisting, carry 30-amp. capacity. Solder terminals are tinned for ease of wiring. 30-amp. contacts accommodate No. 10 B&S stranded wire.



### TYPE "03-42" MICROPHONE OR PANEL RECEPTACLE (With Pin Insert)

Has flat base, with two lugs for mounting with #4-40 oval-head screws. Made of die-cast zinc, and cadmium plated.



Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.271 03-42 \$7.85

### TYPE "03-41" 90° MICROPHONE OR PANEL RECEPTACLE (Socket Insert)



Flat base is flanged and is attached to microphone or panel by means of two #4-40 oval-head mounting screws. Made of die-cast zinc, cad. plated.

Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.274 03-41 \$7.85

### TYPE "03-11" STRAIGHT CORD PLUG (With Socket Insert)



Has Integral Clamp for  $\frac{1}{8}$ " or smaller cable. Made of die-cast zinc, cadmium plated.

Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.113 03-11 \$5.55

### TYPE "03-12" STRAIGHT CORD PLUG (With Pin Insert)

Corresponds with No. 03-11 "Type O" Straight Cord Plug (Socket Insert). Has integral cable clamp, for  $\frac{1}{8}$ " or smaller cable. Made of die-cast zinc, cadmium plated.



Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.104 03-12 \$5.55

## TYPE "03-13" FLUSH WALL RECEPTACLE (With Socket Insert)



Flange is 2" in diameter, drilled with four holes to take #4-40 oval-head mounting screws, 90° apart on a radius of  $\frac{1}{8}$ ". Made of die-cast zinc, cadmium plated. Latch Locking Device is operated from panel front.

Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.148 03-13 \$6.50

## TYPE "03-14" FLUSH WALL RECEPTACLE (With Pin Insert)



The flange is 2" in diameter, drilled with four holes to take #4-40 oval-head mounting screws, 90° apart, on a radius of  $\frac{1}{8}$ ". Made of die-cast zinc, cadmium plated.

Contacts Capacity Wt. Lbs. Cot. No. List Pr.  
3 30-amp. 0.107 03-14 \$6.50

## TYPE "O" REPLACEMENT FITTINGS

(Discounts on replacement fittings apply to these items.)



ONE-FOURTH ACTUAL SIZE

03-35



ONE-FOURTH ACTUAL SIZE

03-36

## TYPE "O" CONNECTORS ARE USED ON STANDARD RADIO BROADCAST MICROPHONES



## TYPE TQ FITTINGS

**CANNON TYPE "TQ" COAXIAL FITTINGS.** Type "TQ" Coaxial Fittings provide continuous shielding with constant impedance. Each fitting contains 1 standard Cannon style silver-plated contact, rated at 10-amp. and accommodating #16 stranded or #14 solid, or smaller B&S stranded wire. Solder pots are tinned for ease in wiring. Insulation is ceramic.

### CANNON TYPE "TQ" COAXIAL CORD PLUG (With Socket Insert) For Continuous Shielding



ONE-HALF ACTUAL SIZE

A tapered skirt is provided on this Plug, to which the shielding is easily soldered. Accommodates  $\frac{1}{8}$ " cable, but can be supplied for  $\frac{3}{16}$ " cable if specified with order. Body is brass, silver plated.

Contacts Capacity Wt. Lbs. Cot. No. Net Pr.  
1 10-amp. 0.106 TQ-1-12 \$3.05

### TYPE "TQ13BC" FLUSH RECEPTACLE (With Pin Insert)

#### For Mounting Behind Panel

Same construction as No. TQ-1-13C, except that the flange is mounted on back of panel. Body is brass, zinc plated.

Contacts Capacity Wt. Lbs. Cot. No. Net Pr.  
1 10-amp. 0.039 TQ-1-13BC \$3.05



ONE-HALF ACTUAL SIZE

### TYPE "TQ-13B" RECEPTACLE For Continuous Shielding

Designed for mounting behind panel. Accommodates  $\frac{1}{8}$ " cable. Body is brass, zinc plated.

Contacts Capacity Wt. Lbs. Cot. No. Net Pr.  
1 10-amp. 0.057 TQ-1-13B \$3.05



ONE-HALF ACTUAL SIZE

### TYPE "TQ-13" RECEPTACLE (With Pin Insert)

#### For Continuous Shielding

Provided with a tapered skirt to which the shielding is easily soldered. Also has a removable solder pot shield, which snaps into place. Ceramic insulation is used in all Type "TQ" Connectors, silver plated. Accommodates  $\frac{1}{8}$ " cable, but can be supplied for  $\frac{3}{16}$ " cable if specified with order. Two holes—.120 in diameter,  $\frac{1}{8}$ " apart.

Contacts Capacity Wt. Lbs. Cot. No. Net Pr.  
1 10-amp. .043 TQ-1-13 \$3.05



ONE-HALF ACTUAL SIZE

### TYPE "TQ-13C" RECEPTACLE (With Pin Insert)

Similar to TQ-1-13, except that it is not provided with solder pot shield and is not designed for continuous shielding. Uses Ceramic insulation. For mounting on front of panel. Body is brass, silver plated. Two holes—.120 in diameter,  $\frac{1}{8}$ " apart for mounting.

Contacts Capacity Wt. Lbs. Cot. No. Net Pr.  
1 10-amp. 0.037 TQ-1-13C \$3.05



ONE-HALF ACTUAL SIZE

# CANNON CONNECTORS

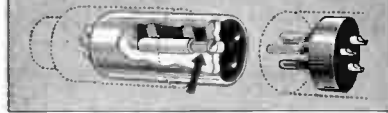
CANNON ELECTRIC DEVELOPMENT COMPANY • 3209 HUMBOLDT STREET, LOS ANGELES 31, CALIFORNIA



## TYPE X FITTINGS

**CANNON "TYPE X" PLUGS AND RECEPTACLES**—The "Type X" Series of small connectors offers inexpensive fittings of reliable quality for sound service, radio, public address systems and geophysical research. In addition to compactness, many exclusive Cannon features are embodied in this series, such as full floating contacts in all socket inserts. Solder pot cable connections are easily accessible. Cable glands are removable. Contacts are so positive that no latching device is needed for ordinary uses.

The arrow shows spring clip on full-floating socket contact which gives a positive pressure fit connection.



### TYPE "X-11" CORD PLUG (With Socket Insert)

Sturdily built for dependable service. Light in weight. Shell is die-cast zinc, nickel finish. Will take  $\frac{1}{8}$ " to  $\frac{3}{8}$ " cable. Used in conjunction with the following: X-14 Wall Receptacle, X-12 Straight Cord Plug, and X-42 Microphone Receptacle X-44L Receptacle.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	X-1-11	\$2.10
3	15-amp.	0.083	X-3-11	2.10
4	{3-10-amp.} {1-15-amp.}	0.085	X-4-11	3.85

### TYPE "X-12" CORD PLUG (With Pin Insert)

For use in conjunction with X-11 Straight Cord Plug (Socket Insert) or X-13 Wall Receptacle (Socket Insert). Shell is die-cast zinc, nickel finish. Will take  $\frac{1}{8}$ " to  $\frac{3}{8}$ " cable.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.061	X-1-12	\$1.85
3	15-amp.	0.063	X-3-12	1.50
4	{3-10-amp.} {1-15-amp.}	0.065	X-4-12	2.70

### TYPE "X-13" WALL RECEPTACLE (With Socket Insert)



Body fits in  $\frac{3}{8}$ " hole and extends  $\frac{1}{8}$ " behind flange. Flange is  $1\frac{1}{2}$ " in diameter and drilled for three #4-40 oval-head screws on  $\frac{1}{4}$ " radius 120° apart. Shell is die-cast zinc, nickel finish. To be used in conjunction with the following X-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	X-1-13	\$2.10
3	15-amp.	0.083	X-3-13	2.10
4	{3-10-amp.} {1-15-amp.}	0.085	X-4-13	3.85

### TYPE "X-14" WALL RECEPTACLE (With Pin Insert)

Body fits in  $\frac{3}{8}$ " hole and extends  $\frac{3}{8}$ " behind the flange, which is  $1\frac{1}{2}$ " in diameter and drilled for three #4-40 oval-head screws on  $\frac{1}{4}$ " radius, 120° apart. Shell is zinc, nickel plated finish. Used in conjunction with straight cord plug (Socket Insert) X-11. Solder pots extend  $\frac{1}{4}$ " beyond rear of body.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.040	X-1-14	\$1.50
3	15-amp.	0.042	X-3-14	1.50
4	{3-10-amp.} {1-15-amp.}	0.044	X-4-14	2.70

### TYPE "X-42" MICROPHONE RECEPTACLE (With Pin Insert)

Has all the features of "Type X" Straight Cord Plugs and Wall Receptacles but it is mounted on a flat base. Shell is die-cast zinc, nickel finish. Use with X-11 straight Cord Plug (Socket Insert) Mounting holes are .144" in diameter and 1" apart.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.063	X-3-42	\$1.50

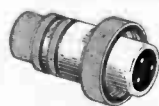


(Type X-3-11 Plug and X-3-42 Receptacle)

## TYPE XK FITTINGS

**CANNON "TYPE XK" PLUGS AND RECEPTACLES**—A quality line of Connectors, similar in design and construction to the "Type X" Series, but equipped with the fast-acting, sturdy Acme Threaded Coupling Ring and, therefore, ideal for use on equipment which is subjected to considerable vibration and tension on cables, such as on sound trucks and other portable units.

### TYPE "XK-11" STRAIGHT CORD PLUG (With Socket Insert)



Shell is of die-cast zinc, cad. plated finish. Equipped with quick-acting coupling ring. Solder pot connections are easily accessible. Takes  $\frac{1}{8}$ " to  $\frac{3}{8}$ " cable. Built for long, dependable service. Used with XK-12, XK-14.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	XK-1-11	\$5.00
3	15-amp.	0.083	XK-3-11	5.00
4	{3-10-amp.} {1-15-amp.}	0.085	XK-4-11	7.10

### TYPE "XK-12" STRAIGHT CORD PLUG (With Pin Insert)

For use in conjunction with Straight Cord Plug (Socket Insert) or Wall Receptacle (Socket Insert) with Coupling Ring. Provided with Shell is made of die-cast zinc, cad. plated finish. Takes  $\frac{1}{8}$ " to  $\frac{3}{8}$ " cable.

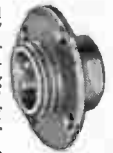


Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.081	XK-1-12	\$2.85
3	15-amp.	0.083	XK-3-12	2.85
4	{3-10-amp.} {1-15-amp.}	0.085	XK-4-12	4.30

### TYPE "XK-13" WALL RECEPTACLE (With Socket Insert) (For replacement only)

### TYPE "XK-14" WALL RECEPTACLE (With pin insert)

Body fits in a  $\frac{3}{8}$ " hole and extends  $\frac{3}{8}$ " behind a  $\frac{1}{8}$ " flange. Flange is  $1\frac{1}{2}$ " in diameter, drilled for four #4-40 oval-head mounting screws on a  $\frac{1}{4}$ " radius, 90° apart. Shell is made of brass, nickel finish. Solder pots extend  $\frac{1}{2}$ " beyond body. Has external acme thread on shell and is used in conjunction with straight cord plug XK-11.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.045	XK-1-14	\$2.85
3	15-amp.	0.047	XK-3-14	2.85
4	{3-10-amp.} {1-15-amp.}	0.049	XK-4-14	4.30

### TYPE "XK-13L" WALL RECEPTACLE (With Socket Insert)

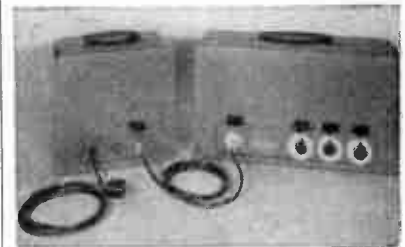
Body fits in  $1\frac{1}{4}$ " hole and extends  $1\frac{1}{8}$ " behind flange. Flange is  $1\frac{1}{2}$ " in diameter and drilled for four #4-40 oval-head mounting screws on a  $\frac{1}{4}$ " radius, 90° apart. Shell is made of brass, nickel finish. Solder pots on contacts extend  $\frac{1}{2}$ " beyond body.



Use in conjunction with a straight cord plug (Pin Insert) XK-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
1	15-amp.	0.144	XK-1-13L	\$5.35
3	15-amp.	0.146	XK-3-13L	5.50
4	{3-10-amp.} {1-15-amp.}	0.148	XK-4-13L	6.90

## APPLICATION



Raytheon's 3-channel Remote Amplifier and power unit use two types of Cannon Plugs: "X" and "P". Three receptacles on amplifier at right are Type P3-13.

# CANNON CONNECTORS



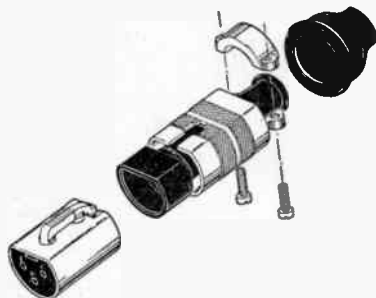
CANNON ELECTRIC DEVELOPMENT COMPANY • 3709 HUMBOLDT STREET, LOS ANGELES 31, CALIFORNIA

## UA FITTINGS

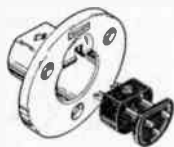
The UA Series of audio connectors designed in cooperation with the RMA Committee has all the features of Type P, O and XL and, in addition, the following: (1) gold-plated contacts for long life and "no noise" (2) double protection rubber relief collar and rubber bushings (3) flat-top polarization for finger-touch action (4) stronger and better latch lock (5) steel plug shells and insert barrel (6) spring-action insert removal — no screws.

Insulators are high dielectric, molded general-purpose Durez, 15-amp. contacts with 1500 V. minimum flash-over; for No. 14 B&S stranded wire. Cable entry is 1/2". Write for special UA Bulletin for complete details.

### SEMI-EXPLODED VIEW UA-11

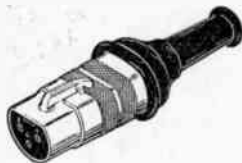


### SEMI-EXPLODED VIEW UA-14



showing rubber cushion that fits over pin contacts to avoid shocks, provide protection from moisture, improve insulation factors.

### TYPE UA-3-11 PLUG (Socket Insert)

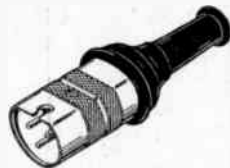


The UA-11 plug is approximately 3/4" long, including rubber bushing: 1 3/16" maximum width and 1 1/32" thickness. Steel shell and barrel. Mates with UA-12, UA-32 and UA-42.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.15	UA-3-11	4.85

### TYPE UA-3-12 PLUG (Pin Insert)

The UA-12 plug is approximately 3/4" long, including rubber relief collar. Steel shell. Mates with UA-3-11, UA-3-13, UA-3-31.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.11	UA-3-12	4.00

### TYPE UA-3-13 RECEPTACLE (Socket Insert)



The UA-13 Receptacle has a round flange compared to the rectangular flange of the UA-31. Three mounting holes are provided, .120 dia. countersunk for #4 flat head machine screws. Mates with UA-3-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.14	UA-3-13	3.75

### TYPE UA-3-14 RECEPTACLE (Pin Insert)

The UA-14 Receptacle has a similar flange construction as the UA-13. Barrel extends 23/32" behind flange with 15/64" solder pot extension. A 63/64" dia. (1") hole is required to mount. Mates with UA-3-11.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.08	UA-3-14	2.25

### TYPE UA-3-31 RECEPTACLE (Socket Insert)



The UA-31 Receptacle has a rectangular flange construction, and extends 1 3/32" behind flange plus 3/16" max. solder pot extension and requires a 1" hole for 63/64" dia. barrel. Mates with UA-3-12.

Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.13	UA-3-31	3.75

### TYPE UA-3-32 RECEPTACLE (Pin Insert)

The UA-3-32 Receptacle is similar to UA-31. Barrel extends 25/32" plus 15/64" max. solder pot extension behind flange, and requires a 1" hole for 63/64" dia. barrel. Mates with XL-3-11.



Contacts	Capacity	Wt. Lbs.	Cat. No.	List Pr.
3	15-amp.	0.07	UA-3-32	2.25

### TYPE UA-3-42 RECEPTACLE (Pin Insert)

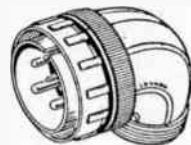
This receptacle for special mounting purposes was not in production at the time of issuance of this page. Contact factory or representatives for latest data and delivery.



## OTHER TYPE SERIES

### TYPE AN

The greatest number of inserts, variety of amperages and voltages. More than 200 layouts.



### NEW TYPE AF

Combines vibration resistance, radio shielding, moisture-proofing and other engineering and design features.



### TYPE K & RK

Similar to "AN" but an exclusive Cannon product, more rugged than type "AN". 190 inserts-layouts.



### TYPE DP

Rack and Panel type connectors with standard contacts and coaxials. DPD shown at left.



and D.C. SOLENOIDS, BATTERY PLUGS, LABORATORY AND SWITCHBOARD CONNECTORS

## "300" SERIES PLUGS AND SOCKETS

### General Specifications

2 Contacts to 33 Contacts. All plugs and sockets are polarized.  
 2 Contact Plugs and Sockets are round, others rectangular.  
 Plugs of one size cannot fit into sockets of another size.  
 Phosphor bronze "knife-switch" type socket contacts engage both sides of flat plug contacts—double contact area.  
 Molded Bakelite insulation.  
 Formed metal caps. Formed fibre linings in caps.  
 Small size, with good separation between contacts.  
 Plug or socket for panel mounting.  
 Plug or socket with cap.  
 Simple, fool-proof assembly.  
 Finish on caps—Black Crystal.  
 Plug prongs— $\frac{1}{8}$ " wide by  $\frac{1}{16}$ " thick.  
 We suggest using the 300 series in circuits not exceeding 45 Volts and 5 Amps, although circuit characteristics may permit higher ratings.]

#### Plug with Angle Brackets



No. Contacts	Ea.
P-302-AB (2)	\$ .23
P-303-AB (3)	.. 28
P-304-AB (4)	.. 32
P-306-AB (6)	.. 39
P-308-AB (8)	.. 45
P-310-AB (10)	.. 52
P-312-AB (12)	.. 58

#### Socket with Angle Brackets



No. Contacts	Ea.
S-302-AB (2)	\$ .25
S-303-AB (3)	.. 30
S-304-AB (4)	.. 34
S-306-AB (6)	.. 42
S-308-AB (8)	.. 52
S-310-AB (10)	.. 62
S-312-AB (12)	.. 72

#### Plug with Flush Plate



No. Contacts	Ea.
P-302-FP (2)	\$ .40
P-303-FP (3)	.. 44
P-304-FP (4)	.. 48
P-306-FP (6)	.. 54
P-308-FP (8)	.. 61
P-310-FP (10)	.. 67
P-312-FP (12)	.. 74

#### Socket with Flush Plate



No. Contacts	Ea.
S-302-FP (2)	\$ .41
S-303-FP (3)	.. 45
S-304-FP (4)	.. 49
S-306-FP (6)	.. 57
S-308-FP (8)	.. 67
S-310-FP (10)	.. 77
S-312-FP (12)	.. 87

#### Plug with Recessed Plate



No. Contacts	Ea.
P-302-RP (2)	\$ .46
P-303-RP (3)	.. 51
P-304-RP (4)	.. 55
P-306-RP (6)	.. 63
P-308-RP (8)	.. 73
P-310-RP (10)	.. 83
P-312-RP (12)	.. 92

#### Socket with Recessed Plate



No. Contacts	Ea.
S-302-RP (2)	\$ .48
S-303-RP (3)	.. 53
S-304-RP (4)	.. 57
S-306-RP (6)	.. 66
S-308-RP (8)	.. 80
S-310-RP (10)	.. 92
S-312-RP (12)	.. 1.05

#### Plug, Flared Hole in Cap and with Latches



No. Contacts	Ea.
P-302-FHT (2)	\$ .39
P-303-FHT (3)	.. 43
P-304-FHT (4)	.. 47
P-306-FHT (6)	.. 54
P-308-FHT (8)	.. 61
P-310-FHT (10)	.. 68
P-312-FHT (12)	.. 76

#### Socket, Flared Hole in Cap



No. Contacts	Ea.
S-302-FHT (2)	\$ .40
S-303-FHT (3)	.. 44
S-304-FHT (4)	.. 48
S-306-FHT (6)	.. 57
S-308-FHT (8)	.. 68
S-310-FHT (10)	.. 79
S-312-FHT (12)	.. 90

#### Plug, Flared Hole in Cap and with Latches



No. Contacts	Ea.
P-302-FHT-L (2)	\$ .53
P-303-FHT-L (3)	.. 57
P-304-FHT-L (4)	.. 62
P-306-FHT-L (6)	.. 70
P-308-FHT-L (8)	.. 79
P-310-FHT-L (10)	.. 88
P-312-FHT-L (12)	.. 98

#### Socket, Flared Hole in Cap and with Keepers



No. Contacts	Ea.
S-302-FHT-K (2)	\$ .54
S-303-FHT-K (3)	.. 58
S-304-FHT-K (4)	.. 63
S-306-FHT-K (6)	.. 72
S-308-FHT-K (8)	.. 83
S-310-FHT-K (10)	.. 94
S-312-FHT-K (12)	.. 1.05

#### Plug, Cable Clamp in Cap



No. Contacts	Ea.
P-302-CCT (2)	\$ .53
P-303-CCT (3)	.. 57
P-304-CCT (4)	.. 62
P-306-CCT (6)	.. 68
P-308-CCT (8)	.. 75
P-310-CCT (10)	.. 84
P-312-CCT (12)	.. 92

#### Socket, Cable Clamp in Cap



No. Contacts	Ea.
S-302-CCT (2)	\$ .54
S-303-CCT (3)	.. 58
S-304-CCT (4)	.. 63
S-306-CCT (6)	.. 72
S-308-CCT (8)	.. 83
S-310-CCT (10)	.. 94
S-312-CCT (12)	.. 1.05

#### Plug, Cable Clamp in Cap and with Latches



No. Contacts	Ea.
P-302-CCT-L (2)	\$ .67
P-303-CCT-L (3)	.. 71
P-304-CCT-L (4)	.. 76
P-306-CCT-L (6)	.. 83
P-308-CCT-L (8)	.. 89
P-310-CCT-L (10)	.. 98
P-312-CCT-L (12)	.. 1.07

#### Socket, Cable Clamp in Cap and with Keepers



No. Contacts	Ea.
S-302-CCT-K (2)	\$ .68
S-303-CCT-K (3)	.. 73
S-304-CCT-K (4)	.. 78
S-306-CCT-K (6)	.. 86
S-308-CCT-K (8)	.. 97
S-310-CCT-K (10)	.. 1.08
S-312-CCT-K (12)	.. 1.19

#### Plug with Angle Brackets



No. Contacts	Ea.
P-315-AB (15)	\$ .76
P-318-AB (18)	.. 95
P-321-AB (21)	.. 1.20
P-324-AB (24)	.. 1.45
P-327-AB (27)	.. 1.71
P-330-AB (30)	.. 1.96
P-333-AB (33)	.. 2.21

#### Socket with Angle Brackets



No. Contacts	Ea.
S-315-AB (15)	\$ .89
S-318-AB (18)	.. 1.07
S-321-AB (21)	.. 1.33
S-324-AB (24)	.. 1.58
S-327-AB (27)	.. 1.84
S-330-AB (30)	.. 2.09
S-333-AB (33)	.. 2.34

#### Plug with End Brackets



No. Contacts	Ea.
P-315-EB (15)	\$ .76
P-318-EB (18)	.. 95
P-321-EB (21)	.. 1.20
P-324-EB (24)	.. 1.45
P-327-EB (27)	.. 1.71
P-330-EB (30)	.. 1.96
P-333-EB (33)	.. 2.21

#### Sockets with End Brackets



No. Contacts	Ea.
S-315-EB (15)	\$ .89
S-318-EB (18)	.. 1.07
S-321-EB (21)	.. 1.33
S-324-EB (24)	.. 1.58
S-327-EB (27)	.. 1.84
S-330-EB (30)	.. 2.09
S-333-EB (33)	.. 2.34

#### Plug with Shallow Brackets



No. Contacts	Ea.
P-315-SB (15)	\$1.14
P-318-SB (18)	.. 1.40
P-321-SB (21)	.. 1.65
P-324-SB (24)	.. 1.96
P-327-SB (27)	.. 2.21
P-330-SB (30)	.. 2.53
P-333-SB (33)	.. 2.78

#### Sockets with Shallow Brackets



No. Contacts	Ea.
S-315-SB (15)	\$1.28
S-318-SB (18)	.. 1.53
S-321-SB (21)	.. 1.78
S-324-SB (24)	.. 2.09
S-327-SB (27)	.. 2.34
S-330-SB (30)	.. 2.66
S-333-SB (33)	.. 2.92

#### Plug with Deep Bracket



No. Contacts	Ea.
P-315-DB (15)	\$1.14
P-318-DB (18)	.. 1.40
P-321-DB (21)	.. 1.65
P-324-DB (24)	.. 1.96
P-327-DB (27)	.. 2.21
P-330-DB (30)	.. 2.53
P-333-DB (33)	.. 2.78

#### Socket with Deep Bracket



No. Contacts	Ea.
S-315-DB (15)	\$1.28
S-318-DB (18)	.. 1.53
S-321-DB (21)	.. 1.78
S-324-DB (24)	.. 2.09
S-327-DB (27)	.. 2.34
S-330-DB (30)	.. 2.66
S-333-DB (33)	.. 2.92

#### Plug with Flared Hole in Top of Cap



No. Contacts	Ea.
P-315-FHT (15)	\$1.01
P-318-FHT (18)	.. 1.27
P-321-FHT (21)	.. 1.52
P-324-FHT (24)	.. 1.84
P-327-FHT (27)	.. 2.09
P-330-FHT (30)	.. 2.41
P-333-FHT (33)	.. 2.66

#### Socket, Flared Hole in Top of Cap



No. Contacts	Ea.
S-315-FHT (15)	\$1.14
S-318-FHT (18)	.. 1.40
S-321-FHT (21)	.. 1.65
S-324-FHT (24)	.. 1.97
S-327-FHT (27)	.. 2.22
S-330-FHT (30)	.. 2.54
S-333-FHT (33)	.. 2.79

#### Plug, Flared Hole in Top of Cap and with Latches



No. Contacts	Ea.
P-315-FHT-L (15)	\$1.14
P-318-FHT-L (18)	.. 1.40
P-321-FHT-L (21)	.. 1.65
P-324-FHT-L (24)	.. 1.97
P-327-FHT-L (27)	.. 2.22
P-330-FHT-L (30)	.. 2.54
P-333-FHT-L (33)	.. 2.79

#### Socket, Flared Hole in Top of Cap and with Keepers



No. Contacts	Ea.
S-315-FHT-K (15)	\$1.28
S-318-FHT-K (18)	.. 1.53
S-321-FHT-K (21)	.. 1.78
S-324-FHT-K (24)	.. 2.10
S-327-FHT-K (27)	.. 2.35
S-330-FHT-K (30)	.. 2.67
S-333-FHT-K (33)	.. 2.93

#### Plug, Cable Clamp in Top of Cap



No. Contacts	Ea.
P-315-CCT (15)	\$1.20
P-318-CCT (18)	.. 1.45
P-321-CCT (21)	.. 1.71
P-324-CCT (24)	.. 1.92
P-327-CCT (27)	.. 2.28
P-330-CCT (30)	.. 2.66
P-333-CCT (33)	.. 2.85

#### Socket, Cable Clamp in Top of Cap



No. Contacts	Ea.
S-315-CCT (15)	\$1.33
S-318-CCT (18)	.. 1.58
S-321-CCT (21)	.. 1.84
S-324-CCT (24)	.. 2.16
S-327-CCT (27)	.. 2.41
S-330-CCT (30)	.. 2.78
S-333-CCT (33)	.. 2.98

#### Plug, Cable Clamp in Top of Cap and with Latches



No. Contacts	Ea.
P-315-CCT-L (15)	\$1.33
P-318-CCT-L (18)	.. 1.58
P-321-CCT-L (21)	.. 1.84
P-324-CCT-L (24)	.. 2.18
P-327-CCT-L (27)	.. 2.41
P-330-CCT-L (30)	.. 2.79
P-333-CCT-L (33)	.. 2.98

#### Socket, Cable Clamp in Top of Cap and with Keepers



No. Contacts	Ea.
S-315-CCT-K (15)	\$1.46
S-318-CCT-K (18)	.. 1.72
S-321-CCT-K (21)	.. 1.97
S-324-CCT-K (24)	.. 2.28
S-327-CCT-K (27)	.. 2.54
S-330-CCT-K (30)	.. 2.92
S-333-CCT-K (33)	.. 3.11

### "400" SERIES PLUGS AND SOCKETS (Formerly "Heavy Duty")

#### General Specifications

2, 4, 6, 8, 10 and 12 Contacts.  
All plugs and sockets are polarized.  
Phosphor bronze "knife switch" type socket contacts engage both sides of flat plug contacts—double contact area.  
Molded Bakelite insulation.  
Fibre linings in caps.  
Plug or socket for panel mounting.  
Plug or socket with caps.  
Finish on caps—Black Crystal.  
Plug prong cross section  $\frac{1}{4}$ " x  $\frac{1}{8}$ ".  
Locking fittings available for panel types or extension cables as shown.

We recommend using the 400 series in circuits not exceeding 110 Volts and 10 Amperes, although circuit characteristics may permit higher ratings.

The 2400 series plugs and sockets are similar to the 400, but of an improved design. Increased creepage distances between contacts, and contacts to ground, permit higher ratings. Interchangeable with the 400 series. Highest mechanical and electrical efficiency.

#### PLUG—Less Angle Brackets not Drilled or Tapped Unless Specified

No. Contacts	Ea.
P-402-LAB (2)	\$ .32
P-404-LAB (4)	.44
P-406-LAB (6)	.57
P-408-LAB (8)	.69
P-410-LAB (10)	.83
P-412-LAB (12)	.95



#### SOCKET—Less Angle Brackets. Not Drilled or Tapped Unless Specified

No. Contacts	Ea.
S-402-LAB (2)	\$ .39
S-404-LAB (4)	.57
S-406-LAB (6)	.76
S-408-LAB (8)	.95
S-410-LAB (10)	1.14
S-412-LAB (12)	1.33



#### PLUG—with Angle Brackets for 1/16" Panel

No. Contacts	Ea.
P-402-AB $\frac{1}{16}$ " (2)	\$ .57
P-404-AB $\frac{1}{16}$ " (4)	.69
P-406-AB $\frac{1}{16}$ " (6)	.83
P-408-AB $\frac{1}{16}$ " (8)	.95
P-410-AB $\frac{1}{16}$ " (10)	1.09
P-412-AB $\frac{1}{16}$ " (12)	1.20



#### SOCKET—with Angle Brackets

No. Contacts	Ea.
S-402-AB (2)	\$ .64
S-404-AB (4)	.83
S-406-AB (6)	1.01
S-408-AB (8)	1.20
S-410-AB (10)	1.40
S-412-AB (12)	1.58



#### PLUG—with Shallow Brackets

No. Contacts	Ea.
P-402-SB (2)	\$ .69
P-404-SB (4)	.89
P-406-SB (6)	1.08
P-408-SB (8)	1.27
P-410-SB (10)	1.46
P-412-SB (12)	1.65



#### SOCKET—with Shallow Brackets

No. Contacts	Ea.
S-402-SB (2)	\$ .76
S-404-SB (4)	1.01
S-406-SB (6)	1.27
S-408-SB (8)	1.52
S-410-SB (10)	1.77
S-412-SB (12)	2.02



#### PLUG—with Deep Bracket

No. Contacts	Ea.
P-402-DB (2)	\$ .89
P-404-DB (4)	1.09
P-406-DB (6)	1.28
P-408-DB (8)	1.47
P-410-DB (10)	1.66
P-412-DB (12)	1.85



#### SOCKET—with Deep Brackets

No. Contacts	Ea.
S-402-DB (2)	\$ 1.06
S-404-DB (4)	1.31
S-406-DB (6)	1.57
S-408-DB (8)	1.82
S-410-DB (10)	2.07
S-412-DB (12)	2.32



#### PLUGS

PLUG—Flared Hole in Top	PLUG—Flared Hole in End
No. Contacts	No. Contacts
P-402-FHT (2)	P-402-FHE (2)
P-404-FHT (4)	P-404-FHE (4)
P-406-FHT (6)	P-406-FHE (6)
P-408-FHT (8)	P-408-FHE (8)
P-410-FHT (10)	P-410-FHE (10)
P-412-FHT (12)	P-412-FHE (12)



#### SOCKETS

SOCKET—Flared Hole in Top	SOCKET—Flared Hole in End
No. Contacts	No. Contacts
S-402-FHT (2)	S-402-FHE (2)
S-404-FHT (4)	S-404-FHE (4)
S-406-FHT (6)	S-406-FHE (6)
S-408-FHT (8)	S-408-FHE (8)
S-410-FHT (10)	S-410-FHE (10)
S-412-FHT (12)	S-412-FHE (12)

#### PLUGS

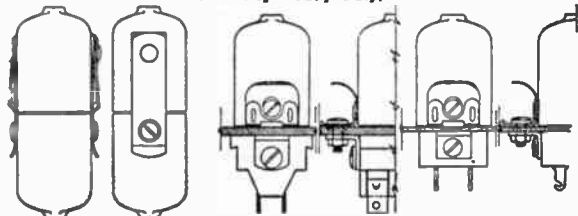
PLUG—Cable Clamp in Top	PLUG—Cable Clamp in End
No. Contacts	No. Contacts
P-402-CCT (2)	P-402-CCE (2)
P-404-CCT (4)	P-404-CCE (4)
P-406-CCT (6)	P-406-CCE (6)
P-408-CCT (8)	P-408-CCE (8)
P-410-CCT (10)	P-410-CCE (10)
P-412-CCT (12)	P-412-CCE (12)



#### SOCKETS

SOCKET—Cable Clamp in Top	SOCKET—Cable Clamp in End
No. Contacts	No. Contacts
S-402-CCT (2)	S-402-CCE (2)
S-404-CCT (4)	S-404-CCE (4)
S-406-CCT (6)	S-406-CCE (6)
S-408-CCT (8)	S-408-CCE (8)
S-410-CCT (10)	S-410-CCE (10)
S-412-CCT (12)	S-412-CCE (12)

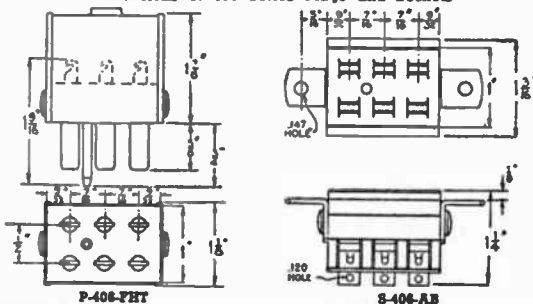
### LOCKS FOR 400 SERIES PLUGS AND SOCKETS (Formerly Heavy Duty)



ILLUSTRATING No. 83 LOCK. May be attached to any 400 Series plug for extension cables. If plugs are ordered with this lock, specify "with No. 83 locks."  
No. 83 Lock when attached to plug, add to list per pair..... \$ .38  
No. 83 Locks ONLY per pair..... .38

ILLUSTRATING No. 85 LOCK. May be used on all panel mount 400 Series plugs and sockets when surface is flush with top of panel. Cannot be used on type DB plugs.  
No. 85 Locks ONLY, per pair..... \$ .38

#### Dimensions of 400 Series Plugs and Sockets



## "500" SERIES PLUGS AND SOCKETS

For Complete Listing of 500 SERIES, Write for No. 500 Catalog

Designed for 5,000 volts and 25 amperes per contact. Circuit characteristics, however, may alter this rating one way or the other.

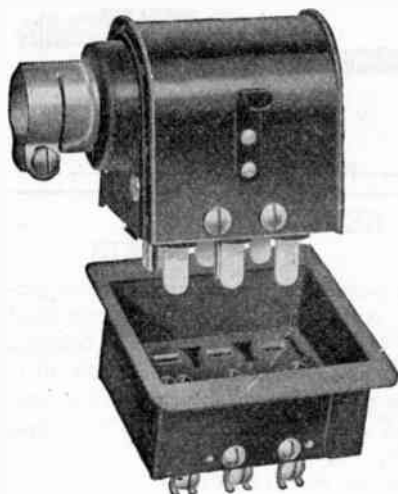
Long leakage path from terminal to terminal, and terminal to ground. Contacts are brass and phosphor bronze, silver plated. Metal parts of caps and brackets are steel, parkerized (rust-proofed). Plug and socket blocks are interchangeable in caps and brackets.

All sizes are polarized in a manner to prevent a smaller plug being inserted in a larger socket. Thus different sizes may be used on one installation without danger of making wrong connections.

Extreme care has been taken to make terminal connections under cap very accessible both for original wiring and subsequent inspection. The cap is insulated with canvas bakelite. Plug prong cross section  $\frac{5}{16}$ " x  $\frac{3}{32}$ ".

**IMPORTANT:** For safety with high voltages DEEP BRACKETS should always be used on one plug or socket, when the other plug or socket has a CAP. SHALLOW BRACKETS are for use only in connecting two units, each unit having plug or socket with SHALLOW BRACKET.

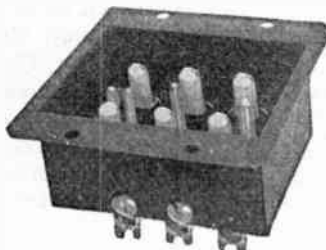
**P-506-CE**  
(Plug with Cap)  
(BX Clamp shown but not furnished)



**S-506-DB**  
(Socket with Deep Bracket)



**S-503-CE**  
(Socket with Cap)



**P-506-DB**  
(Plug with Deep Bracket)

Cable entrance: Because of the great variation in type and size of cables, we have considered it best not to supply cable clamps of any kind. The cap end is made to accommodate standard BX clamps which may be obtained at any electrical jobbing house. The cap end will be furnished with round hole from  $\frac{1}{2}$ " diameter and  $1\frac{1}{4}$ " diameter in steps of  $\frac{1}{8}$ ", if the size required is given on order. If no size is given, plain cap end with center punch locating center will be shipped.



**P-506-SB**  
(Plug with Shallow Bracket)



**S-506-SB**  
(Socket with Shallow Bracket)

### LOCKS FOR 500 SERIES PLUGS AND SOCKETS



Locks shown above are used in connection with any DEEP BRACKET and cap combination.

The locks securely hold the units together, but they can be released instantly.

The mounting plates are made to fit all DEEP BRACKETS, and are fastened by the same screws or rivets that hold the deep brackets to the panel. Can not be used on shallow brackets. Sold in pairs only.

**No. 500-L Locks** Per pair **\$0.99**

### PLUG

With Cap	
Code	Price Ea.
P-502-CE	\$2.75
P-504-CE	3.96
P-506-CE	5.17
P-508-CE	6.38
P-510-CE	7.59
P-512-CE	8.80

### PLUG

With Deep Bracket	
Code	Price Ea.
P-502-DB	\$2.42
P-504-DB	3.47
P-506-DB	4.51
P-508-DB	5.56
P-510-DB	6.60
P-512-DB	7.65

### PLUG

With Shallow Bracket	
Code	Price Ea.
P-502-SB	\$2.42
P-504-SB	3.47
P-506-SB	4.51
P-508-SB	5.56
P-510-SB	6.60
P-512-SB	7.65

### SOCKET

With Cap	
Code	Price Ea.
S-502-CE	\$2.75
S-504-CE	3.96
S-506-CE	5.17
S-508-CE	6.38
S-510-CE	7.59
S-512-CE	8.80

### SOCKET

With Deep Bracket	
Code	Price Ea.
S-502-DB	\$2.42
S-504-DB	3.47
S-506-DB	4.51
S-508-DB	5.56
S-510-DB	6.60
S-512-DB	7.65

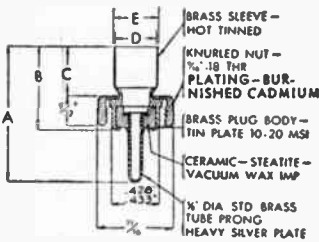
### SOCKET

With Shallow Bracket	
Code	Price Ea.
S-502-SB	\$2.42
S-504-SB	3.47
S-506-SB	4.51
S-508-SB	5.56
S-510-SB	6.60
S-512-SB	7.65

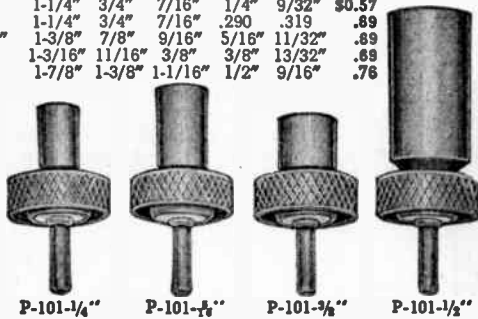


### SERIES 101 PLUGS

The entire No. 101 Series of Plugs are identical with the exception of the cable ferrule which is furnished in four sizes as listed below. All metal parts are of brass. These Plugs fit all of the No. 101 Series Sockets. Assembly meets Navy Specifications. A low loss Plug and Socket ideal for high frequency connections.

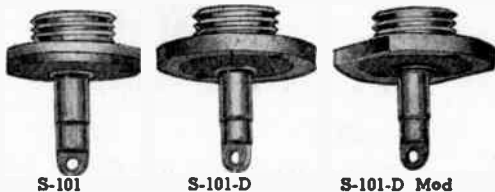


Code No.	A	B	C	D	E	Ea.
P-101-1/4"	1-1/4"	3/4"	7/16"	1/4"	9/32"	\$0.57
P-101-.290	1-1/4"	3/4"	7/16"	.290	.319	.89
P-101-5/16"	1-3/8"	7/8"	9/16"	5/16"	11/32"	.89
P-101-3/8"	1-3/16"	11/16"	3/8"	3/8"	13/32"	.69
P-101-1/2"	1-7/8"	1-3/8"	1-1/16"	1/2"	9/16"	.76



### SERIES 101 SOCKETS

The No. 101 Series Sockets are furnished in three types as shown below. Base is of Brass, Nickel Plated with Chrome Flash. Brass contact is Silver Plated. Insulation is of low loss natural color XXX Bakelite. Meets Navy Specifications. The S-101-D is similar to the S-101 except that the Bakelite is recessed in the base. S-101-D Mod. is the same as S-101-D except that two sides of the base are milled as shown. Mounting Holes No. 101—No. 41 drill on 1 1/8" centers. Mounting Holes No. 101-D and 101-D Mod. No. 30 drill on 1 1/8" centers.



S-101 Price Each—\$0.51    S-101-D Price Each—\$0.76    S-101-D Mod Price Each—\$0.76

### SERIES 201

#### PLUGS

The No. 201 Series Plugs are of the same design as the No. 101 but are of heavier stock and larger. Made in one size only with 3/8" ferrule. All metal parts are of Brass, same finish as No. 101 Series and Wax Impregnated Ceramic insulation. Overall length 1 1/8". Prong diameter 3/32". Fits only the 201 Socket.

#### SOCKETS

The 201 Socket is similar to the S-101-D except larger. Brass base is nickel plated with Chrome Flash. Brass contact is Silver Plated. Insulation is of low loss natural color XXX Bakelite. Both Plug and Socket meet Navy Specifications.

Mounting holes—No. 30 diameter 3/8". Fits only the 201 Socket.



Code P-201-3/8" ..... 3/8"—27 thread. Ea. \$0.89    Code S-201 ..... Ea. \$0.95

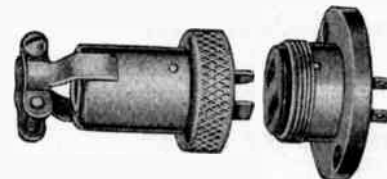
### SERIES 202

#### PLUGS

#### SOCKETS

The 202 Series Plugs and Sockets are made in two contacts only. Metal parts are of Brass with burnished Cadmium Plate. Insulation is of Molded Bakelite. Phosphor Bronze "Knife Switch" type Socket Contacts engage both sides of flat Plug Contacts—double contact area. Formed Fibre linings in caps. Polarized. Knurled nut has 3/4"—27 thread.

Socket Mounting Holes. No. 30 drill on 1" centers.



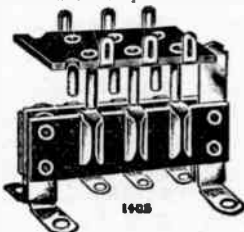
P-202-CCT—\$0.70    P-202-FHT—\$0.57    S-202-B—\$0.83  
(as shown above)    (without Cable Clamps)  
S-202-CCT—\$0.72    S-202-FHT—\$0.58    P-202-B—\$0.81

### 1400 SERIES PLUGS AND SOCKETS

This series of "disconnect" plugs and sockets has the distinct advantage of low cost for a separate unit handling many circuits. Due to exposed metal parts, it is recommended for use when the complete unit is within a housing. Reduces costs of servicing units. Advantageous in shipping when it is desirable to pack units separately. Polarized—assures

correct coupling. Spring temper brass sockets assure perfect contact. Standard units are listed below from 5 to 16 contacts. However we can supply units having as many as 30 or more contacts.

On No. 1420 or larger we recommend the plug be divided into two or more units, as a single long plug is not mechanically strong. The socket will be made in one assembly.



No. 1405	( 5 Contacts)	Ea. \$0.35	No. 1411	(11 Contacts)	Ea. \$ .68
No. 1406	( 6 Contacts)	Ea. .41	No. 1412	(12 Contacts)	Ea. .74
No. 1407	( 7 Contacts)	Ea. .48	No. 1413	(13 Contacts)	Ea. .79
No. 1408	( 8 Contacts)	Ea. .52	No. 1414	(14 Contacts)	Ea. .85
No. 1409	( 9 Contacts)	Ea. .57	No. 1415	(15 Contacts)	Ea. .90
No. 1410	(10 Contacts)	Ea. .63	No. 1416	(16 Contacts)	Ea. .98

For units with more than 16 contacts, add 6c to the No. 1416 price for each additional contact.

## BARRIER TYPE TERMINAL STRIPS

Increased insulation is provided by having Barriers placed between each Terminal. These Barriers follow around the edge of the Strips and terminate at the base. They not only make a long leakage path but prevent direct shorts from frayed wires at the terminals. Mounting holes are at the ends as illustrated. The base is molded Bakelite.

The Terminals and Binder Screws are of brass, nickel plated. Marker Strips may be ordered and imprinted to supply terminal designations. These Marker Strips mount beneath Terminal Strips and also afford insulation from metal mounting surface.

5-40 x  $\frac{1}{8}$  Binder Head Screws

### No. 140 TERMINAL STRIPS

Metal to Metal Spacing over Bakelite  $\frac{1}{4}$ "



No. 2-140



No. 2-140-W



No. 2-140- $\frac{3}{4}$  W



No. 2-140-Y

**No. 140**

Code	Ea.
1-140	.15
2-140	.24
3-140	.33
4-140	.42
5-140	.51
6-140	.59
7-140	.68
8-140	.77
9-140	.86
10-140	.95
11-140	1.03
12-140	1.12
13-140	1.21
14-140	1.31
15-140	1.40
16-140	1.49
17-140	1.57
18-140	1.66
19-140	1.75
20-140	1.84
21-140	1.93

**No. 140-W**

Code	Ea.
1-140-W	.19
2-140-W	.32
3-140-W	.44
4-140-W	.57
5-140-W	.69
6-140-W	.83
7-140-W	.95
8-140-W	1.08
9-140-W	1.21
10-140-W	1.33
11-140-W	1.45
12-140-W	1.58
13-140-W	1.71
14-140-W	1.84
15-140-W	1.96
16-140-W	2.09
17-140-W	2.21
18-140-W	2.34
19-140-W	2.46
20-140-W	2.60
21-140-W	2.72

**No. 140- $\frac{3}{4}$  W**

Code	Ea.
1-140- $\frac{3}{4}$ W	.19
2-140- $\frac{3}{4}$ W	.32
3-140- $\frac{3}{4}$ W	.44
4-140- $\frac{3}{4}$ W	.57
5-140- $\frac{3}{4}$ W	.69
6-140- $\frac{3}{4}$ W	.83
7-140- $\frac{3}{4}$ W	.95
8-140- $\frac{3}{4}$ W	1.08
9-140- $\frac{3}{4}$ W	1.21
10-140- $\frac{3}{4}$ W	1.33
11-140- $\frac{3}{4}$ W	1.45
12-140- $\frac{3}{4}$ W	1.58
13-140- $\frac{3}{4}$ W	1.71
14-140- $\frac{3}{4}$ W	1.84
15-140- $\frac{3}{4}$ W	1.96
16-140- $\frac{3}{4}$ W	2.09
17-140- $\frac{3}{4}$ W	2.21
18-140- $\frac{3}{4}$ W	2.34
19-140- $\frac{3}{4}$ W	2.46
20-140- $\frac{3}{4}$ W	2.60
21-140- $\frac{3}{4}$ W	2.72

#### MARKER STRIPS for 140, 140-W and 140- $\frac{3}{4}$ W

The standard Marker Strips are of gray fibre  $\frac{1}{8}$ " thick and character designations are imprinted in white. Bakelite Marker Strips can be supplied at an increase in price, and are designated by code MSX instead of MS. Prices on application.

Code	Per 100
MS-1-140	\$ 2.48
MS-2-140	3.30
MS-3-140	4.13
MS-4-140	4.95
MS-5-140	5.78
MS-6-140	6.60
MS-7-140	7.43
MS-8-140	8.25
MS-9-140	9.08
MS-10-140	9.90
MS-11-140	10.73
MS-12-140	11.55
MS-13-140	12.38
MS-14-140	13.20
MS-15-140	14.03
MS-16-140	14.85
MS-17-140	15.68
MS-18-140	16.50
MS-19-140	17.33
MS-20-140	18.15
MS-21-140	18.98

#### MARKER STRIPS for 140-Y

The standard Marker Strips are of gray fibre  $\frac{1}{8}$ " thick and character designations are imprinted in white. Bakelite Marker Strips can be supplied at an increase in price, and are designated by code MSX instead of MS. Prices on application.

**No. 140-Y**

Code	Ea.
1-140-Y	.19
2-140-Y	.32
3-140-Y	.44
4-140-Y	.57
5-140-Y	.69
6-140-Y	.83
7-140-Y	.95
8-140-Y	1.08
9-140-Y	1.21
10-140-Y	1.33
11-140-Y	1.45
12-140-Y	1.58
13-140-Y	1.71
14-140-Y	1.84
15-140-Y	1.96
16-140-Y	2.09
17-140-Y	2.21
18-140-Y	2.34
19-140-Y	2.46
20-140-Y	2.60
21-140-Y	2.72

Code	Per 100
MS-1-140-Y	\$ 5.78
MS-2-140-Y	6.60
MS-3-140-Y	7.43
MS-4-140-Y	8.25
MS-5-140-Y	9.08
MS-6-140-Y	9.90
MS-7-140-Y	10.73
MS-8-140-Y	11.55
MS-9-140-Y	12.38
MS-10-140-Y	13.20
MS-11-140-Y	14.03
MS-12-140-Y	14.85
MS-13-140-Y	15.68
MS-14-140-Y	16.50
MS-15-140-Y	17.33
MS-16-140-Y	18.15
MS-17-140-Y	18.98
MS-18-140-Y	19.80
MS-19-140-Y	20.63
MS-20-140-Y	21.45
MS-21-140-Y	22.28

6-32 x  $\frac{1}{4}$  Binder Head Screws

### No. 141 TERMINAL STRIPS

Metal to Metal Spacing over Bakelite  $\frac{3}{8}$ "



No. 2-141



No. 2-141-W



No. 2-141- $\frac{3}{4}$  W



No. 2-141-Y

**No. 141**

Code	Ea.
1-141	.20
2-141	.31
3-141	.42
4-141	.54
5-141	.65
6-141	.75
7-141	.88
8-141	.99
9-141	1.10
10-141	1.22
11-141	1.33
12-141	1.44
13-141	1.56
14-141	1.67
15-141	1.78
16-141	1.90
17-141	2.01
18-141	2.12
19-141	2.24
20-141	2.35

**No. 141-W**

Code	Ea.
1-141-W	.24
2-141-W	.41
3-141-W	.57
4-141-W	.74
5-141-W	.90
6-141-W	1.07
7-141-W	1.23
8-141-W	1.40
9-141-W	1.56
10-141-W	1.73
11-141-W	1.89
12-141-W	2.06
13-141-W	2.22
14-141-W	2.39
15-141-W	2.55
16-141-W	2.72
17-141-W	2.88
18-141-W	3.05
19-141-W	3.21
20-141-W	3.38

**No. 141- $\frac{3}{4}$  W**

Code	Ea.
1-141- $\frac{3}{4}$ W	.24
2-141- $\frac{3}{4}$ W	.41
3-141- $\frac{3}{4}$ W	.57
4-141- $\frac{3}{4}$ W	.74
5-141- $\frac{3}{4}$ W	.90
6-141- $\frac{3}{4}$ W	1.07
7-141- $\frac{3}{4}$ W	1.23
8-141- $\frac{3}{4}$ W	1.40
9-141- $\frac{3}{4}$ W	1.56
10-141- $\frac{3}{4}$ W	1.73
11-141- $\frac{3}{4}$ W	1.89
12-141- $\frac{3}{4}$ W	2.06
13-141- $\frac{3}{4}$ W	2.22
14-141- $\frac{3}{4}$ W	2.39
15-141- $\frac{3}{4}$ W	2.55
16-141- $\frac{3}{4}$ W	2.72
17-141- $\frac{3}{4}$ W	2.88
18-141- $\frac{3}{4}$ W	3.05
19-141- $\frac{3}{4}$ W	3.21
20-141- $\frac{3}{4}$ W	3.38

#### MARKER STRIPS for 141, 141-W and 141- $\frac{3}{4}$ W

Standard Marker Strips are of gray fibre  $\frac{1}{8}$ " thick. See column above for designation for Bakelite Marker Strips.

Code	Per 100
MS-1-141	\$ 2.75
MS-2-141	3.85
MS-3-141	4.95
MS-4-141	6.05
MS-5-141	7.15
MS-6-141	8.25
MS-7-141	9.35
MS-8-141	10.45
MS-9-141	11.55
MS-10-141	12.65
MS-11-141	13.75
MS-12-141	14.85
MS-13-141	15.95
MS-14-141	17.05
MS-15-141	18.15
MS-16-141	19.25
MS-17-141	20.35
MS-18-141	21.45
MS-19-141	22.55
MS-20-141	23.65

#### MARKER STRIPS for 141-Y

Standard Marker Strips are of gray fibre  $\frac{1}{8}$ " thick. See column above for designation for Bakelite Marker Strips.

**No. 141-Y**

Code	Ea.
1-141-Y	.24
2-141-Y	.41
3-141-Y	.57
4-141-Y	.74
5-141-Y	.90
6-141-Y	1.07
7-141-Y	1.23
8-141-Y	1.40
9-141-Y	1.56
10-141-Y	1.73
11-141-Y	1.89
12-141-Y	2.06
13-141-Y	2.22
14-141-Y	2.39
15-141-Y	2.55
16-141-Y	2.72
17-141-Y	2.88
18-141-Y	3.05
19-141-Y	3.21
20-141-Y	3.38

Code	Per 100
MS-1-141-Y	\$ 6.05
MS-2-141-Y	7.15
MS-3-141-Y	8.25
MS-4-141-Y	9.35
MS-5-141-Y	10.45
MS-6-141-Y	11.55
MS-7-141-Y	12.65
MS-8-141-Y	13.75
MS-9-141-Y	14.85
MS-10-141-Y	15.95
MS-11-141-Y	17.05
MS-12-141-Y	18.15
MS-13-141-Y	19.25
MS-14-141-Y	20.35
MS-15-141-Y	21.45
MS-16-141-Y	22.55
MS-17-141-Y	23.65
MS-18-141-Y	24.75
MS-19-141-Y	25.85
MS-20-141-Y	26.95

### BARRIER TYPE TERMINAL STRIPS

8-32 x 1/4" Blinder Head Screws No. 142 TERMINAL STRIPS Metal to Metal Spacing over Bakelite 1/4"



No. 2-142



No. 2-142-W



No. 2-142-3/4 W



No. 2-142-Y

No. 142	
Code	Ea.
1-142	\$ .23
2-142	.36
3-142	.51
4-142	.65
5-142	.78
6-142	.92
7-142	1.07
8-142	1.20
9-142	1.34
10-142	1.49
11-142	1.62
12-142	1.76
13-142	1.90
14-142	2.04
15-142	2.18
16-142	2.32
17-142	2.45

No. 142-W	
Code	Ea.
1-142-W	\$ .30
2-142-W	.50
3-142-W	.70
4-142-W	.90
5-142-W	1.11
6-142-W	1.31
7-142-W	1.52
8-142-W	1.72
9-142-W	1.93
10-142-W	2.12
11-142-W	2.33
12-142-W	2.53
13-142-W	2.74
14-142-W	2.94
15-142-W	3.15
16-142-W	3.34
17-142-W	3.54

No. 142-3/4 W	
Code	Ea.
1-142-3/4 W	\$ .30
2-142-3/4 W	.50
3-142-3/4 W	.70
4-142-3/4 W	.90
5-142-3/4 W	1.11
6-142-3/4 W	1.31
7-142-3/4 W	1.52
8-142-3/4 W	1.72
9-142-3/4 W	1.93
10-142-3/4 W	2.12
11-142-3/4 W	2.33
12-142-3/4 W	2.53
13-142-3/4 W	2.74
14-142-3/4 W	2.94
15-142-3/4 W	3.15
16-142-3/4 W	3.34
17-142-3/4 W	3.54

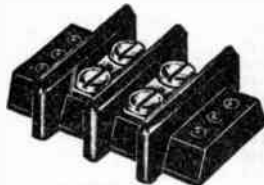
MARKER STRIPS for 142, 142-W, 142-3/4 W	
Code	Per 100
MS-1-142	\$ 3.03
MS-2-142	4.40
MS-3-142	5.78
MS-4-142	7.15
MS-5-142	8.53
MS-6-142	9.90
MS-7-142	11.28
MS-8-142	12.65
MS-9-142	14.03
MS-10-142	15.40
MS-11-142	16.78
MS-12-142	18.15
MS-13-142	19.53
MS-14-142	20.90
MS-15-142	22.28
MS-16-142	23.65
MS-17-142	25.03

No. 142-Y	
Code	Ea.
1-142-Y	\$ .30
2-142-Y	.50
3-142-Y	.70
4-142-Y	.90
5-142-Y	1.11
6-142-Y	1.31
7-142-Y	1.52
8-142-Y	1.72
9-142-Y	1.93
10-142-Y	2.12
11-142-Y	2.33
12-142-Y	2.53
13-142-Y	2.74
14-142-Y	2.94
15-142-Y	3.15
16-142-Y	3.34
17-142-Y	3.54

MARKER STRIPS for 142-Y	
Code	Per 100
MS-1-142-Y	\$ 8.33
MS-2-142-Y	7.70
MS-3-142-Y	9.08
MS-4-142-Y	10.45
MS-5-142-Y	11.83
MS-6-142-Y	13.20
MS-7-142-Y	14.58
MS-8-142-Y	15.95
MS-9-142-Y	17.33
MS-10-142-Y	18.70
MS-11-142-Y	20.08
MS-12-142-Y	21.45
MS-13-142-Y	22.83
MS-14-142-Y	24.20
MS-15-142-Y	25.58
MS-16-142-Y	26.95
MS-17-142-Y	28.33

### No. 150 TERMINAL STRIPS

1 1/4" wide by 1/2" high. Terminals are mounted on 1/4" centers. Screws: 10-32 x 1/4" brass, burnished nickel plate. Fits standard 50 Amp. solder lug for 6 Ga. stranded wire. Metal to metal spacing over bakelite 3/8".



No. 2-150

No. 150	
Code	Ea.
1-150	\$ .55
2-150	.84
3-150	1.32
4-150	1.71
5-150	2.09
6-150	2.48
7-150	2.88
8-150	3.25
9-150	3.63
10-150	4.02

No. 150-W	
Code	Ea.
1-150-W	\$ .66
2-150-W	1.13
3-150-W	1.60
4-150-W	2.07
5-150-W	2.53
6-150-W	3.00
7-150-W	3.46
8-150-W	3.92
9-150-W	4.40
10-150-W	4.87

No. 150-3/4 W	
Code	Ea.
1-150-3/4 W	\$ .66
2-150-3/4 W	1.13
3-150-3/4 W	1.60
4-150-3/4 W	2.07
5-150-3/4 W	2.53
6-150-3/4 W	3.00
7-150-3/4 W	3.46
8-150-3/4 W	3.92
9-150-3/4 W	4.40
10-150-3/4 W	4.87

MARKER STRIPS for 150 Series	
Code	Per 100
MS-1-150	\$ 6.60
MS-2-150	8.14
MS-3-150	9.68
MS-4-150	11.22
MS-5-150	12.76
MS-6-150	14.30
MS-7-150	15.84
MS-8-150	17.38
MS-9-150	18.92
MS-10-150	20.46

### No. 151 TERMINAL STRIPS

2" wide by 1/2" high. Terminals are mounted on 3/8" centers. Screws: 12-32 x 3/8" brass, burnished nickel plate. Fits standard 70 Amp. solder lug for 4 Ga. stranded wire. Metal to metal spacing over bakelite 1/2".



No. 2-151

No. 151	
Code	Ea.
1-151	\$ .94
2-151	1.71
3-151	2.48
4-151	3.25
5-151	4.02
6-151	4.79
7-151	5.56
8-151	6.33

No. 151-W	
Code	Ea.
1-151-W	\$1.10
2-151-W	2.04
3-151-W	2.97
4-151-W	3.91
5-151-W	4.84
6-151-W	5.78
7-151-W	6.71
8-151-W	7.65

No. 151-3/4 W	
Code	Ea.
1-151-3/4 W	\$1.10
2-151-3/4 W	2.04
3-151-3/4 W	2.97
4-151-3/4 W	3.91
5-151-3/4 W	4.84
6-151-3/4 W	5.78
7-151-3/4 W	6.71
8-151-3/4 W	7.65

MARKER STRIPS for 151 Series	
Code	Per 100
MS-1-151	\$ 6.68
MS-2-151	10.18
MS-3-151	13.48
MS-4-151	16.78
MS-5-151	20.08
MS-6-151	23.38
MS-7-151	26.68
MS-8-151	29.98

### No. 152 TERMINAL STRIPS

2 1/4" wide by 1 1/2" high. Terminals are mounted on 1 1/4" centers. Screws: 1/4"-28 x 1/2" brass, burnished nickel plate. Fits standard 80 Amp. solder lug for 2 Ga. stranded wire. Metal to metal spacing over bakelite 1".



No. 2-152

No. 152	
Code	Ea.
1-152	\$1.27
2-152	2.42
3-152	3.58
4-152	4.73
5-152	5.89
6-152	7.04

No. 152-W	
Code	Ea.
1-152-W	\$1.49
2-152-W	2.86
3-152-W	4.24
4-152-W	5.61
5-152-W	6.99
6-152-W	8.36

No. 152-3/4 W	
Code	Ea.
1-152-3/4 W	\$1.49
2-152-3/4 W	2.86
3-152-3/4 W	4.24
4-152-3/4 W	5.61
5-152-3/4 W	6.99
6-152-3/4 W	8.36

MARKER STRIPS for 152 Series	
Code	Per 100
MS-1-152	\$ 7.15
MS-2-152	12.85
MS-3-152	18.15
MS-4-152	23.85
MS-5-152	29.15
MS-6-152	34.85

#### "W" Solder Terminal for Barrier Strips



Code	For use with Barrier Strip	Per 100
No. W-140	No. 140	\$3.80
No. W-141	No. 141	5.06
No. W-142	No. 142	6.33

Code	For use with Barrier Strip	Per 100
No. W-150	No. 150	\$8.86
No. W-151	No. 151	15.18
No. W-152	No. 152	22.77



#### "Y" Solder Terminal

Code	For use with Barrier Strip	Per 100
No. Y-140	No. 140	\$3.80
No. Y-141	No. 141	5.06
No. Y-142	No. 142	6.33

### FANNING STRIPS FOR CONNECTING TO BARRIER TERMINAL STRIPS

**JONES FANNING STRIP**

UPTURNED ENDS HOLD TERMINAL UNDER SCREWS PRIOR TO TIGHTENING.

CLAMPS-DOWN OVER INSULATION. HOLDS WIRE SECURELY.

WIRE HELD BY TERMINAL NIB AND SOLDERED FOR POSITIVE CONNECTION.

Eliminates Color Coding  
•  
Speeds up Assembly  
•  
Improves Appearance  
•  
Insures Correct Connections  
•

For Right Angle Mounting

**JONES FANNING STRIP wired and in position on Jones No. 141 Barrier Strip**

Illustration at right shows a No. 3-162 A-R Fanning Strip connected to a No. 3-142 Barrier Strip.

Jones Fanning Strip Terminals are of .032" Brass, Cadmium Plated. The Bakelite strips are furnished with a hole in either the right or left end for fastening the cable with a cable clamp or lacing twine. Simplifies cable or harness wiring, assuring positive connections. Makes replacement of units an easy matter and assures correct connections after servicing.

In many instances where there is not sufficient room for the standard Fanning Strips we can supply those listed formed for right angle mounting permitting use when Barrier mounts flush with the side of the chassis. Specify Series 160A, 161A and 162A instead of 160, 161 and 162. Prices slightly higher.



6-161-L (Cable Clamp on Left)



6-161-R (Cable Clamp on Right)

#### THE 160 SERIES

The following Fanning Strips fit the 140 Series Barrier Strips. Terminals are mounted on  $\frac{1}{8}$ " Bakelite,  $\frac{1}{2}$ " wide and on  $\frac{3}{16}$ " centers.

Code	Ea.	Code	Ea.
2-160-L	.12	2-160-R	.12
3-160-L	.18	3-160-R	.18
4-160-L	.23	4-160-R	.23
5-160-L	.29	5-160-R	.29
6-160-L	.35	6-160-R	.35
7-160-L	.41	7-160-R	.41
8-160-L	.46	8-160-R	.46
9-160-L	.52	9-160-R	.52
10-160-L	.58	10-160-R	.58
11-160-L	.64	11-160-R	.64
12-160-L	.69	12-160-R	.69
13-160-L	.75	13-160-R	.75
14-160-L	.81	14-160-R	.81
15-160-L	.87	15-160-R	.87
16-160-L	.92	16-160-R	.92
17-160-L	.98	17-160-R	.98
18-160-L	1.05	18-160-R	1.05
19-160-L	1.10	19-160-R	1.10
20-160-L	1.16	20-160-R	1.16
21-160-L	1.21	21-160-R	1.21

#### THE 161 SERIES

The following Fanning Strips fit the 141 Series Barrier Strips. Terminals are mounted on  $\frac{1}{8}$ " Bakelite,  $\frac{3}{8}$ " wide and on  $\frac{1}{4}$ " centers.

Code	Ea.	Code	Ea.
2-161-L	.13	2-161-R	.13
3-161-L	.19	3-161-R	.19
4-161-L	.24	4-161-R	.24
5-161-L	.30	5-161-R	.30
6-161-L	.36	6-161-R	.36
7-161-L	.42	7-161-R	.42
8-161-L	.47	8-161-R	.47
9-161-L	.53	9-161-R	.53
10-161-L	.59	10-161-R	.59
11-161-L	.65	11-161-R	.65
12-161-L	.70	12-161-R	.70
13-161-L	.76	13-161-R	.76
14-161-L	.83	14-161-R	.83
15-161-L	.88	15-161-R	.88
16-161-L	.94	16-161-R	.94
17-161-L	.99	17-161-R	.99
18-161-L	1.06	18-161-R	1.06
19-161-L	1.11	19-161-R	1.11
20-161-L	1.17	20-161-R	1.17

#### THE 162 SERIES

The following Fanning Strips fit the 142 Series Barrier Strips. Terminals are mounted on  $\frac{1}{8}$ " Bakelite,  $\frac{3}{8}$ " wide and on  $\frac{1}{4}$ " centers.

Code	Ea.	Code	Ea.
2-162-L	.15	2-162-R	.15
3-162-L	.21	3-162-R	.21
4-162-L	.26	4-162-R	.26
5-162-L	.32	5-162-R	.32
6-162-L	.39	6-162-R	.39
7-162-L	.44	7-162-R	.44
8-162-L	.50	8-162-R	.50
9-162-L	.55	9-162-R	.55
10-162-L	.62	10-162-R	.62
11-162-L	.67	11-162-R	.67
12-162-L	.73	12-162-R	.73
13-162-L	.78	13-162-R	.78
14-162-L	.85	14-162-R	.85
15-162-L	.90	15-162-R	.90
16-162-L	.96	16-162-R	.96
17-162-L	1.01	17-162-R	1.01

#### CABLE CLAMPS

Cable Clamps are available for the Fanning Strips listed at the left and are furnished in 8 different sizes as listed below. Cable Clamp is of Brass Nickel Plated, with 6-32 round head Nickel Plated Brass Screws. For convenience the Cable Clamps are furnished unassembled.

#### CABLE CLAMP SIZES AVAILABLE

No.	I. D.
CC-161-4	$\frac{1}{4}$ "
CC-161-6	$\frac{3}{8}$ "
CC-161-8	$\frac{1}{2}$ "
CC-161-10	$\frac{5}{8}$ "
CC-161-12	$\frac{3}{4}$ "
CC-161-14	$\frac{7}{8}$ "

List price 11c each.

Be sure to give code number when ordering.

On small sizes Lacing Twine can be used for anchoring cable to the Fanning Strip instead of Cable Clamp.



### NO. 1 TERMINAL STRIPS

Terminal 1/4" Round Copper, Flattened at Ends, Tin Plated  
A convenient and compact strip where solder connections are desired.

Insulation: Canvas Base Bakelite, 1/2" wide, 1/8" thick.  
Terminals mounted on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-1 (2 Terminals)	\$ .12	No. 8-1 (8 Terminals)	\$ .17
No. 3-1 (3 Terminals)	.13	No. 7-1 (7 Terminals)	.18
No. 4-1 (4 Terminals)	.14	No. 8-1 (8 Terminals)	.19
No. 5-1 (5 Terminals)	.15	No. 9-1 (9 Terminals)	.20



### NO. 12 TERMINAL STRIPS

Terminal 1/16" Brass, Tin Plated

Similar to No. 11, except larger. Solder tab is flat, but will be bent up, if specified.

Screw: 10-32 x 3/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 1 1/2" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 9 B & S gauge wire (.114").

Code	Ea.	Code	Ea.
No. 2-12 (2 Terminals)	\$ .44	No. 6-12 (6 Terminals)	\$1.14
No. 3-12 (3 Terminals)	.61	No. 7-12 (7 Terminals)	1.32
No. 4-12 (4 Terminals)	.79	No. 8-12 (8 Terminals)	1.50
No. 5-12 (5 Terminals)	.97	No. 9-12 (9 Terminals)	1.67



### NO. 3 TERMINAL STRIPS

Terminal 1/4" Round Copper, Flattened at Each End, Tin Plated

Similar to No. 1, except closer spacing and furnished with holes instead of hooks.

Insulation: Canvas base Bakelite, 1/2" wide, 1/8" thick.  
Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-3 (2 Terminals)	\$ .14	No. 6-3 (6 Terminals)	\$ .19
No. 3-3 (3 Terminals)	.15	No. 7-3 (7 Terminals)	.20
No. 4-3 (4 Terminals)	.17	No. 8-3 (8 Terminals)	.21
No. 5-3 (5 Terminals)	.18	No. 9-3 (9 Terminals)	.22



### NO. 16 TERMINAL STRIPS

Terminal .028" Brass, Cadmium Plated

A popular priced screw and solder terminal with many desirable features.

Screw: 6-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/8" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-16 (2 Terminals)	\$ .13	No. 6-16 (6 Terminals)	\$ .31
No. 3-16 (3 Terminals)	.18	No. 7-16 (7 Terminals)	.35
No. 4-16 (4 Terminals)	.22	No. 8-16 (8 Terminals)	.40
No. 5-16 (5 Terminals)	.26	No. 9-16 (9 Terminals)	.44



### NO. 6 TERMINAL STRIPS

Terminal .046" Brass, Cadmium Plated

Screw and solder terminal. Substantial and reasonably priced.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/8" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-6 (2 Terminals)	\$ .15	No. 6-6 (6 Terminals)	\$ .33
No. 3-6 (3 Terminals)	.20	No. 7-6 (7 Terminals)	.37
No. 4-6 (4 Terminals)	.24	No. 8-6 (8 Terminals)	.42
No. 5-6 (5 Terminals)	.29	No. 9-6 (9 Terminals)	.46



### NO. 20 TERMINAL STRIPS

Terminal 1/16" Brass, Burnished Nickel Plate

Strong two screw terminal with ears to hold wire securely under screw.

Screws: 6-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/8" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 13 B & S gauge wire (.071").

Code	Ea.	Code	Ea.
No. 2-20 (2 Terminals)	\$ .31	No. 6-20 (6 Terminals)	\$ .92
No. 3-20 (3 Terminals)	.46	No. 7-20 (7 Terminals)	1.08
No. 4-20 (4 Terminals)	.62	No. 8-20 (8 Terminals)	1.23
No. 5-20 (5 Terminals)	.77	No. 9-20 (9 Terminals)	1.39



### NO. 7 TERMINAL STRIPS

Terminal .046" Brass, Burnished Nickel Plate

A two screw insulated terminal strip that can be mounted directly on metal surface.

Screws: 6-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 7/8" wide, 1/8" thick (total). Terminals mounted on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-7 (2 Terminals)	\$ .22	No. 6-7 (6 Terminals)	\$ .62
No. 3-7 (3 Terminals)	.32	No. 7-7 (7 Terminals)	.72
No. 4-7 (4 Terminals)	.42	No. 8-7 (8 Terminals)	.81
No. 5-7 (5 Terminals)	.52	No. 9-7 (9 Terminals)	.91



### NO. 21 TERMINAL STRIPS

Terminal 1/16" Brass, Burnished Nickel Plate

Similar to No. 20, except larger.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 1 1/2" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 11 B & S gauge wire (.090").

Code	Ea.	Code	Ea.
No. 2-21 (2 Terminals)	\$ .44	No. 6-21 (6 Terminals)	\$1.14
No. 3-21 (3 Terminals)	.62	No. 7-21 (7 Terminals)	1.32
No. 4-21 (4 Terminals)	.79	No. 8-21 (8 Terminals)	1.50
No. 5-21 (5 Terminals)	.97	No. 9-21 (9 Terminals)	1.67



### NO. 10 TERMINAL STRIPS

Terminal 1/16" Brass, Tin Plated

Sturdy screw and solder terminal with both screw and solder connections on top of bakelite panel. Solder terminal turned up.

Screw: 6-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/8" thick. Terminals spaced on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 15 B & S gauge wire (.057").

Code	Ea.	Code	Ea.
No. 2-10 (2 Terminals)	\$ .23	No. 6-10 (6 Terminals)	\$ .67
No. 3-10 (3 Terminals)	.34	No. 7-10 (7 Terminals)	.78
No. 4-10 (4 Terminals)	.45	No. 8-10 (8 Terminals)	.89
No. 5-10 (5 Terminals)	.56	No. 9-10 (9 Terminals)	1.00



### NO. 22 TERMINAL STRIPS

Terminal 1/16" Brass, Burnished Nickel Plate

Similar to No. 21, except larger.

Screws: 10-32 x 3/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 1 1/4" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 8 B & S gauge wire (.128").

Code	Ea.	Code	Ea.
No. 2-22 (2 Terminals)	\$ .58	No. 6-22 (6 Terminals)	\$1.46
No. 3-22 (3 Terminals)	.80	No. 7-22 (7 Terminals)	1.68
No. 4-22 (4 Terminals)	1.02	No. 8-22 (8 Terminals)	1.90
No. 5-22 (5 Terminals)	1.24	No. 9-22 (9 Terminals)	2.02



### NO. 11 TERMINAL STRIPS

Terminal 1/16" Brass, Tin Plated

Similar to No. 10, except larger in size and the solder tab is flat, but will be bent up, if specified.

Screws: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/8" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals. Will take up to No. 12 B & S gauge wire (.080").

Code	Ea.	Code	Ea.
No. 2-11 (2 Terminals)	\$ .31	No. 6-11 (6 Terminals)	\$ .79
No. 3-11 (3 Terminals)	.43	No. 7-11 (7 Terminals)	.91
No. 4-11 (4 Terminals)	.55	No. 8-11 (8 Terminals)	1.03
No. 5-11 (5 Terminals)	.67	No. 9-11 (9 Terminals)	1.16



### No. 32 TERMINAL STRIPS

Terminal .050" Brass, Tin Plated

An ideal terminal strip (solder type) for medium heavy wiring. One or more wires may be connected to this terminal.

Insulation: XX Bakelite, 3/4" wide, 1/4" thick. Terminals mounted on 1/4" centers. Mounting holes 1/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-32 (2 Terminals)	\$ .22	No. 6-32 (6 Terminals)	\$ .62
No. 3-32 (3 Terminals)	.32	No. 7-32 (7 Terminals)	.72
No. 4-32 (4 Terminals)	.42	No. 8-32 (8 Terminals)	.81
No. 5-32 (5 Terminals)	.52	No. 9-32 (9 Terminals)	.91



### NO. 34 TERMINAL STRIPS

Terminal .082" Brass, Cadmium Plated

Very substantial and neat appearing terminal. Ample length solder terminal below panel, with screw connection above.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 1/4" wide, 1/8" thick.

Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-34 (2 Terminals)	\$ .22	No. 8-34 (8 Terminals)	\$ .44
No. 3-34 (3 Terminals)	.28	No. 7-34 (7 Terminals)	.50
No. 4-34 (4 Terminals)	.33	No. 8-34 (8 Terminals)	.55
No. 5-34 (5 Terminals)	.39	No. 9-34 (9 Terminals)	.61



### NO. 53 TERMINAL STRIPS

Terminal, Spring Temper Brass, Cadmium Plated

A reliable socket type contact for many uses. Takes 1/8" prongs. May be used with No. 98 terminal strips (same terminal spacing).

Insulation: XP Bakelite, 1/2" wide, 3/8" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-53 (2 Terminals)	\$ .19	No. 6-53 (6 Terminals)	\$ .32
No. 3-53 (3 Terminals)	.22	No. 7-53 (7 Terminals)	.35
No. 4-53 (4 Terminals)	.25	No. 8-53 (8 Terminals)	.39
No. 5-53 (5 Terminals)	.29	No. 9-53 (9 Terminals)	.42



### NO. 36A TERMINAL STRIPS

Terminal .031" Brass, Cadmium Plated

A popular priced screw and solder terminal with both screw and solder tab on same side of bakelite panel.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 1/2" wide, 1/4" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-36A (2 Terminals)	\$ .13	No. 8-36A (8 Terminals)	\$ .31
No. 3-36A (3 Terminals)	.18	No. 7-36A (7 Terminals)	.35
No. 4-36A (4 Terminals)	.22	No. 8-36A (8 Terminals)	.40
No. 5-36A (5 Terminals)	.28	No. 9-36A (9 Terminals)	.44



### NO. 59 TERMINAL STRIPS

Terminal .028" Brass, Tin Plated

An inexpensive solder terminal. One wire may be brought up through hole and soldered, leaving vertical tab for other connection.

Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals mounted on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-59 (2 Terminals)	\$ .08	No. 6-59 (6 Terminals)	\$ .21
No. 3-59 (3 Terminals)	.11	No. 7-59 (7 Terminals)	.24
No. 4-59 (4 Terminals)	.14	No. 8-59 (8 Terminals)	.28
No. 5-59 (5 Terminals)	.13	No. 9-59 (9 Terminals)	.31



### NO. 42 TERMINAL STRIPS

Terminal, Hard Brass, Cadmium Plated

Similar in construction to No. 53. Takes 1/8" prong. May be used with No. 99 terminal strips (same terminal spacing).

Insulation: XP Bakelite, 1/2" wide, 1/4" thick. Terminals mounted on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-42 (2 Terminals)	\$ .22	No. 8-42 (8 Terminals)	\$ .40
No. 3-42 (3 Terminals)	.28	No. 7-42 (7 Terminals)	.44
No. 4-42 (4 Terminals)	.31	No. 8-42 (8 Terminals)	.48
No. 5-42 (5 Terminals)	.35	No. 9-42 (9 Terminals)	.53



### NO. 60 TERMINAL STRIPS

Terminal .050" Brass, Cadmium Plated

Screw terminal above panel—solder terminal below. Solder tab is notched.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-60 (2 Terminals)	\$ .18	No. 6-60 (6 Terminals)	\$ .41
No. 3-60 (3 Terminals)	.24	No. 7-60 (7 Terminals)	.46
No. 4-60 (4 Terminals)	.30	No. 8-60 (8 Terminals)	.52
No. 5-60 (5 Terminals)	.35	No. 9-60 (9 Terminals)	.57



### NO. 43 TERMINAL STRIPS

Terminal, Hard Brass, Cadmium Plated

Same as No. 42, except that it takes 1/8" prongs. May be used with No. 100 terminal strips.

Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-43 (2 Terminals)	\$ .28	No. 8-43 (8 Terminals)	\$ .50
No. 3-43 (3 Terminals)	.33	No. 7-43 (7 Terminals)	.55
No. 4-43 (4 Terminals)	.39	No. 8-43 (8 Terminals)	.61
No. 5-43 (5 Terminals)	.44	No. 9-43 (9 Terminals)	.66



### NO. 66-S TERMINAL STRIPS

Terminal .032" Hard Brass, Cadmium Plated

A heavy solder terminal with large oval hole for several wires.

Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-66-S (2 Terminals)	\$ .09	No. 6-66-S (6 Terminals)	\$ .22
No. 3-66-S (3 Terminals)	.12	No. 7-66-S (7 Terminals)	.25
No. 4-66-S (4 Terminals)	.15	No. 8-66-S (8 Terminals)	.29
No. 5-66-S (5 Terminals)	.19	No. 9-66-S (9 Terminals)	.32



### NO. 48 TERMINAL STRIPS

Terminal .028" Brass, Tin Plated

A low priced double solder terminal.

Insulation: XP Bakelite, 1/2" wide, 1/4" thick. Terminals mounted on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-48 (2 Terminals)	\$ .08	No. 8-48 (8 Terminals)	\$ .21
No. 3-48 (3 Terminals)	.11	No. 7-48 (7 Terminals)	.24
No. 4-48 (4 Terminals)	.14	No. 8-48 (8 Terminals)	.28
No. 5-48 (5 Terminals)	.18	No. 9-48 (9 Terminals)	.31



### NO. 66-D TERMINAL STRIPS

Terminal .032" Hard Brass, Cadmium Plated

Two No. 66 terminals mounted on opposite sides of panel and riveted together by solid rivet. Ideal strip for heavy work.

Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals mounted on 3/4" centers. Mounting holes 3/4" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-66-D (2 Terminals)	\$ .11	No. 6-66-D (6 Terminals)	\$ .29
No. 3-66-D (3 Terminals)	.15	No. 7-66-D (7 Terminals)	.33
No. 4-66-D (4 Terminals)	.20	No. 8-66-D (8 Terminals)	.37
No. 5-66-D (5 Terminals)	.24	No. 9-66-D (9 Terminals)	.42



### NO. 50 TERMINAL STRIPS

Terminal .062" Brass, Cadmium Plated

One of the most popular screw and solder terminals. Made of heavy stock with ears to firmly hold wires under screw.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-50 (2 Terminals)	\$ .21	No. 8-50 (8 Terminals)	\$ .43
No. 3-50 (3 Terminals)	.28	No. 7-50 (7 Terminals)	.48
No. 4-50 (4 Terminals)	.32	No. 8-50 (8 Terminals)	.54
No. 5-50 (5 Terminals)	.37	No. 9-50 (9 Terminals)	.59



### NO. 76 TERMINAL STRIPS

Terminal .028" Brass, Cadmium Plated

Cup shaped top holds wire securely under screw. A compact and good appearing terminal.

Screw: 8-32 x 1/4" brass, binder head, burnished nickel plate. Insulation: XP Bakelite, 3/4" wide, 1/4" thick. Terminals spaced on 1/2" centers. Mounting holes 1/2" from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-76 (2 Terminals)	\$ .15	No. 6-76 (6 Terminals)	\$ .33
No. 3-76 (3 Terminals)	.20	No. 7-76 (7 Terminals)	.37
No. 4-76 (4 Terminals)	.24	No. 8-76 (8 Terminals)	.42
No. 5-76 (5 Terminals)	.29	No. 9-76 (9 Terminals)	.48



**AG-76**

**AG-76**

Standard Antenna-Ground strip using No. 76 terminals. Insulation: XP Bakelite,  $\frac{1}{4}$ " wide. Mounting centers  $1\frac{1}{2}$ ". Ends rounded. Letters A and G are filled in white.

No. AG-76 ..... Ea. \$ .13



**NO. 96 TERMINAL STRIPS**

Terminal, Spring Temper Brass, Cadmium Plated

Perhaps the most popular socket terminal ever sold. Takes standard tube prongs (No. 99 or No. 100). Furnished for No. 99 prongs ( $\frac{1}{16}$ " unless otherwise specified). Insulation: XP Bakelite,  $\frac{3}{8}$ " wide,  $\frac{1}{8}$ " thick. Terminals mounted on  $\frac{1}{4}$ " centers. Mounting holes  $\frac{1}{8}$ " from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-96 (2 Terminals)	\$ .09	No. 6-96 (6 Terminals)	\$ .22
No. 3-96 (3 Terminals)	.12	No. 7-96 (7 Terminals)	.25
No. 4-96 (4 Terminals)	.15	No. 8-96 (8 Terminals)	.29
No. 5-96 (5 Terminals)	.19	No. 9-96 (9 Terminals)	.32



**NO. 98 TERMINAL STRIPS**

Terminal  $3/32$ " Round, Brass, Cadmium Plated

Standard tube base prong of  $\frac{1}{8}$ " diameter. To be used with No. 53 terminal strips. Insulation: XP Bakelite,  $\frac{1}{2}$ " wide,  $\frac{3}{8}$ " thick. Terminals mounted on  $\frac{3}{8}$ " centers.

Code	Ea.	Code	Ea.
No. 2-98 (2 Terminals)	\$ .08	No. 6-98 (6 Terminals)	\$ .21
No. 3-98 (3 Terminals)	.11	No. 7-98 (7 Terminals)	.24
No. 4-98 (4 Terminals)	.14	No. 8-98 (8 Terminals)	.28
No. 5-98 (5 Terminals)	.18	No. 9-98 (9 Terminals)	.31



**NO. 99 TERMINAL STRIPS**

Terminal  $1/8$ " Round, Brass, Cadmium Plated

Similar to No. 98, except that it is  $1/8$ " in diameter. To be used with No. 42 terminal strips, and also with No. 96 terminal strips. Insulation: XP Bakelite,  $1/2$ " wide,  $1/4$ " thick. Terminals mounted on  $1/2$ " centers.

Code	Ea.	Code	Ea.
No. 2-99 (2 Terminals)	\$ .11	No. 6-99 (6 Terminals)	\$ .29
No. 3-99 (3 Terminals)	.15	No. 7-99 (7 Terminals)	.33
No. 4-99 (4 Terminals)	.20	No. 8-99 (8 Terminals)	.37
No. 5-99 (5 Terminals)	.24	No. 9-99 (9 Terminals)	.42



**NO. 100 TERMINAL STRIPS**

Terminal  $5/32$ " Round, Brass, Cadmium Plated

Similar to No. 99, except  $1/8$ " in diameter. To be used with No. 43 terminal strip, and No. 96 terminal strip. Insulation: XP Bakelite,  $5/8$ " wide,  $1/4$ " thick. Terminals mounted on  $3/4$ " centers.

Code	Ea.	Code	Ea.
No. 2-100 (2 Terminals)	\$ .17	No. 6-100 (6 Terminals)	\$ .40
No. 3-100 (3 Terminals)	.23	No. 7-100 (7 Terminals)	.45
No. 4-100 (4 Terminals)	.29	No. 8-100 (8 Terminals)	.51
No. 5-100 (5 Terminals)	.34	No. 9-100 (9 Terminals)	.56



**NO. 130 TERMINAL STRIPS**

Terminals Brass, Burnished Nickel Plate

An inexpensive terminal strip with two screw terminals. Screws:  $5-40 \times \frac{1}{4}$ " brass, binder head, burnished nickel plate. Insulation: XP Bakelite,  $3/8$ " wide,  $1/8$ " thick. Terminals mounted on  $1/2$ " centers. Mounting holes  $1/2$ " from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-130 (2 Terminals)	\$ .17	No. 6-130 (6 Terminals)	\$ .52
No. 3-130 (3 Terminals)	.25	No. 7-130 (7 Terminals)	.61
No. 4-130 (4 Terminals)	.34	No. 8-130 (8 Terminals)	.69
No. 5-130 (5 Terminals)	.43	No. 9-130 (9 Terminals)	.78



**NO. 131 TERMINAL STRIPS**

Terminals Brass, Burnished Nickel Plate

Similar to No. 130, except larger. Screws:  $6-32 \times \frac{1}{4}$ " brass, binder head, burnished nickel plate. Insulation: XP Bakelite,  $1$ " wide,  $1/4$ " thick. Terminals mounted on  $3/4$ " centers. Mounting holes  $1/2$ " from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-131 (2 Terminals)	\$ .21	No. 6-131 (6 Terminals)	\$ .81
No. 3-131 (3 Terminals)	.31	No. 7-131 (7 Terminals)	.70
No. 4-131 (4 Terminals)	.41	No. 8-131 (8 Terminals)	.80
No. 5-131 (5 Terminals)	.51	No. 9-131 (9 Terminals)	.80



**NO. 132 TERMINAL STRIPS**

Terminals Brass, Burnished Nickel Plate

Similar to No. 131, except larger. Screws:  $8-32 \times \frac{1}{4}$ " brass, binder head, burnished nickel plate. Insulation: XP Bakelite,  $1\frac{1}{4}$ " wide,  $1/4$ " thick. Terminals mounted on  $3/4$ " centers. Mounting holes  $3/4$ " from center of end terminals.

Code	Ea.	Code	Ea.
No. 2-132 (2 Terminals)	\$ .25	No. 6-132 (6 Terminals)	\$ .89
No. 3-132 (3 Terminals)	.36	No. 7-132 (7 Terminals)	.80
No. 4-132 (4 Terminals)	.47	No. 8-132 (8 Terminals)	.91
No. 5-132 (5 Terminals)	.58	No. 9-132 (9 Terminals)	1.02



**No. 143 TERMINAL STRIPS**

Terminal .040" Brass, Tin Plated

A strong two-way solder terminal. Solder tabs lie flat. Crimps securely around edges of panel.

**Special Strips**

These strips can be made up special, with terminals mounted on any centers, from  $3/8$ " up.

**Standard Strips**

Insulation: XP Bakelite,  $3/8$ " wide,  $1/8$ " thick. Terminals mounted on  $1/4$ " centers. Mounting holes  $1/2$ " from center of end terminals. Terminals may be numbered or lettered in white, as illustrated. (See page 18 for imprinting cost.)

Code	Ea.	Code	Ea.
No. 2-143 (2 Terminals)	\$ .11	No. 6-143 (6 Terminals)	\$ .24
No. 3-143 (3 Terminals)	.14	No. 7-143 (7 Terminals)	.28
No. 4-143 (4 Terminals)	.18	No. 8-143 (8 Terminals)	.31
No. 5-143 (5 Terminals)	.21	No. 9-143 (9 Terminals)	.34

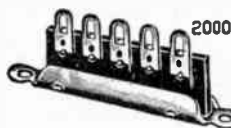


**NO. 170 TERMINAL STRIPS**

Terminal .032" Brass, Tin Plated

A heavy solder terminal. Insulation: Black molded Bakelite,  $1/2$ " wide,  $1/4$ " thick. Terminals mounted on  $3/8$ " centers. Mounting holes are  $3/8$ " from center of end terminals.

Code	Ea.	Code	Ea.
No. 1-170 (1 Terminal)	\$ .18	No. 6-170 (6 Terminals)	\$ .40
No. 2-170 (2 Terminals)	.22	No. 7-170 (7 Terminals)	.44
No. 3-170 (3 Terminals)	.26	No. 8-170 (8 Terminals)	.48
No. 4-170 (4 Terminals)	.31	No. 9-170 (9 Terminals)	.53
No. 5-170 (5 Terminals)	.35	No. 10-170 (10 Terminals)	.57



**NO. 2000 TERMINAL STRIPS**

Terminals .019" Brass, Tin Plated

Compact and sturdy junction terminal strip. Useful in assembling radio chassis, wiring, etc. Insulation: Bakelite. Brackets: Steel, cadmium plated. Terminals spaced on  $1/8$ " centers.

Code	Mounting Hole Centers:	Per 100
No. 2002 (2 Terminals)	1"	\$ 7.04
No. 2003 (3 Terminals)	1-5/16"	7.70
No. 2004 (4 Terminals)	1-5/8"	8.36
No. 2005 (5 Terminals)	1-15/16"	9.02
No. 2006 (6 Terminals)	2-1/4"	9.68
No. 2007 (7 Terminals)	2-9/16"	10.34
No. 2008 (8 Terminals)	2-7/8"	11.00
No. 2009 (9 Terminals)	3-3/16"	11.66
No. 2010 (10 Terminals)	3-1/2"	12.32
No. 2011 (11 Terminals)	3-13/16"	12.98
No. 2012 (12 Terminals)	4-1/8"	13.64
No. 2013 (13 Terminals)	4-7/16"	14.30

# CINCH-JONES SALES ★

## CINCH SOCKETS ARE STANDARD

### MOLDED OCTAL 1-5/16" MOUNTING CENTERS



Molded from high dielectric black bakelite or mica-filled low loss bakelite. Solder coated brass contacts and sturdy steel press-on type saddle with 4 ground lugs. Mounts in 1" chassis hole.

No.	Description	List Price
8AB	Black	Each \$ .14
8AM	Mica-Filled	Each .20

### MOLDED OCTAL 1 1/2" MOUNTING CENTERS



Same as 8A series molded octal above except has cinch-on type saddle with 4 ground lugs and mounts in 1 1/2" chassis hole. Available in black, mica-filled bakelite, or ceramic.

No.	Description	List Price
8EB	Black	Each \$ .14
8EM	Mica-Filled	Each .20
8EC	Ceramic	Each .46

### MOLDED LOKTAL



Steel mounting saddle with solder coated brass contacts and center guide clip with locking spring. 1 1/2" mounting centers. Molded from high dielectric black bakelite or mica-filled low loss bakelite. Mounts in 1" chassis hole.

No.	Description	List Price
8LB	Black	Each \$ .20
8LM	Mica-Filled	Each .26

### CHASSIS CLINCH OCTAL AND LOKTAL



Designed to save valuable chassis space. Mounted in specially punched 1" chassis holes, and are rigidly fastened by lugs sheared from the chassis. No mounting plate or ring required. Molded from high dielectric black bakelite. Solder coated brass contacts and center guide clip.

No.	Description	List Price
8CC	Octal	Each \$ .12
8CCL	Loktal	Each .16



### RING MOUNT OCTAL

Molded from high dielectric black bakelite. Solder coated brass contacts. Used extensively on test equipment, public address amplifiers and on other apparatus where sockets are exposed. Molded keyway in side engages key in chassis hole, preventing socket from turning. Mounts in 1 1/4" chassis hole. Crimped retainer ring is furnished with these sockets.

No.	Description	List Price
8R1	For 3/8" thick chassis	Each \$ .17
8R2	For 1/4" thick chassis	Each .17



### MOLDED LOKTAL

Has same characteristics as molded loktal shown in left column, except saddle has 4 ground lugs.

No.	Description	List Price
8LB1	Black	Each \$ .20
8LM1	Mica-Filled	Each .26

### WAFER LOKTAL 1-5/16" MOUNTING CENTERS



Laminated bakelite socket. Sturdy and positive grip solder coated contacts and center guide clip with locking spring. Mounts in 1 1/8" chassis hole.

Has two .136 diameter mounting holes.

No.	List Price
8LWS	Each \$ .15



### GLASS TUBE SOCKETS

Laminated bakelite sockets with solder coated positive grip brass contacts. 1 1/2" mounting centers. .140 diameter mounting holes. Designed to fit four, five and seven prong tubes.

No.	Description	List Price
4WX	4 Prong	Each \$ .12
5WY	5 Prong	Each .13
6WZ	6 Prong	Each .14
7WU	7 Prong	Each .14
7WA	7 Prong (Large)	Each .14

### WAFER LOKTAL 1 1/2" MOUNTING CENTERS



Laminated bakelite socket. Solder coated brass contacts and center guide clip with locking spring. Mounts in 1 1/4" diameter chassis hole. Two .136 diameter mounting holes.

No.	List Price
8LWL	Each \$ .15



### WAFER OCTAL

Laminated bakelite sockets with solder coated brass positive grip contacts. Designed to fit all standard eight prong tubes. Available with 1 1/8" or 1 1/2" mounting centers. Both styles have .136 diameter mounting holes.

No.	Description	List Price
8W1	1 1/8" Mounting Centers	Each \$ .14
8W2	1 1/2" Mounting Centers	Each .14

## CINCH CAPACITOR "PLUG-IN" SOCKETS

Motion picture, telephone, airborne radio, broadcasting equipment, electric organs, and other electrical equipment need instant replacement when failures in electronic circuits occur at the capacitor connections. Cinch "Know How" has solved this problem.



SMALL

Designed for use with Mallory and Magnavox 1" FP type condensers. Molded from high dielectric black bakelite. Sturdy steel mounting saddle has 4 ground lugs. 1 1/2" mounting centers. 3 recessed center contacts for extended prongs of condenser and two outer contacts flush with surface for short prongs of condenser. All contacts are solder coated for fast, easy soldering.

No.	List Price
2CS	Each \$ .50



LARGE

Designed for use with Mallory and Magnavox 1 1/8" FP type condensers. Molded from high dielectric black bakelite. Sturdy steel saddle has 1 1/2" mounting centers. Four recessed center contacts for extended prongs of condenser and three outer contacts flush with surface for short prongs of condenser. All contacts are solder coated.

No.	List Price
2C7	Each \$ .62

## CRYSTAL SOCKETS



### 2 PRONG 31/64" CENTERS

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Silver plated beryllium copper contacts on 31/64" centers. .120" diameter recessed mounting hole. Socket body is 3/16" long, 1/8" thick, and 3/16" high. For use with FT243 type crystal.

No.	Description	List Price
2KB	Black	Each \$ .30
2KM	Mica-Filled	Each .34



### 4 PRONG

Molded from mica-filled low loss bakelite. Silver plated beryllium copper contacts on 1/4" centers. .140 diameter mounting hole recessed 1/8" from surface in 1/4" diameter hole. Socket body is 3/16" long, 1/8" wide, and 1/8" high. Designed for use with two No. FT243 type crystals.

No.	List Price
2K4	Each \$ .40



### 2 PRONG 1/2" CENTERS

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Silver plated phosphor bronze contacts on 1/2" centers. No. 4-40 tap mounting hole. 1 1/2" long, 3/8" wide and 1/8" high. For No. CR-1 and CR-7 type crystals.

No.	Description	List Price
2KIB	Black	Each \$ .40
2KIM	Mica-Filled	Each .45



# CINCH-JONES SALES ★

## 7 PIN MINIATURE SOCKETS AND SHIELDS



### MOLDED SADDLE TYPE Bottom Mount

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Cadmium plated steel saddle with  $\frac{7}{8}$ " mounting centers. .093 diameter mounting holes. Solder coated positive grip brass contacts. Designed for mounting through bottom of chassis in  $\frac{3}{8}$ " diameter hole. For use with all standard seven pin miniature tubes.

No.	Description	List Price
7EB	Black	Each \$ .23
7EM	Mica-Filled	Each .28



### WAFER TYPE $\frac{7}{8}$ " Mounting Centers

Laminations consists of  $\frac{1}{8}$ " top plate and  $\frac{1}{8}$ " bottom plate from high grade chocolate XP bakelite. .095 diameter mounting holes. Solder coated brass contacts. Available with or without solder center shield and ground strap.

No.	Description	List Price
7W1	With center shield & ground strap	Each \$ .21
7W2	With center shield only	Each .19
7W3	Without center shield & ground strap	Each .19
7W4	Same as 7W1 except has two (2) $\frac{1}{8}$ " Top Plates	Each .23



### TUBE SHIELD AND BASE Snap-On Type

Shield fits over and outside of retaining spring. Indentation on shield locks into ridge on base. Spring steel shield is  $1\frac{1}{4}$ " long. Base is made of hardened carbon steel supplying adequate spring resiliency on shield. Base has  $\frac{7}{8}$ " mounting centers with mounting holes that coincide with those for miniature 7 pin sockets as established by R.M.A. standards. For use with saddle type and wafer sockets with  $\frac{7}{8}$ " mounting centers illustrated on this page.

No.	List Price
7S1	Each \$ .18



### TUBE SHIELDS "J" Slot Type

Durable steel shields complete with tube securing spring. "J" slot feature designed to fit securely with Cinch shield base type sockets, such as 7X series shown in next column. Also fit 7SB type shield bases shown below. Available in three lengths:

No.	Description	List Price
7S2	$1\frac{1}{8}$ " Long	Each \$ .13
7S3	$1\frac{1}{2}$ " Long	Each .17
7S4	$2\frac{1}{4}$ " Long	Each .25

### SHIELD BASES FOR ABOVE SHIELDS



Durable steel shield bases designed for use with "J" slot type shields illustrated above. Available in two sizes:  $\frac{7}{8}$ " high or  $\frac{3}{4}$ " high. Both types have  $\frac{7}{8}$ " mounting centers.

No.	Description	List Price
7SB	$\frac{7}{8}$ " High	Each \$ .11
7SB1	$\frac{3}{4}$ " High	Each .17



### MOLDED SADDLE TYPE Top Mount

Molded from high dielectric black bakelite, mica-filled low loss bakelite, or ceramic material. Cadmium plated steel saddle with  $\frac{7}{8}$ " mounting centers and .093 diameter mounting holes. Solder coated brass contacts. Designed for mounting through top of chassis in  $\frac{3}{8}$ " diameter hole. Will securely hold all standard seven pin miniature tubes.

No.	Description	List Price
7AB	Black	Each \$ .22
7AM	Mica-Filled	Each .28
7AC	Ceramic	Each .50



### RING MOUNT TYPE

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Solder coated brass contacts and center shield. Mounts in  $\frac{3}{4}$ " diameter round or "D" shaped hole. Complete with retainer ring.

No.	Description	List Price
7RB	Black	Each \$ .21
7RM	Mica-Filled	Each .27



### CHASSIS CLINCH TYPE

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Designed to save valuable chassis space. Mounted in specially punched  $\frac{3}{8}$ " chassis hole and are rigidly fastened by lugs sheared from the chassis. No mounting plate or ring is required.

No.	Description	List Price
7CCB	Black	Each \$ .19
7CCM	Mica-Filled Bakelite	Each .24



### SHIELD BASE TYPE

Shield base is attached to socket body for mounting through top of chassis. Molded from high dielectric black bakelite, mica-filled low loss bakelite or ceramic material. Solder coated brass contacts and center shield. Cadmium plated steel shield base with  $\frac{7}{8}$ " mounting centers. Use No. 7S2, 7S3, or 7S4 shields illustrated to left with these sockets.

No.	Description	List Price
7XB	Black	Each \$ .40
7XM	Mica-Filled Bakelite	Each .45
7XC	Ceramic	Each .85



### WAFER TYPE with 1" & 1-5/16" Mtg. Centers

Newly developed 7 pin miniatures to replace octal sockets for auto radios, television, and other sets. Newly designed contacts will hold tube firmly in place without using a tube shield despite constant vibration. Same pin circle as standard 7 pin miniature sockets with  $\frac{7}{8}$ " mounting centers for all standard 7 pin miniature tubes. Available with or without center guide pin and ground strap.

1" Mounting Centers		
No.	Description	List Price
7WL1	With center pin and ground strap	Each \$ .17
7WL2	With center pin only	Each .16
7WL3	Without center pin or ground strap	Each .15
1-5/16" Mounting Centers		
7WL4	With center pin	Each .17
7WL5	Without center pin	Each .18

## 9 PIN MINIATURE SOCKETS AND SHIELDS

### MOLDED — SADDLE TYPE Bottom Mount



Molded from high dielectric black bakelite or mica-filled low loss bakelite. Designed for mounting through bottom of chassis in  $\frac{3}{4}$ " diameter hole.  $1\frac{1}{2}$ " mounting centers with .093 diameter mounting holes. Solder coated brass contacts and center shield.

No.	Description	List Price
9EB	Black	Each \$ .33
9EM	Mica-Filled Bakelite	Each .38



### SHIELD BASE

Durable steel shield base designed for use with shields illustrated to right.  $1\frac{1}{2}$ " mounting centers. May be used with any 9 pin wafer or saddle type sockets shown in right column.

No.	List Price
9SB	Each \$ .22



### TUBE SHIELDS

Made from durable steel. Complete with tube securing spring. "J" slot feature designed to fit securely with Cinch 9X series shield base type sockets illustrated to the right. Will also fit No. 9SB shield base shown at left. Available in three lengths.

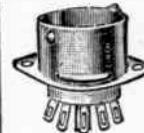
No.	Description	List Price
9S1	$1\frac{1}{2}$ " Long	Each \$ .26
9S2	$1\frac{1}{8}$ " Long	Each .28
9S3	$2\frac{3}{8}$ " Long	Each .38



### MOLDED—SADDLE TYPE Top Mount

Molded from high dielectric black bakelite or mica-filled low loss bakelite. Designed for mounting through top of chassis in  $\frac{3}{4}$ " diameter hole.  $1\frac{1}{2}$ " mounting centers with .093 diameter mounting holes. Solder coated brass contacts and center shield.

No.	Description	List Price
9AB	Black	Each \$ .33
9AM	Mica-Filled	Each .38



### SHIELD BASE TYPE

Molded from high dielectric black bakelite, mica-filled low loss bakelite, or ceramic material. One-piece cadmium plated steel shield base and saddle with .093 diameter mounting holes on  $1\frac{1}{2}$ " centers. Solder coated brass contacts and center shield. Mounts through top of chassis in  $\frac{3}{4}$ " diameter hole. Use Cinch 9S type shields with these sockets.

No.	Description	List Price
9XB	Black	Each \$ .57
9XM	Mica	Each .62
9XC	Ceramic	Each .87



### WAFER TYPE

Has two laminations consisting of  $\frac{1}{8}$ " top plate and  $\frac{1}{8}$ " bottom plate made from  $1\frac{1}{2}$ " mounting centers with .093 diameter holes. Solder coated brass contacts and center shield.

No.	List Price
9W	Each \$ .30

# CINCH-JONES SALES ★

## CINCH SOCKETS ARE STANDARD FOR TELEVISION!

Television is growing by leaps and bounds. To meet the increasing demand Cinch "Know How" has engineered and perfected Magnal, Duodecal, and Diheptal sockets for cathode ray and television tubes. Other television products illustrated on this page include second anode connectors and Corona insulating shields.



### MAGNAL—11 PRONG

Molded from mica-filled low loss bakelite. Socket is 1 3/4" wide and 1 1/4" high. Full floating silver plated beryllium copper contacts designed to insure easy insertion of tubes and yet provided excellent electrical connections. For use with 5BP1 and 2AP1 type cathode ray tubes.

No.	Description	List Price
3M11	Mica Socket	Each \$6.00
3R11	Steel Mounting Ring	Each .42



### DIHEPTAL 14 PRONG

Molded from high dielectric black bakelite or mica-filled low loss bakelite. 2 3/4" wide and 1 1/8" high. Possesses same features as Cinch Magnal socket shown above.

No.	Description	List Price
3B14	Black Socket	Each \$2.00
3M14	Mica Socket	Each .250
3R14	Steel Mounting Ring	Each .42



### CORONA SHIELDS

Specifically designed for Television and high voltage wiring. These cadmium plated brass shields will provide excellent protection at proper positions in electrical connections. Outside diameter .470. Hole diameter .136. Thickness .172.

No.	List Price
3C1	Per C \$2.75



### 110-250 VOLT SOCKET (Underwriters Listed)

When space is at a premium use this 110-250 volt 2 prong socket. Rated at 15 Amp., 110 V. or 10 Amp., 250 V. Molded from high dielectric black bakelite. Solder coated brass contacts on 1/2" centers designed to accept any 2 prong standard electric plug. Mounts in 1 1/4" x 3/8" hole. .144 diameter mounting holes on 1/8" centers. Ideal for radio chassis and many other applications.

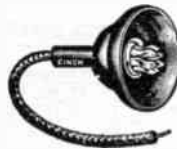
No.	List Price
2R2	Each \$ .23



### DUODECAL—12 PRONG

No larger in diameter than the tube base and only slightly longer than the tube pin. A new feature incorporates wire strain relief as an integral part of the contact. Molded from high dielectric black bakelite. For use with 10BP4, 2BP1, STP4, etc., type tubes.

No.	List Price
3B12	Each \$ .80



### SECOND ANODE CONNECTORS

For television tubes—Silver plated snap button type plug well insulated by 1 1/2" diameter rubber protective cap. Snaps into opening on side of tube. Available in three lengths wire leads.

No.	Description	List Price
3A2	12" Wire Lead	Each \$ .90
3A3	15" Wire Lead	Each 1.05
3A4	18" Wire Lead	Each 1.25



### SECOND ANODE CONNECTOR

For diheptal based tubes. Cadmium plated brass contact surrounded by rubber insulator 3/4" wide and 1 1/4" long. Snaps over .096 diameter prong on side of diheptal tubes.

No.	List Price
3A1	Each \$ .75



### SUB-MINIATURE HEARING AID SOCKETS

Used extensively for hearing aids, radio controlled model airplanes and numerous other applications which require sub-miniature tubes. Molded from mica-filled low loss bakelite with silver plated beryllium copper contacts. For Raytheon type CK series sub-miniature tubes. Available with 5, 6, or 7 contacts. Four prong tubes use No. 2H5 five prong socket.

No.	Description	List Price
2H5	5 Prong	Each \$ .37
2H6	6 Prong	Each .33
2H7	7 Prong	Each .41

## CONNECTOR PLUGS AND SOCKETS



18G



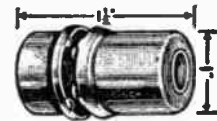
6K2



5K2



18E



Assembled

These low cost plugs and sockets are ideal for a multitude of applications. A "Cinch" where space is at a premium. Complete assembly of plug, socket, male and female shell will close to a compact unit of 1 1/2" long. Polarized—Nickel plated brass tube pins—Solder coated brass contacts. Plugs, sockets and shells have lock feature which prevents turning in shells.

### PLUGS

Part No.	No. Prongs	Use Skt. No.	Use Shell No.	List Price
5K2	2	6K2	18E	.07 ea.
5K3	3	6K3	18E	.08 ea.
5K4	4	6K4	18E	.09 ea.
5K5	5	6K5	18E	.10 ea.
5K6	6	6K6	18F	.12 ea.

### SOCKETS

Part No.	No. Contacts	Use Plug No.	Use Shell No.	List Price
6K2	2	5K2	18G	.06 ea.
6K3	3	5K3	18G	.07 ea.
6K4	4	5K4	18G	.08 ea.
6K5	5	5K5	18G	.09 ea.
6K6	6	5K6	18H	.10 ea.

# CINCH-JONES SALES ★

## CINCH BATTERY PLUGS

Cinch manufactures a complete line of dependable plugs to fit all types of batteries. Made with nickel plated brass tube pins mounted on high grade chocolate bakelite. The chart below indicates the correct plug for most popular batteries. In addition to the battery plugs illustrated in this catalogue, Cinch manufactures a complete line of wafer plugs for radio chassis, speakers, and numerous other electrical applications. Send us a sample or sketch of the plug you may require.



SAB1



6K4



SAB2



SAB3



SAB4



SAB5



SAB6



SAB7



SAB8



SA1



SA2



SA3



SA4



SA5



SB1



SB2



SM



SF



SMFA



SC1



SC2

THIS REFERENCE CHART WILL ASSIST YOU IN SELECTING THE CORRECT PLUG FOR POPULAR BATTERIES

Part Number	Voltage	For Burgess No.	For Eveready No.	For R.C.A. No.	For Philco No.	For Ray-O-Vac No.	List Price
SA1	1½ "A"	4F, 4FL, 6F, 8F, 8FL, TE	741, 742, 743, 1052P	VS004, VS005, VS007, VS008	P94, P96, P8F1	P84A, P84L, PX, P86A, P88A, P88L	Ea. \$ .05
SA2	3 "A"	20F2	X125	VS025	P8024	P8403	Ea. .08
SA3	4½ "A"	G-3	748	VS002	P100	P-83A	Ea. .05
SA4	6 "A"	2F4, 2F5L, F3PL, T5	A509, 71J, 744, 747	VS008, VS010, VS011	P4F4R	P884A, P886L, P898A, P898L	Ea. .05
SA5	7½ "A"	G-5	887	VS003		P85A	Ea. .08
SB1	45 "B" Small	A30, B3J, M30, Z5J	482, 78J, 782	VS012, VS013, VS014, VS015	P210, P305	430P, P7830, P5303	Ea. .06
SB2	45 "B" Large	A30, B3J, M30, Z5J	482, 78J, 782	VS012, VS013, VS014, VS015	P210, P305	430P, P7830, P5303	Ea. .07
SM	67½ "L"	XX30, XX45	455, 4C7	VS016, VS056		P4387	Per C 4.00
SF	67½ "L"	XX30, XX45	455, 4C7	VS016, VS056		P4387	Per C 5.00
SMFA	67½ "L"	XX30, XX45	455, 4C7	VS016, VS056		P4387	Ea. .27
SC1	4½ "C"	2370P1	X771	VS030	P3D	P231W	Ea. .09
SC2	22½ "C"	5156H1	768	VS031	P15B5	P5151	Ea. .10
SAB1	1½ "A"-90 "D"	17GD80, 5D4L0, CTA80	750	VS022, VS023	FG0D11L	AB82, 10793	Ea. .09
6K4	9 "A"-90 "L"	GB880	752	VS047			Ea. .08
SAB2	1½ "A"-83-90 "D"	LA300, 4GKA1, 4CA42		VS027	P60A-4L, P41A4G	AB419	Ea. .07
SAB3	6 "A"-90 "B"	2F4ACJ		VS044	P60A8F4	AB694	Ea. .08
SAB4	6 "A"-90 "L"	F1B60		VS040			Ea. .12
SAB5	6 "A"-90 "D"	D4A80, 2F4B6J, F4A41		VS046	P41AFL	10896, AB848	Ea. .09
SAB6	7½ "A"-90 "D"	G5A42, F5A60		VS038	P87, P841	AB794	Ea. .10
SAB7	9 "A"-90 "B"	F8A80, G8M80	753, 754	VS018, VS019	P841A	AB878, AB994	Ea. .12
SAB8	9 "A"-90 "B"	4FA60					Ea. .10

### LAMINATED SOCKETS

Cinch also manufactures a complete line of wafer sockets, round or rectangular, for a variety of applications; for batteries, speakers, and various other radio connections. Let us know your requirements.



## PLUG CAPS AND SHELLS

For above Battery Plugs and for Connector Plugs and Sockets on page T-31.



No. 16A

Cadmium plated brass shell with rolled edge on ¼" diameter neck opening. Outside diameter at base .625. Four 1/8" prongs coincide with notches on plugs. Designed for use with Cinch No. SA1, SB1, SAB2, and SAB3 type battery plugs.

List Price  
Each \$ .03



No. 18C

Brass shell with black nickel finish. ¼" hole on top. Complete with fibre insulator. For use with Cinch No. SAB1, SAB2, and SAB3 type battery plugs.

List Price  
Each \$ .05

No. 18D

No. 18D

Part No. 18C same as 18C except has 3/16" diameter hole drilled between center hole and outside edge.

List Price  
Each \$ .03



No. 18B

No. 18B

Cadmium plated brass shell with 3/16" diameter opening on top of shell. Outside diameter at base .625. Four 1/8" prongs coincide with notches on plugs. 1/2" high. Designed for use with Cinch No. SA1, SB1, SAB2, and SAB3 type battery plugs.

List Price  
Each \$ .04



No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

Cadmium plated brass shells complete with fibre insulator. Available with 3/8" or 1/2" diameter hole with rolled edge. Inside diameter 3/16", 1/2" high. For use with Cinch No. SC1, SC2, SAB6, SAB7, SAB8, 5K2, 5K3, 5K4, 5K5, and 5K6 type plugs.

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

No. 19E

List Price  
Each \$ .07

List Price  
Each .07



No. 18G

No. 18H

Cadmium plated steel shells complete with fibre insulator. Available with 3/8" or 1/2" diameter hole with rolled edge. Inside diameter 3/16", 3/8" high. For use with Cinch No. 6K2, 6K3, 6K4, 6K5, and 6K6 type sockets.

List Price  
Each \$ .03

List Price  
Each .03



No. 18B

No. 18B

Cadmium plated brass shell complete with fibre insulator. Same as Cinch No. 18B shell except has 1/2" neck with 3/8" hole riveted to base. For use with same plugs as No. 18B.

List Price  
Each \$ .10



No. 18B

No. 18B

No. 18B

No. 18B

No. 18B

No. 18B

List Price  
Each \$ .07

List Price  
Each \$ .10

# CINCH-JONES SALES ★

## PIN PLUGS — JACKS — CONNECTORS — STRIPS — TERMINALS



### PHONO PLUGS

R.C.A. type. For a multitude of applications: record players, auto radios, receivers, recording and reproducing equipment, experimental units, etc. Nickel plated  $\frac{1}{8}$ " diameter tube pin. Available in two lengths:  $\frac{3}{4}$ " and  $1\frac{1}{8}$ ". Use No. 13A with type 81A and 81B phono jacks. Use No. 13E with type 81E extension jack.

No.	Description	List Price
13A	$\frac{3}{4}$ " Pin	Each \$ .08
13E	$1\frac{1}{8}$ " Pin	Each .08

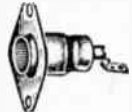
### SINGLE PHONO JACK



Precision engineered for many uses, such as: R.C.A. type recording units, receivers, and auto sets. Single prong positive grip phono jack mounted on  $\frac{1}{8}$ " chocolate bakelite disc with  $\frac{1}{8}$ " mounting centers Use Cinch No. 13A phono plug with this jack.

No.	List Price
81A	Each \$ .12

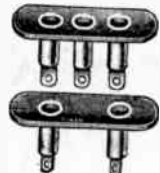
### ANTENNA CONNECTOR



Flange Type Motorola type shielded jack. Sturdy steel flange with  $\frac{1}{8}$ " mtg. centers with .136 dia. mtg. holes. Solder coated shell, flange and contact. Can be mounted with screws or rivets. Used extensively on auto radios. Use Cinch No. 13B antenna plug with this jack.

No.	List Price
81F	Each \$ .18

### PHONO TIP JACKS



Double and triple tip jacks for speakers, headphones, etc.  $\frac{1}{8}$ " dia. mounting holes on  $1\frac{1}{8}$ " centers. Nickel plated. Brass shells are  $\frac{1}{8}$ " long. Solder coated contact  $\frac{3}{8}$ " long. Contacts for double jack are on  $\frac{7}{8}$ " centers. Triple jack contacts on  $\frac{7}{8}$ " centers. Mounted on  $\frac{1}{8}$ " chocolate XP grade bakelite.

No.	Description	List Price
81D	Double	Each \$ .13
81T	Triple	Each .25



### ANTENNA PLUG

Motorola type. Nickel plated  $\frac{1}{8}$ " tube pin extends  $\frac{1}{2}$ " from cadmium plated split brass shell whose 8 cutting edges provide positive grounded connection when inserted into a Cinch No. 81C or 81F connector.

No.	List Price
13B	Each \$ .12

### ANTENNA CONNECTOR



Shell Type Same as No. 81F on right except without flange.

This connector may be soldered in position. Use Cinch No. 13B antenna plug with this jack.

No.	List Price
81C	Each \$ .12



### ADAPTER SHELL

Converts Motorola pin plug to Delco bayonet type receptacle. Cadmium plated brass shell  $1\frac{1}{8}$ " long. Use with No. 13B Antenna plug.

No.	List Price
81K	Each \$ .14



### INSULATED PIN PLUG

Nickel plated  $\frac{1}{8}$ " brass tube pin  $\frac{1}{8}$ " long, assembled to  $\frac{1}{8}$ " long fibre insulator. May be used with Cinch No. 81A and 81B type phono jacks or with No. 49 series contact strips illustrated in right column.

No.	List Price
13C	Each \$ .09



### STAND-OFF TERMINALS

Insulated terminals for television and other high voltage electronic equipment. Provides excellent insulation for passing high voltages with through chassis. Molded from mica-filled low loss bakelite. Available in two lengths:  $\frac{3}{8}$ " or  $\frac{1}{2}$ ". Diameter of cylinder is .110. Mounts in  $\frac{1}{8}$ " dia. hole. Actual size illustration of No. 16L.

No.	Description	List Price
16S	$\frac{3}{8}$ "	Each \$ .75
16L	$\frac{1}{2}$ "	Each .75



### SHIELDED EXTENSION JACK

Cadmium plated brass shell  $2\frac{1}{8}$ " long with black bakelite insert providing insulation for solder coated brass positive grip contact. Use Cinch No. 13E Phono plug with this jack.

No.	List Price
81E	Each \$ .25



### DOUBLE PHONO JACK

Two positive grip phono jacks mounted on  $\frac{1}{8}$ " bakelite panel with  $1\frac{1}{8}$ " mounting centers. Jacks are spaced on  $\frac{1}{2}$ " centers. Panel is  $1\frac{1}{2}$ " x  $\frac{1}{2}$ ". Used on recording units, receivers, etc. Use Cinch No. 13A phono plug with this jack.

No.	List Price
81B	Each \$ 16

### SCREW TYPE TERMINAL STRIPS

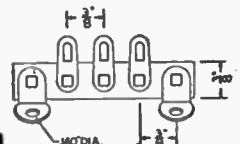


Ideal for chassis or breadboard layouts. Solder coated brass terminals. .136 diameter mounting holes. Strips with 1 to 6 lugs are of  $\frac{1}{8}$ " bakelite; 7 to 10 terminals mounted on  $\frac{1}{8}$ " bakelite. Ends of screws are captivated to prevent removal. Terminals are spaced on  $\frac{1}{8}$ " centers.

No.	Lugs	Mounting Centers	List Price
17-1	1	$\frac{1}{8}$ "	Each \$ .05
17-2	2	$1\frac{1}{8}$ "	Each .08
17-3	3	$1\frac{3}{4}$ "	Each .12
17-4	4	$2\frac{1}{8}$ "	Each .15
17-5	5	$2\frac{3}{8}$ "	Each .18
17-6	6	$3\frac{1}{8}$ "	Each .22
17-7	7	$3\frac{1}{2}$ "	Each .27
17-8	8	$3\frac{3}{8}$ "	Each .31
17-9	9	$4\frac{1}{8}$ "	Each .35
17-10	10	$4\frac{1}{2}$ "	Each .39

### LUG TYPE TERMINAL STRIPS

These bakelite strips are handy for neatly supporting resistors, condensers, etc., in circuit wiring. Solder coated brass lugs are spaced on  $\frac{3}{8}$ " centers with .140 diameter mounting holes. Chocolate bakelite strips are  $\frac{1}{8}$ " thick and  $\frac{3}{8}$ " wide.

No.	Mtg. Centers	List Price
51		\$2.50 c
51A		2.60 c
51B		2.50 c
51C		2.60 c
51R		2.50 c
51L		2.50 c
51E		2.50 c
51F		2.50 c
51T		2.75 c
52		3.40 c
52A		3.50 c
52B		3.40 c
52C		3.50 c
52E	$\frac{3}{4}$ "	4.70 c
52F	$\frac{3}{4}$ "	4.90 c
52R		3.40 c
52T		3.80 c
53	$1\frac{1}{8}$ "	5.70 c
53A	$1\frac{1}{8}$ "	5.90 c
53B	$\frac{3}{4}$ "	5.70 c
53C	$\frac{3}{4}$ "	5.90 c
53E		4.40 c
53F		4.50 c
53T		5.10 c
54	$1\frac{1}{2}$ "	6.80 c
54A	$1\frac{1}{2}$ "	7.00 c
54B		5.50 c
54C		5.60 c
54R		5.50 c
55	$2\frac{1}{4}$ "	7.80 c
55A	$2\frac{1}{4}$ "	8.00 c
55B	$1\frac{1}{2}$ "	7.80 c
55C	$1\frac{1}{2}$ "	8.00 c
56	$2\frac{3}{4}$ "	9.40 c
56A	$2\frac{3}{4}$ "	9.60 c
56B	$1\frac{1}{2}$ "	9.40 c
56C	$1\frac{1}{2}$ "	9.60 c

# CINCH-JONES SALES ★

## RADIO HARDWARE

### CABLE CLAMPS



Cadmium plated sturdy steel cable clamps designed for securing cables ranging from  $\frac{1}{16}$ " diameter to  $\frac{3}{8}$ " diameter. Illustrations are half size.

No.	Dia. of arc	Hole Dia.	Over-all Width	Length	Hole cent. to arc cent.	List Price
85A	$\frac{1}{16}$ "	.149	$\frac{1}{8}$ "	$\frac{1}{2}$ "	$\frac{1}{4}$ "	\$3.00 C \$26.00 M
85B	$\frac{1}{8}$ "	.140	$\frac{3}{16}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	2.10 C 18.50 M
85C	$\frac{1}{8}$ "	.144	$\frac{3}{16}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	1.90 C 15.00 M
85D	$\frac{1}{8}$ "	.136	$\frac{1}{4}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	1.35 C 11.50 M
85E	$\frac{1}{4}$ "	.147	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	2.60 C 23.50 M
85F	$\frac{3}{8}$ "	.171	$\frac{3}{8}$ "	1"	$\frac{1}{2}$ "	1.40 C 12.00 M

### METAL SPACER SLEEVES



Zinc plated brass spacer sleeves. Six (6) popular sizes for spacing chassis, panels, etc. Illustrations are full size.

No.	Length	Outside Dia.	Inside Dia.	List Price
43A	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	\$1.50 C
43B	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	1.75 C
43C	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	1.75 C
43D	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	1.75 C
43E	$\frac{3}{4}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	2.00 C
43F	$\frac{1}{2}$ "	$\frac{1}{4}$ "	$\frac{3}{16}$ "	2.25 C

### KNOB SPRINGS



For fastening knobs to shafts. Four (4) popular sizes. Fabricated from high grade spring steel. Heat treated to retain spring retentivity.

No.	Description	List Price
83A	For $\frac{1}{8}$ " Shaft	\$ .80 C \$ 6.50 M
83B		1.00 C 8.50 M
83C	For $\frac{1}{4}$ " Shaft	1.10 C 9.50 M
83D		1.45 C 12.00 M

### GRID CAPS

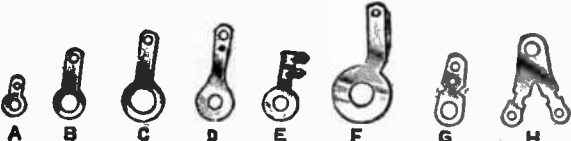
For glass or metal tubes. Made of heavy gage brass, solder coated for fast, easy soldering.



No. 60A is for  $\frac{3}{8}$ " diameter tube caps. All others designed for  $\frac{1}{4}$ " diameter tube caps.

No.	List Price
60A	\$1.15 C \$ 9.50 M
60B	1.05 C 8.50 M
60C	1.20 C 10.00 M
60D	1.15 C 9.50 M
60E	1.00 C 8.00 M

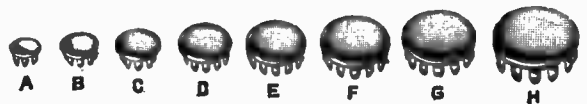
### SOLDER LUGS



Popular flat type solder lugs for a multitude of wiring applications. Eight (8) different styles. All solder coated for fast, easy soldering. Illustrations are half size.

No.	Length	Diameter Large Hole	Diameter Small Hole	List Price
14A	$\frac{1}{2}$ "	.110	.078	\$ .55 C \$ 4.50 M
14B	$\frac{3}{8}$ "	.165	.093	.70 C 6.00 M
14C	$\frac{1}{2}$ "	.250	.093	.60 C 5.00 M
14D	$\frac{1}{2}$ "	.145	.093	.75 C 6.50 M
14E	$\frac{1}{2}$ "	.125	None	1.30 C 11.00 M
14F	$\frac{1}{4}$ "	.260	.093	2.05 C 17.50 M
14G	$\frac{1}{2}$ "	.140	.093	.55 C 4.50 M
14H	$\frac{1}{2}$ "	.141	.093	1.20 C 10.00 M

### PLUG BUTTONS



Used to cover punched or drilled holes in metal, wood, fibre, tubes, plastic, cardboard, etc. Nickel plated steel plug buttons for eight popular size holes. Other sizes available, let us know your requirements. Spring tension prongs hold plug bottom firmly in position. Illustrations are  $\frac{1}{2}$  actual size.

No.	For hole Diameter	Cap Diameter	List Price
41A	$\frac{1}{4}$ "	$\frac{3}{8}$ "	\$2.50 C
41B	$\frac{3}{8}$ "	$\frac{1}{2}$ "	2.50 C
41C	$\frac{1}{2}$ "	$\frac{3}{4}$ "	2.75 C
41D	$\frac{5}{8}$ "	$\frac{3}{4}$ "	3.50 C
41E	$\frac{3}{4}$ "	$\frac{3}{4}$ "	3.50 C
41F	$\frac{7}{8}$ "	1" $\frac{1}{8}$ "	4.25 C
41G	1"	1" $\frac{1}{8}$ "	5.50 C
41H	$\frac{1}{4}$ "	1" $\frac{1}{8}$ "	6.00 C

### SCREEN TYPE PLUG BUTTON

For portable radios, transmitters, amplifiers, etc. Provides ventilation wherever required in radio, television and electronic equipment. Bright zinc plated steel button snaps in 1" diameter hole. Half size illustration.



No.	Description	List Price
41V	for 1" Hole	\$15.00 C

### GRID CAP SHIELD



Fits firmly over the grid cap, completely shielding the tube. Cadmium plated shield is 1" high with  $\frac{7}{8}$ " slot opening for grid leads.

No.	List Price
60S	Each \$ .10

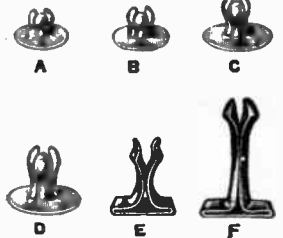
### DIAL PULLEYS



Precision engineered aluminum idler dial pulleys. Five (5) popular sizes.

No.	Outside Dia.	String Dia.	Hub Dia.	List Price
70A	$\frac{3}{8}$ "	$\frac{1}{16}$ "	$\frac{1}{8}$ "	\$1.40 C
70B	$\frac{1}{2}$ "	$\frac{1}{16}$ "	$\frac{1}{8}$ "	1.90 C
70C	$\frac{3}{4}$ "	$\frac{1}{16}$ "	$\frac{1}{8}$ "	2.00 C
70D	$\frac{3}{4}$ "	$\frac{3}{16}$ "	$\frac{1}{8}$ "	3.00 C
70E	$1\frac{1}{8}$ "	1"	$\frac{1}{8}$ "	4.25 C

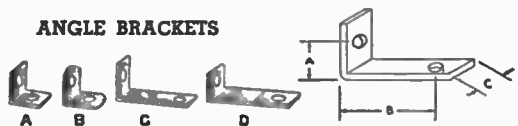
### SNAP-IN TRIMOUNTS



For holding two or more thicknesses of material firmly together. Can easily be removed a multitude of applications such as fastening dials, built-in aereals, cabinet backs, etc. Actual size illustrations of six (6) popular types.

No.	For Hole Diameter	Cap Diameter	Length	List Price
40A	.125	$\frac{1}{8}$ "	$\frac{1}{8}$ "	\$ .90 C \$ 7.50 M
40B	.138	$\frac{1}{8}$ "	$\frac{1}{8}$ "	1.10 C 9.00 M
40C	.144	$\frac{3}{16}$ "	$\frac{1}{8}$ "	1.20 C 10.00 M
40D	.171	$\frac{3}{16}$ "	$\frac{1}{8}$ "	1.40 C 12.00 M
40E	.156	$\frac{1}{4}$ "	$\frac{1}{8}$ "	1.55 C 13.00 M
40F	.125	$\frac{3}{8}$ "	$\frac{1}{8}$ "	1.30 C 11.00 M

### ANGLE BRACKETS



Cadmium plated brass and steel brackets for a variety of radio and other electronic applications. Illustrations are half size.

No.	"A" Dim.	"B"	"C"	"A" Hole	"B" Hole	List Price
33A	$\frac{7}{8}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "	.136	6-32 Tap	\$2.50 C \$21.00 M
33B	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	.140		1.50 C 12.50 M
33C	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{4}$ "	.156		1.20 C 10.00 M
33D	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	.136		1.90 C 16.00 M

### DIAL POINTERS

#### NEW! WIRE TYPE INDICATOR

Red enameled indicator  $3\frac{1}{2}$ " long. May be cut to any length and curved or bent to any desired position. May be inserted from front or rear and projected upward or downward. Wire may then be tightly crimped into carriage. Aluminum carriage rides easily on rail. Simply installed by hooking dial cable over extrusions on rear of carriage.



No.	List Price
11A	Each \$ .14

#### BROAD BAND TYPE INDICATOR

Similar to wire type indicator except has  $\frac{1}{4}$ " wide aluminum band, white enameled with red center stripe. Band is  $2\frac{3}{4}$ " long and may be cut or bent as desired. Indicator band is welded to aluminum carriage which rides on dial rail. Easily installed by hooking dial cable over outside extrusions and under center extrusion on rear of carriage.



No.	List Price
11B	Each \$ .24

# American Beauty

## ELECTRIC SOLDERING IRONS

These Irons embody features that specialized experience—since 1894—has demonstrated to be desirable for efficient and lasting service. Hundreds of thousands in use throughout the world in manufacturing plants, service, maintenance and repair shops, Army and Navy Services, telephone, telegraph and radio stations.

No. 3138—Designed primarily for production and maintenance in radio, telephone, telegraph, ignition switchboard and telephone installation work and similar industrial applications.

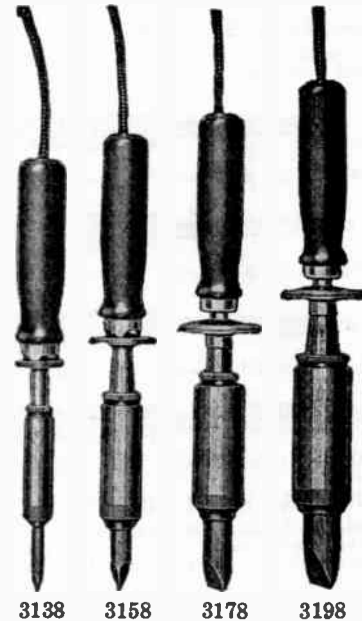
No. 3158—For the same purposes as the No. 3138 but for work requiring an iron of greater capacity.

No. 3178—For use on still heavier work; for light commutators and service and production work. A very useful iron for general purposes.

No. 3198—For heavy work of all kinds. Supplies a large volume of heat at high temperature. Used by manufacturers in many different lines; for shop, service, production work, etc. Each of the above irons is equipped with a baffle plate, at the shank, to prevent free conduction of heat to the handle.

No. 3128—Designed for lighter work than the No. 3138 in similar applications. Has plug-type  $\frac{1}{4}$ "-diameter tip with a heating element of chrome nickel but without compression winding as used in the higher-wattage No. 3138-3198 series. Element and casing with handle springs and terminal assembly built as a unit.

No. S-76—Designed for work of the same kind as the No. 3128 but has a screw-type  $\frac{1}{8}$ " diameter tip which screws on the metal head of the core of the chrome nickel heating element. Element with



3138 3158 3178 3198



Top No. 3128 — Bottom No. S-76

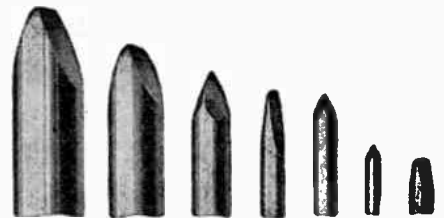
Made in standard voltages and for 32 volts. No. 3138 also made for 6, 12, 24 and 55 volts. Nos. 3138-3198 can be equipped with three-conductor cord, one wire grounded, at slight additional charge. Separate heat-insulating stand supplied with each iron.

### SPECIFICATIONS

Cat. No.	Diameter of Tip	Watts	Net Weight	Length Over All	Casing Diameter	Approx. Ship. Wt.	List Price Each	Net Price Each (Less than 6)	Net Price Each (6 or more)
3138	$\frac{3}{8}$ "	100	16 oz.	12 $\frac{7}{8}$ "	$\frac{7}{8}$ "	2 lbs.	\$ 8.00	\$ 5.36	\$ 5.08
3158	$\frac{5}{8}$ "	200	28 oz.	13 $\frac{5}{8}$ "	1 $\frac{1}{4}$ "	3 lbs.	9.60	6.41	6.07
3178	$\frac{7}{8}$ "	300	42 oz.	14 $\frac{3}{8}$ "	1 $\frac{9}{16}$ "	4 lbs.	12.90	8.59	8.11
3198	1 $\frac{1}{8}$ "	550	60 oz.	15"	1 $\frac{3}{4}$ "	5 $\frac{1}{2}$ lbs.	16.80	11.18	10.58
3128	$\frac{1}{4}$ "	60	7 $\frac{1}{2}$ oz.	12 $\frac{1}{4}$ "	$\frac{9}{16}$ "	16 oz.	5.00	3.34	3.18
S-76	$\frac{1}{16}$ "	50	6 oz.	11 $\frac{5}{8}$ "	$\frac{9}{16}$ "	14 oz.	5.00	3.34	3.18

## American Beauty COPPER TIPS

These copper tips are made from commercially pure, drawn bar, copper rod. Except for the No. 3734 screw-on type tip for the No. S-76 iron, each tip is designed to fit into, and to the full length of, core of heating unit of the particular iron for which it is intended. Maximum area of contact between the tip and heating unit is thus assured. Tips are of uniform diameter throughout their entire length. Each tip is held in place in core of heating unit by a recessed set-screw. Removal for cleaning or replacement is therefore easy. Standard shaped tips with which the various models are equipped are shown in the illustration; but pyramidal, instead of chisel type, and vice versa, can be supplied when so specified without additional charge. For No. 3138 a special, long, semi-chisel shaped tip No. 3738-S can be supplied for telephone and switchboard work.



3798 for 3198 Iron  
3778 for 3178 Iron  
3758 for 3158 Iron  
3738S for 3138 Iron  
3738 for 3138 Iron  
3728 for 3128 Iron  
3734 for S-76 Iron



## American Beauty TEMPERATURE REGULATING STAND

For use on (AC) Alternating Current Only

This is a thermostatically controlled device for the regulation of the temperature of an electric soldering iron while at rest. When placed on this stand, soldering iron is maintained at working temperature, ready for instant use or, if desired, at a lower temperature. Through an adjustment on bottom of the stand, thermostat may be set for the maintenance of any desired temperature—from very low, or warm, to full working temperature. Body of stand is of molded plastic. Soldering iron cradle proper is of metal. Stand is equipped with cord and attachment plug-cap for connection to current and with a receptacle for connection of the electric soldering iron. It is designed for use with electric soldering irons up to 660 watts capacity and on circuits up to 240 volts.

Cat. No.	Net Weight	List Price	Net Price
475	27 oz.	\$5.50	\$3.88

# ESICO

REG. U. S. PAT. OFF.

## ELECTRIC SOLDERING IRONS FOR HOME, PROFESSIONAL MECHANIC AND FACTORY

### ● GREEN LABEL LINE

For intermittent duty. Meets all requirements of the home craftsman.



No. 415—List \$1.95— $\frac{3}{8}$ " Tip—55 Watts



No. 416—List \$2.95— $\frac{1}{4}$ " Tip—60 Watts



No. 417—List \$3.95— $\frac{3}{8}$ " Tip—100 Watts



No. 418—List \$4.95— $\frac{1}{2}$ " Tip—130 Watts

### ● ORANGE LABEL LINE

For Professional Mechanics—light or heavy soldering where iron must withstand operation for eight hour periods or more on frequent occasions.



No. 62—List \$4.95— $\frac{1}{4}$ " Tip—60 Watts



No. 63—List \$5.95— $\frac{3}{8}$ " Tip—100 Watts



No. 64—List \$6.95— $\frac{1}{2}$ " Tip—130 Watts



No. 65—List \$7.95— $\frac{5}{8}$ " Tip—200 Watts



No. 67—List \$8.95— $\frac{7}{8}$ " Tip—300 Watts



No. 69—List \$10.95— $1\frac{1}{8}$ " Tip—500 Watts

### ● RED LABEL LINE

For Production Line Continuous Operation. These irons are of most rugged construction.



No. 38—List \$6.95— $\frac{3}{8}$ " Tip—100 Watts



No. 58—List \$8.95— $\frac{5}{8}$ " Tip—200 Watts



No. 78—List \$10.95— $\frac{7}{8}$ " Tip—300 Watts



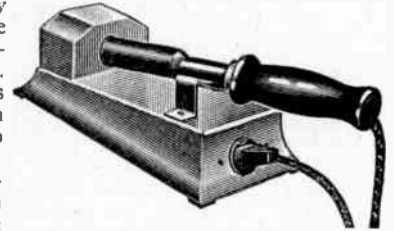
No. 98—List \$12.95— $1\frac{1}{8}$ " Tip—550 Watts

### ● Thermostatic Temperature Control Stand

The iron can be maintained at any desired temperature while in the stand. This is the only way to control the tip temperature of an iron. Control of element temperature is not satisfactory. There is too much of a lag between element and tip temperature.

Years ago we developed a thermostatically controlled iron, which regulated the element temperature (just as presently marketed thermostatically controlled irons do) but we discarded the iron as it would permit the tip to cool.

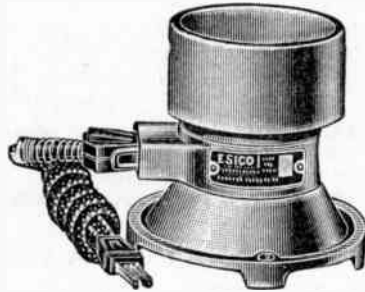
When the stand is properly adjusted, it is impossible for the iron to overheat or to burn off its tin.



List Price

Cat. No. 5 Irons up to 1" dia. tip .....\$ 6.50  
Cat. No. 6 Irons up to  $1\frac{1}{8}$ " dia. tip ..... 6.50

### ● Soldering Pots



Ruggedly constructed, cast iron pots for production work. Elements are easily replaced even while pots are hot.

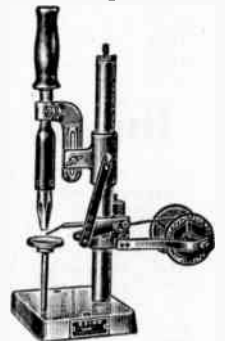
Net Price

Cat. No. 12— $1\frac{1}{2}$ " dia. Cap.  
 $\frac{3}{4}$  lbs. ....\$ 4.50  
Cat. No. 36— $2\frac{1}{2}$ " dia. Cap.  
 $2\frac{1}{4}$  lbs. .... 5.50  
Cat. No. 60— $3\frac{1}{2}$ " dia. Cap.  
 $3\frac{3}{4}$  lbs. .... 6.50

### ● Spot Soldering Machine

Model "F" is a treadle operated machine which feeds solder forward as the iron moves away from the work. Suitable for spot soldering where a mechanical connection has first been made. Net price .....\$15.00

Model "N" is a treadle operated machine for the advancement of the iron, but without a solder feed attachment. Net price .....\$7.50



### ● Glue Pots

The catalogue No. 700 Glue Pot is of two quart capacity. It is the water jacket type and has a gasket sealed element and thermostat completely protected from moisture. Thermostat is normally set at 150 degrees for use with glue, but can be set at various temperatures for use with wax, etc. Net price \$18.50

## ELECTRIC SOLDERING IRON CO., INC.

# DRAKE



# RADIO IRONS

### Suggested for Maintenance Work and for the Radio Service Man



60 Watt Iron with  $\frac{3}{8}$ " Tip. An excellent iron for light work. Porcelain element. Six ft. cord and small stand.

No. 315 ..... List \$1.90  
Element..... List \$1.00      Tip..... List \$0.90  
Shipping Weight 1 lb.

100 Watt Iron with  $\frac{3}{8}$ " Tip. An ideal iron for those who require a hotter iron than our No. 315. Porcelain element. Six ft. cord and small stand.

No. 316 ..... List \$3.20  
Element..... List \$1.50      Tip..... List \$1.80  
Shipping Weight 1 1/2 lbs.



80 Watt Iron with  $\frac{3}{8}$ " Tip. Recommended for light radio work. Mica wound element. Six ft. cord and large stand.

No. 225 ..... List \$4.40  
Element..... List \$3.40      Tip..... List \$1.25  
Shipping Weight 1 1/2 lbs.

100 Watt Iron with  $\frac{3}{8}$ " Tip. Recommended for general radio work. Mica wound element. Six ft. cord with large stand.

No. 325 ..... List \$5.00  
Element..... List \$4.00      Tip..... List \$1.25  
Shipping Weight 2 lbs.



125 Watt Iron with  $\frac{3}{8}$ " Tip. An extra hot iron for the serviceman. Mica wound element. Six ft. cord and large stand.

No. 326 ..... List \$6.00  
Element..... List \$5.00      Tip..... List \$1.25  
Shipping Weight 2 lbs.

200 Watt Iron with  $\frac{5}{8}$ " Tip. Recommended for medium heavy work. Mica wound element. Six ft. cord and large stand.

No. 425 ..... List \$10.00  
Element..... List \$9.00      Tip..... List \$ 2.00  
Shipping Weight 2 lbs.

### INDUSTRIAL IRONS



60 Watt Iron with  $\frac{1}{4}$ " Tip. An extra small iron for midget sets. Only 9" long.

No. 400 ..... List \$5.50  
Element..... List \$4.50      Tip..... List \$0.60  
Shipping Weight 2 lbs.

100 Watt Iron with  $\frac{3}{8}$ " Tip. Only 10 inches over all. Ideal for close work on radio sets.

No. 600-10 ..... List \$8.00  
Element..... List \$7.00      Tip..... List \$1.25  
Shipping Weight 2 lbs.

140 Watt Iron with  $\frac{3}{8}$ " Tip. An extra hot iron for high speed work on production lines.

No. 600 Special ..... List \$8.50  
Element..... List \$7.50      Tip..... List \$1.25  
Shipping Weight 2 lbs.



80 Watt Iron with  $\frac{3}{8}$ " Tip. Recommended for fine instruments, light telephone and other light soldering.

No. 450 ..... List \$6.00  
Element..... List \$5.00      Tip..... List \$1.25  
Shipping Weight 2 lbs.

100 Watt Iron with  $\frac{3}{8}$ " Tip. The standard 100 watt iron. Ideal for switchboards and radio sets.

No. 600 ..... List \$7.50  
Element..... List \$6.50      Tip..... List \$1.25  
Shipping Weight 2 lbs.

200 Watt Iron with  $\frac{5}{8}$ " Tip. For general factory work such as art glass, medium tin work.

No. 800 ..... List \$10.00  
Element..... List \$9.00      Tip..... List \$ 2.00  
Shipping Weight 3 lbs.



### MODEL 350 MIDGET

Recommended for voice coil leads on speaker cones, meter connections, test equipment, hearing aids, crystal pickups, headphone leads, etc. This iron is a continuous duty 35 watt iron with a nickel-chromium element wound over mica insulation on a steel core.

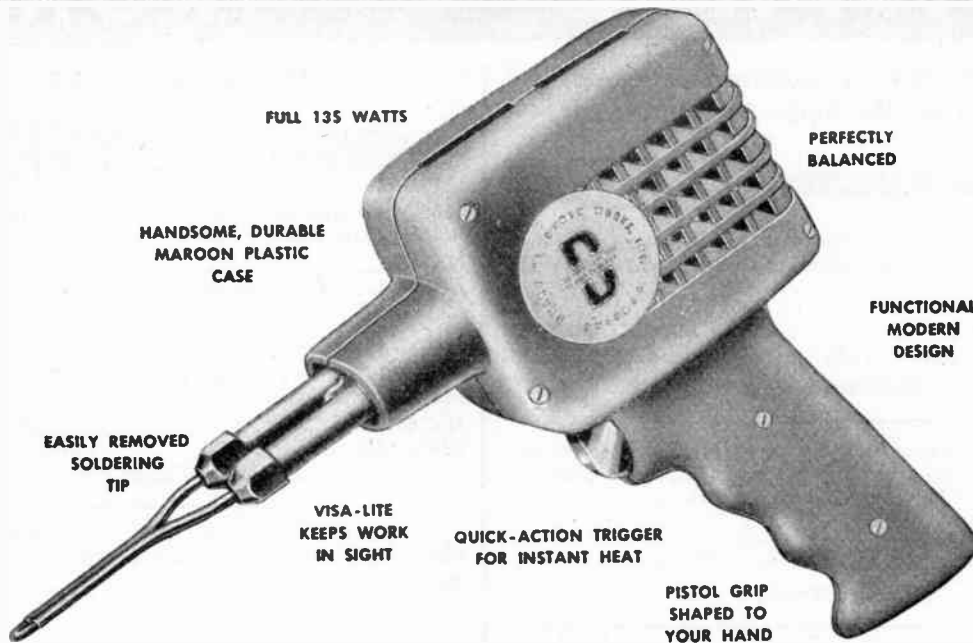
No. 350 ..... List \$5.00  
Element..... List \$4.00      Tips, ea..... List \$0.25  
Shipping Weight 1 lb.



# DRAKE



**SOLDER GUN  
HEAT CONTROLS  
SOLDER POTS**



FULL 135 WATTS

PERFECTLY  
BALANCED

HANDSOME, DURABLE  
MAROON PLASTIC  
CASE

FUNCTIONAL  
MODERN  
DESIGN

EASILY REMOVED  
SOLDERING  
TIP

VISA-LITE  
KEEPS WORK  
IN SIGHT

QUICK-ACTION TRIGGER  
FOR INSTANT HEAT

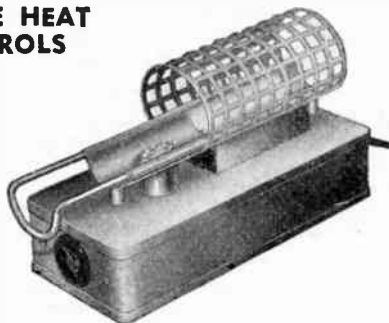
PISTOL GRIP  
SHAPED TO  
YOUR HAND

## DRAKE "INSTANT HEAT" SOLDER GUN

A new addition to the famous "Drake" family of complete soldering aids. Instant-heat solder gun for quick soldering requirements. Saves power since gun only operates when trouble-free trigger is squeezed. Equipped with built-in spotlight, properly focused to light soldering spot. Attractive maroon plastic case properly louvered for cool operation. Balance engineered by one of America's most famous industrial designers. Complete with easily removed tips, one 3½" tip for ordinary soldering; one 6½" tip for deep chassis soldering. Operates on 110-120 volt, 60-cycles A.C., 135 watts. Shpg. wt., 3 lbs.

No. 900 Solder Gun, complete with 2 tips; one ½" and one 6½"..... List Price \$20.00  
No. 901 Extra 3½" Tips (2 to pkg.) List Price \$0.50 No. 902 Extra 6½" Tips (2 to pkg.) List Price \$0.50

## DRAKE HEAT CONTROLS



New thermostatically controlled, automatic, heat controls. Ideal for production applications where iron must be kept at correct soldering temperatures at all times. Complete with oxide removing "Magic Cup." Choice of with or without hood. Operates on 110 to 240 volts and will handle any iron to 660 watts. Shpg. wt., either model: 3 lbs.

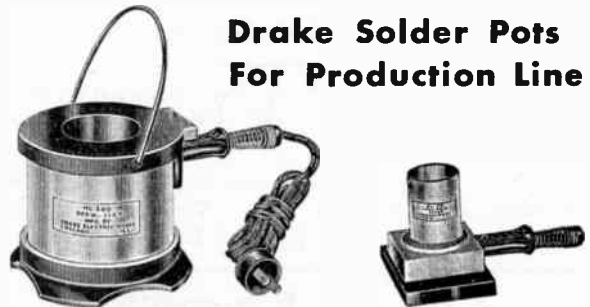
No. 305 Less Hood..... List Price \$7.50  
No. 305H With Hood..... List Price \$8.50

### Standard Models

These standard economy models have stand-by switch instead of thermostats. Keep switch in low position until iron is almost ready for use. A flip of the switch and the iron is ready for use in a few moments. Variable resistor allows individual adjustment to meet the requirements of each soldering operation. Operates on 110 volts. Shpg. wt., either model: 3 lbs.

No. 300 Less Hood..... List Price \$5.50  
No. 300H With Hood..... List Price \$6.00

## Drake Solder Pots For Production Line



### Model No. 200—300 Watt Unit

An ideal electric solder pot for production use. Used in factory production of tinned wire ends, terminal tinning and countless other volume tinning applications. Holds 2 lbs. of bar solder in 2½" diameter 2" deep cast iron well. Complete with detachable Underwriters' Approved cord and plug, and bale type carrying handle. Genuine nichrome element. Shipping weight 6 lbs.

No. 200..... List Price \$6.50

### Model No. 100—150 Watt Unit

Designed for light tinning. Ideal for occasional jobs. Suited especially for tinning ends of stranded wires to prevent fraying. Can also be used for soldering cord tips to cables. One piece cast iron construction holds heat longer. Size of pot 1½" diameter 1" deep. Holds 1 lb. of bar solder. Complete with Underwriters' Approved cord and detachable plug. Shipping weight 3 lbs.

No. 100..... List Price \$5.00



# CALROD\* SOLDERING IRONS

FOR EVERY RADIO REQUIREMENT  
MANUFACTURING — SERVICE

\*Reg. U. S. Pat. Off.

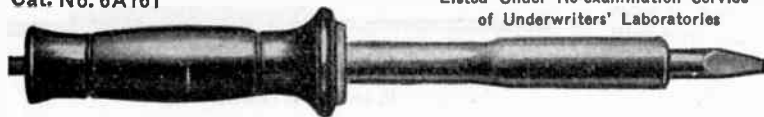
- **HIGH-SPEED SOLDERING.** You can solder as fast and continuously as the nature of the work will allow.
- **UNIFORM PERFORMANCE.** Operating characteristics remain constant day after day. No appreciable decrease in efficiency even after months of service.
- **LONG LIFE AND LOW MAINTENANCE.** Long

life is assured and over-all costs are kept low because sturdy construction eliminates need of frequent repairs.

- **EASY, LOW-COST REPAIR.** Assembling and disassembling are easy.
- **THEY NEED NOT BE RETURNED TO THE FACTORY FOR REPAIR.** Irons can be repaired on the job without special tools or skill.

Cat. No. 6A161

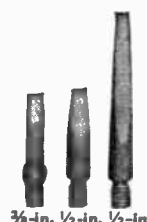
Listed Under Re-examination Service of Underwriters' Laboratories



Watts 75 Volts 115

Calorized tip .....\$9.55†  
IRONCLAD tip .....10.20\*†

Tip Diam. See note at left\*



\* For light, intermittent soldering such as radio assembly and repair and installation, switchboard, ignition, wiring devices, meters and instruments, or very light high-speed soldering of similar products.

WEIGHTS: Less cord, 15 oz. With cord, 20 oz. Shipping, 26 oz. Equal to old-style copper—1 1/4-lb.

\*Note: Cat. No. 6A161 and Cat. No. 6A162 can be supplied with either a 3/8- or 1/2-inch diameter tip at prices given. The long 1/2-inch diameter tip projects 3/8 inches from the shell. Price if iron with long calorized tip—\$10.10 with long IRONCLAD tip—\$10.90.

For light, high-speed soldering, such as assembly of radios, telephones, switchboards, appliances, meters, and instruments, and installation and repair of wiring devices, ignition. Excellent for service and repair men.

WEIGHTS: Less cord, 15 oz. With cord, 20 oz. Shipping, 26 oz. Equal to old-style copper—1 1/4 lb.

Cat. No. 6A162



Watts 100 Volts 115

Calorized tip .....\$9.55†  
IRONCLAD tip .....10.20\*†

Tip diam. See note above\*



For light, high-speed soldering, such as assembly of radios and switchboards, medium intermittent soldering on tinware, wiring, plumbing, and tinsmithing. Excellent general-purpose iron for shop and farm.

WEIGHTS: Less cord, 16 oz. With cord, 21 oz. Shipping, 27 oz. Equal to old-style copper—2-lb.

Cat. No. 6A200



Watts 100 Volts 115

Calorized tip .....\$10.80†  
IRONCLAD tip ..... 12.20†

Tip. diam. 3/4 inch

For medium, high-speed soldering of automobile and airplane assembly, electric equipment, light tanks and containers of copper and steel. Excellent general-purpose iron for manufacturing plant.

WEIGHTS: less cord, 24 oz. With cord, 29 oz. Shipping, 34 oz. Equal to old-style copper—3-lb.

Cat. No. 6A201



Watts 200 Volts 115

Calorized tip .....\$13.55†  
IRONCLAD tip ..... 15.10†

Tip. diam. 1 inch

Cat. No. 6A202



Watts 300 Volts 115

Calorized tip .....\$16.40†  
IRONCLAD tip ..... 17.95†

Tip. diam. 1 1/4 inch

For heavy work such as light commutators, large-diameter pipe, medium-gage copper or steel tank and container material, roofing, heavy tinware. WEIGHTS: Less cord, 37 oz. With cord, 42 oz. Shipping, 48 oz. Equal to old-style copper—4-lb.

## ASK ABOUT IRONCLAD TIPS

IRONCLAD TIPS MEAN

- No Filing
- Lower Upkeep Cost
- Less Maintenance
- Longer Life

Effect of solder (250 O for 863.5 hours) on plain copper (left) and Ironclad copper (right) soldering tips.

Note—280-volt irons available on request. Same prices apply. Above prices include supporting stand.

† Mfg.'s suggested retail price.

ASK YOUR DISTRIBUTOR FOR A COPY OF BULLETIN GEA-4519.



# MIDGET SOLDERING IRONS

FOR MANUFACTURING AND SERVICE  
OF RADIO AND ELECTRONIC EQUIPMENT

## APPLICATION

This 8-inch, 1¼-ounce featherweight iron for close-quarter soldering with pin-point precision is used where conventional irons might cause damage . . . be clumsy to handle . . . be more expensive to operate. The Midget literally goes places with greater efficiency and less power . . . with no sacrifice in heat or speed. With its fingertip operation, this iron will help make an expert out of any solderer in a short time.

The Midget has chisel-shaped Ironclad copper tips either ⅛- or ¼-inch diameter, as desired.

### THIS MIDGET DOES A BIG JOB IN

- Boosting Production Rates
- Increasing Operator Efficiency
- Cutting Down Employee Fatigue
- Saving on Repair and Maintenance
- Reducing Rejects
- Manufacturing and Repairing:
  - Radios and other electronic equipment
  - Meters
  - Instruments
  - Jewelry
  - Appliances

. . . and many other products requiring precision soldering

**RATING: 6 VOLTS, 25 WATTS**

Description	Cat. No.	Price†
★⅛-in. Ironclad copper tip (pyramid-shaped)	6A212	\$5.40
★¼-in. Ironclad copper tip (chisel-shaped)	6A210	5.40
⅛-in. Renewal tip and heater assembly	6A213	3.00
¼-in. Renewal tip and heater assembly	6A211	3.00

Net weight iron less cord 1¼ oz.  
Net weight iron including cord 5 oz.  
Shipping weight complete iron 8 oz.  
Standard package consists of 6 irons of one tip size. Tip and heater assemblies can be purchased in any quantities.

## THE MIDGET OFFERS MAJOR ADVANTAGES

**Low-cost soldering**—Solders more efficiently, using only approximately one-fourth wattage normally used.

**Fingertip operation**—Only 8 inches long, weighs but 1¼ ounces. Styled for fingertip grip.

**Quick, continuous heat**—Famous G-E Calrod\* heater built into Ironclad copper tip for rapid heat transfer.

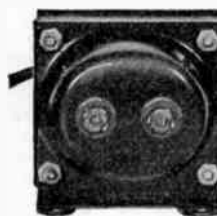


⅛-in. dia tip, Cat. No. 6A212



¼-in. dia tip, Cat. No. 6A210

### SPECIAL TRANSFORMERS (OPTIONAL) FOR G-E MIDGET SOLDERING IRONS



Single-tap, Cat. No. 84G392



Four-tap, Cat. No. 84G370

Specially designed 115-volt transformers are available as optional equipment in two types:

1. Single-tap 115/6 volts—for use where only one soldering heat is required
2. Four-tap 115/6.3/6/5.7/5.4 volts — gives wide range of heats (from 20 to 30 watts) for close temperature control of tips

Transformers are small, lightweight, but sturdy. Their 6-foot extension cords can be plugged in any 115-volt a-c circuit.

Description	Cat. No.	Price†
Single-tap	84G392	\$5.20
Four-tap	84G370	7.80

Publication Reference .....GEA-4519

**Easy renewal**—Ironclad tip and heater can be replaced as a unit merely by unscrewing from handle.

**Long life, low maintenance**—Low voltage permits use of heavy, long-lasting resistant wire. Reduced servicing with long-lasting Ironclad copper tip.

\* Registered U.S. Patent Office.  
† Manufacturers' suggested retail price.



# ELECTRIC SOLDERING IRONS



**GENERAL INFORMATION**—Equipped with 6 ft. (10,000 cycle) approved heater cord (covered with twine braid for extra long wear) and rubber plug. Continental or English type plugs 25c extra list. Metal stand furnished with each iron. Heating elements made of best grade nickel-chromium resistance wire, insulated with finest mica obtainable. Elements in the plug tip irons are replaceable by the user and in the screw tip irons replaceable at

the factory. Tips in all irons are replaceable; made of hard drawn pure copper. Case is made from solid hexacon steel (except No. 50 and P-30), affording it great mechanical strength, preventing denting. Terminal easily accessible and constructed to relieve cord strain. Smooth, cool, comfortable handle—readily replaceable. Voltage range: 32 to 250. Standard voltages 110/120, 121/130, 220/250. All other voltages \$1.00 extra list.

## SCREW TIP IRONS



No. 50—For light soldering on radio, telephone and electrical apparatus. 50 Watts. Tip diam.,  $\frac{1}{16}$ ". Ship. wt., 1 lb. Equal to  $\frac{1}{2}$ -lb. old style copper.....each \$4.50

No. 60—Medium light soldering on telephone, radio, apparatus and linemen's kits. 60 Watts. Tip diam.,  $\frac{1}{8}$ ". Ship. wt.,  $1\frac{1}{2}$  lb. Equal to 1-lb. old style copper.....each \$6.25



No. 85—A high speed tool for telephone, radio and home use. 90 Watts. Tip diam.,  $\frac{1}{8}$ ". Ship. wt.,  $1\frac{1}{4}$  lb. Equal to  $1\frac{1}{2}$ -lb. old style copper.....each \$7.00



No. 120—Light tinware, toys, typewriter, light auto, etc. A high speed iron. 120 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt.,  $1\frac{1}{2}$  lb. Equal to 2-lb. old style copper.....each \$8.00



No. 130—Same as No. 120 except has larger tip and 10 more watts capacity. 130 Watts. Tip diam.,  $\frac{1}{4}$ ". Ship. wt.,  $1\frac{1}{2}$  lb. Equal to 2-lb. old style copper.....each \$8.75

No. 170—Medium tinware, small cans, auto repairs, pipes, gutters, toys, small motors. 175 Watts. Tip diam.,  $1$ ". Ship. wt.,  $2\frac{1}{2}$  lb. Equal to  $2\frac{1}{2}$ -lb. old style copper.....each \$10.00



No. 225—Medium tinware, cans, auto repairs, metal patterns, light roofing, small branders. 250 Watts. Tip diam.,  $1\frac{1}{8}$ ". Ship. wt.,  $2\frac{1}{2}$  lb. Equal to 3-lb. old style copper.....each \$11.00



No. 350—Heavy tinware, large cans, autos, roofing, refrigerators, ship and airplane. 350 Watts. Tip diam.,  $1\frac{1}{2}$ ". Ship. wt.,  $3\frac{3}{8}$  lb. Equal to 4-lb. old style copper.....each \$13.00



No. 500—Auto repairs, sinks, roofs, cans, armatures, large branders, tinmiths, etc. 500 Watts. Tip diam.,  $1\frac{1}{2}$ ". Ship. wt., 4 lb. Equal to 5-lb. old style copper.....each \$15.00

No. 700—For extra heavy soldering and large branders. 700 Watts. Tip diam.,  $1\frac{1}{2}$ ". Ship. wt., 5 lbs. Equal to 7-lb. old style copper.....each \$27.50

OPERATE ON A.C. OR D.C. ANY CYCLE

## PLUG TIP IRONS



No. P-30—For extremely light soldering on finest wire and delicate instruments. 40 Watts. Tip diam.,  $\frac{1}{16}$ ". Ship. wt.,  $\frac{3}{4}$  lb. Equal to  $\frac{1}{4}$ -lb. old style copper.....each \$4.50

No. P-70—For light soldering on radio and telephone apparatus and electrical instruments. 80 Watts. Tip diam.,  $\frac{1}{8}$ ". Ship. wt.,  $1\frac{1}{2}$  lb. Equal to 1-lb. old style copper.....each \$6.00



No. P-100—A high speed tool for telephone switchboards, electrical instruments, etc. 100 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt.,  $1\frac{1}{4}$  lb. Equal to  $1\frac{1}{2}$ -lb. old style copper.....each \$7.00

No. P-125—For light tinware, toys, typewriter type bars, small cans, auto, etc. 180 Watts. Tip diam.,  $\frac{1}{4}$ ". Ship. wt.,  $1\frac{1}{2}$  lb. Equal to 2-lb. old style copper.....each \$8.50



No. P-150—Extra high speed iron for radios, electrical apparatus and where a light iron with small diameter is required. 150 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt.,  $1\frac{1}{4}$  lb. Equal to 2-lb. old style copper.....each \$7.75

No. P-151—Same as No. P-150, except where a larger tip is desired. 175 Watts. Tip diam.,  $\frac{1}{2}$ ". Ship. wt.,  $1\frac{1}{4}$  lb. Equal to  $2\frac{1}{2}$ -lb. old style copper.....each \$8.25



No. P-200—For medium tinware, cans, auto repairs, light roofing, sheet metal, etc. 200 Watts. Tip diam.,  $\frac{1}{4}$ ". Ship. wt.,  $2\frac{1}{2}$  lb. Equal to  $2\frac{1}{2}$ -lb. old style copper.....each \$9.50

No. P-250—Same as No. P-200, except where greater speed is required for manufacturing. 250 Watts. Tip diam.,  $\frac{3}{8}$ ". Ship. wt.,  $2\frac{1}{2}$  lb. Equal to 3-lb. old style copper.....each \$10.75



No. P-300—For heavy tinware, large cans, auto, roofing, refrigerator work, etc. 300 Watts. Tip diam.,  $\frac{1}{2}$ ". Ship. wt.,  $2\frac{1}{2}$  lb. Equal to 4-lb. old style copper.....each \$12.50

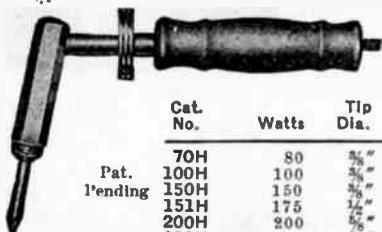


No. P-550—For auto radiators, copper sinks, roofs, heavy armatures, large branders, etc. 550 Watts. Tip diam.,  $1\frac{1}{4}$ ". Ship. wt.,  $4\frac{1}{2}$  lb. Equal to 5-lb. old style copper.....each \$15.00

SPECIFY VOLTAGE WHEN ORDERING

## HEXA CON HATCHET TYPE IRON

For same use as Plug Tip irons of equal wattage, shown above. Replaceable elements and all other features of Plug Tip Irons.

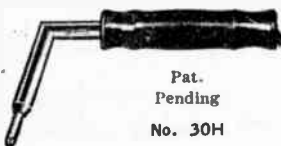


Perfect Balance  
Less Fatigue  
Better Soldered Joints

	Cat. No.	Watts	Tip Dia.	Ship. Wt.	Price
	70H	80	$\frac{3}{16}$ "	$1\frac{1}{2}$ lbs.	\$ 8.00
Pat.	100H	100	$\frac{3}{16}$ "	$1\frac{1}{2}$ lbs.	9.00
Pending	150H	150	$\frac{3}{16}$ "	2 lbs.	9.75
	151H	175	$\frac{1}{2}$ "	2 lbs.	10.25
	200H	200	$\frac{3}{8}$ "	2 $\frac{1}{2}$ lbs.	11.50
	300H	300	$\frac{1}{2}$ "	2 $\frac{1}{2}$ lbs.	14.50

## HEXA CON FEATHERWEIGHT HATCHET IRON

So light its weight is hardly noticeable, but more powerful than most larger irons. Hatchet design makes iron effortless to use. No transformer or other cumbersome and expensive equipment required.



List Price.....\$5.00  
Weight:  $5\frac{1}{2}$  ozs. (less cord).  
\*Watts: 40, 50 or 60.  
Both  $\frac{1}{16}$ " and  $\frac{1}{8}$ " dia. tips furnished with each iron.  
Shipping weight: 1 lb.  
\*Specify watts when ordering.

Pat.  
Pending  
No. 30H



# SOLDERMASTER Royal Blue Line ELECTRIC SOLDERING IRONS



**GENERAL INFORMATION**—Replaceable elements. Best grade of Madagascar mica for insulation. No. 55 has brass-sheathed cartridge element. Best grade nickel-chrome resistance wire. Replaceable hard drawn copper tips. All one piece swaged cases

**CHROME PLATED.** Equipped with 6 ft. Underwriters' Approved heater cord, rubber plug. Continental or English type plug 25c extra list. Stand for resting iron furnished.

VOLTAGES 110/120 220/250 A.C. or D.C., ANY CYCLE  
SPECIFY VOLTAGE WHEN ORDERING

## SCREW TIP IRONS



No. 55B—For light soldering, radio apparatus, etc. 55 Watts. Tip diam.,  $\frac{1}{16}$ ". Ship. wt., 13 oz.....each \$2.50



No. 76B—For light work, electrical instruments, etc. 75 Watts. Tip diam.,  $\frac{1}{8}$ ". Ship. wt., 15 oz.....each \$4.00



No. 100B—Same as No. 76B except used where more speed is required and heavier work is done. For home use. 90 Watts. Tip diam.,  $\frac{1}{8}$ ". Ship. wt., 16 oz.....each \$4.50



No. 150B—Ideal size for garage and repair work. For home use. 170 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 24 oz.....each \$7.00



No. 300B—For heavy steel metal, auto radiators, etc. 275 Watts. Tip diam.,  $\frac{1}{4}$ ". Ship. wt., 38 oz.....each \$10.00

## PLUG TIP IRONS



No. 71B—For light work, radio repairs, etc. 75 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 16 oz.....each \$4.00



No. 101B—For same work as No. 71B, but where more speed is required or heavier work is done. For home use. 100 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 18 oz.....each \$4.50



No. 121B—High speed iron for radio and electrical repairs. 125 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 1  $\frac{1}{4}$  lbs.....each \$5.50



No. 201B—For same work as No. 150B, except where plug tip is desired. 200 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 34 oz.....each \$8.00



No. 301B—For same work as No. 300B, except where plug tip is desired. 300 Watts. Tip diam.,  $\frac{3}{16}$ ". Ship. wt., 46 oz.....each \$10.00

## DISPLAYS

Increase your sales with these silent salesmen. Irons securely mounted, but readily removable for sale. Individually packed in cartons ready for shipment. Catalog number and wattage shown on front of display. Complete catalog information and price list on back.

### SCROLL TYPE DISPLAY

Striking, Modernistic, All Metal Panel



#### No. 1 DISPLAY Illustrated

Size 15" x 17  $\frac{1}{2}$ " (Nos. 1B, 2B, and 3B also same size)

This Display Panel Also Furnished With  
Five or Seven Irons (See Below)

	Ship. Wt.	List Price
No. 1B—Nine Iron with Nos. 55B, 76B, 100B, 150B, 300B, 71B, 101B, 201B, 301B....	20 lbs.	\$54.50
No. 2B—Seven Iron with Nos. 55B, 76B, 100B, 150B, 300B, 71B, 101B.....	17 lbs.	36.50
No. 3B—Five Iron with Nos. 55B, 76B, 100B, 150B, 300B.....	15 lbs.	28.00
No. 4B—Five Iron with Nos. 71B, 101B, 121B, 201B, 301B.....	16 lbs.	32.00

### ATTRACTIVE THREE COLOR CARDBOARD DISPLAY



This same display card also furnished with No. 5B and No. 5DB, but mounted with irons listed below.

#### No. 6B DISPLAY Illustrated

Size 12" x 16  $\frac{1}{2}$ "

(Nos. 5B, 5DB also same size)

	Ship. Wt.	List Price
No. 5B—Three Iron with Nos. 55B, 76B, 100B...	4 lbs.	\$11.00
No. 5DB—Three Iron with Nos. 55B, 100B, 150B on display and 2 No. 55B and 1 No. 100B for stock.....	8 lbs.	23.50
No. 6B—Three Iron with Nos. 71B, 101B, 121B....	5 lbs.	14.00

# KWIKHEAT



## SOLDERING IRONS

# THERMOSTATICALLY CONTROLLED

### HOT IN 90 SECONDS - 225 WATTS <sup>110/</sup>/<sub>120</sub> V. A.C.



- New Bevelled Tips give 30% more heat
- Three times faster heating
- Maintains constant temperature
- Tips stay tinned 10 times longer
- Cannot overheat
- Temperatures are pre-set

## 15 IMPROVEMENTS

### Self-Contained Thermostat Patented Feature

KWIKHEAT Thermostatically Controlled Soldering Iron is the only iron containing a built-in thermostat. This enables it to heat up ready for use in 90 seconds! Fully guaranteed! KWIKHEAT's patented thermostat maintains perfect temperature for best soldering . . . prevents overheating . . . prolongs life of iron . . . reduces cost of tip maintenance. Cool plastic handle . . . light weight . . . 6 interchangeable tip styles make one KWIKHEAT equivalent to several soldering irons of different wattage.

LIST PRICE **\$11<sup>00</sup>**

### SPECIFICATIONS

Type #300:

225 Watts - 100/125 V. A.C.

Weight of iron with # tip: 13½ ozs.

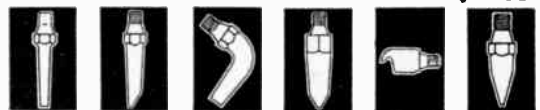
Length of iron with tip: 13¼ inches

Length of cord: 6 feet

Core made of tellurium copper alloy

Tips: \$1.25 each      Set of 5: \$5.50

SIX INTERCHANGEABLE TIP STYLES Each \$1.25



#0 Light      #1 Medium      #3 Med. Lt.      #4 Heavy      #5 I-oz. Pot      #9 Production

*Ungar* ELIMINATES THE NEED FOR HEAVY, BULKY SOLDERING IRONS!

**HI-HEAT TIPS**



**NO. 1236** Pyramid Tip  
Packed 10 per box  
..... **\$1.25 ea.**



**NO. 1239** Chisel Tip  
Packed 10 per box.  
..... **\$1.25 ea.**



**5 INTERCHANGEABLE TIPS FOR ALL STANDARD SOLDERING**  
20-watt element. 110-120 volt A.C.-D.C. Ample copper ready to solder in 90 seconds.



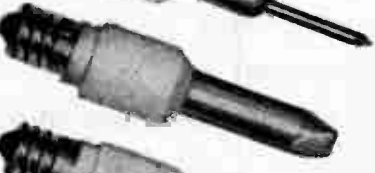
**NO. 538** Tellurium 1/8" Chisel Tip Packed 10 per box ..... **\$1.00 ea.**



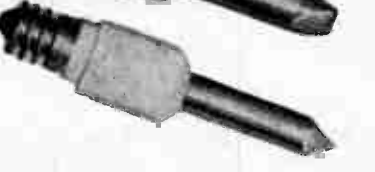
**NO. 537** Offset Tip Packed 10 per box **\$1.00 ea.**



**NO. 537-5** Tellurium 1/8" Straight Pencil Tip Packed 10 per box **\$1.00 ea.**



**NO. 539** Tellurium 3/8" Chisel Tip Packed 10 per box ..... **\$1.00 ea.**



**NO. 536** Tellurium 5/16" Pyramid Tip Packed 10 per box ..... **\$1.00 ea.**

Now, wherever there's a job for a big bulky iron, reach for a trim, slim Ungar Soldering Pencil instead. Increased wattage Hi-Heat Pre-Tinned Tips, combined with the famed light-as-a-feather Ungar Handle, make a handy high-speed, high-heat soldering instrument that'll perform on a par with your heavy irons. And there's no limit to the versatility of this amazing tool—from precision experimental work to high-speed production soldering—from TV to model trains to electric motors and appliances—you can't find a smaller tool to do a bigger job—and do it so much better.

*Ungar*

**ELECTRIC SOLDERING PENCILS**

FEATHER-LIGHT FOR HARD-TO-REACH JOBS  
HEAVY DUTY — PERFECTLY BALANCED

Check these features: Extra length brass shell firmly engages all threads, keeps heating unit tight; Spring action rivet assures positive contact always; Full length 65 strand, extra flexible cord; Cooler handle of durable molded plastic; Underwriters' listed; Ceramic separators for double safety.

**NO. 776** Handle and Cord Set only — Packed 25 per case. Price **\$1.00 ea.**

DISCOUNTS: \$1-\$9, 20%, \$10-\$99, 35%, \$100 OR MORE, 40% — PLEASE CONTACT YOUR JOBBER — WE DO NOT SELL DIRECT.

**UNGAR ELECTRIC TOOL CO., INC., LOS ANGELES 54, CALIFORNIA**

# WELLER SOLDERING GUNS

## FOR ALL YOUR SOLDERING



*Light*

**UNIVERSAL MODEL  
FOR ALL TYPES OF  
LIGHT SOLDERING**

### DUAL SPOTLIGHT

Built-in dual spotlight completely eliminates all shadows—locates the work quickly and shows you exactly what you are soldering.

### READY, AIM... SOLDER

Fast 5 second heat comes on the instant trigger is pulled. No wasted time or current. No need to unplug gun between jobs.

### TRIGGER ACTION

Just pull the trigger switch... model WS-100 has single heat 100 watts; model WD-135 offers dual heat with two switch positions 100 and 135 watts.

### ALL-PURPOSE

This universal model is ideally suited for all light soldering. It is also widely used by craftsmen and hobbyists for woodworking, leather tooling, plastic work, heating liquids, and many types of household repairs.

### LONGER REACH

Plus flexible tip which can be easily formed to slip through chassis wiring handles difficult, deep corner jobs with ease. Wellertip No. 7135, for models WS-100 and WD-135, is similar in design to tip type 7250 shown in the adjacent column. WELLERTIP No. 7135, package of 2 for 25c.



*Heavy*

**HEAVY-DUTY MODEL  
HANDLES ALL  
SOLDERING UP TO  
250 WATTS**

### DUAL HEAT

Model WD-250 has 200 watts normal heat on first switch position, and 250 watts instant heat on second trigger position. Model WS-200 provides 200 watts single heat.

### 5 SECOND HEAT

Pull the trigger switch, and solder. Fast 5 second heating eliminates waiting. Heat goes off automatically when trigger is released... no wasted time or current, no need to unplug gun between jobs.

### STREAMLINED

Streamlined design gives perfect balance and soldering ease. Improved transformer engineering provides light weight, compact unit with increased capacity and efficiency.

### INCREASED VISIBILITY

'Over and under' terminal positions assure maximum visibility with built-in spotlight.

### WELLERTIP



New, improved tip is standard with models WS-200 and WD-250. Chisel-shape tip has more copper and greater surface for faster heat transfer, and design provides bracing action for heavier soldering. WELLERTIP No. 7250, package of 2 for 35c.

### HANDY SOLDERING GUIDE

#### SOLDERING TIPS

*new edition, fully up-to-date is now available. 20 illustrated pages show ways to faster, easier soldering. Price 10c at your Distributor, or order direct.*

**WELLER**  
ELECTRIC CORP.

MODEL	WATTS	CYCLES	VOLTS	NET PRICE
WS-100	single heat 100	60	115	\$11.95
WS-200	single heat 200	60	115	12.95
WD-135	dual heat 100/135	60	115	13.95
WD-250	dual heat 200/250	60	115	14.95

U. S. Pat. No. 2405866, Other Pat. Pending.

Printed in U. S. A.



# KESTER FLUX-CORE SOLDER

*Standard for the Radio and TV Field*



- Kester Plastic Rosin-Core Solder
- Kester "Resin-Five" Core Solder
- Kester Radio Solder
- Kester Acid-Core Solder
- Kester "A" Flux-Core Solder
- Kester Nosput Flux-Core Solder
- Kester Knorust Flux-Core Solder
- Specialized Flux-Core Solders
- Solid Wire and Bar Solders
- Kester Preforms, Rings, Pellets, Washers, Ribbon
- External Rosin Soldering Fluxes
- Other Fluxes
- Kester Soldering Iron Brackets

**FOR PEAK SOLDERING EFFICIENCY, IT'S KESTER!** Kester offers every conceivable type of Solder product. Strand sizes as small as .008" diameter in Flux-Core Solder, unusual alloys and varying Flux contents or Core sizes.

**A COMPLETE TECHNICAL SERVICE.** If you're not getting peak efficiency or have a specific problem in your soldering operations, take advantage of the facilities of Kester's Technical Department. . . . It costs you nothing.

**STANDARD FOR INDUSTRY  
SINCE 1899**

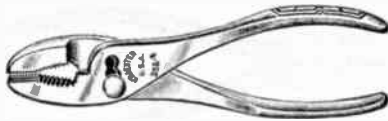


**KESTER SOLDER COMPANY**  
4201 Wrightwood Ave., Chicago 39, Illinois  
Factories Also At  
Newark, New Jersey • Brantford, Canada



# KRAUTER

The choice of skilled mechanics



## "GRIPITITE" COMBINATION PLIERS

The finest quality combination pliers. Designed for heavy duty. Slightly tapered nose, sharp deep milled teeth and grooved jaws for gripping cotter pins and wire. Knurled handles. The 8" and 10" sizes have three slip joint adjustments which give a wide range of parallel grips.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
356	5½ in.	Full Nickel	3½ lbs.	\$1.50	
356	6 in.	Full Nickel	5¼ lbs.	1.60	
356	8 in.	Full Nickel	8¾ lbs.	2.25	
356	10 in.	Full Nickel	14 lbs.	2.75	



## THIN NOSE COMBINATION PLIERS

The tapered jaws and thin nose of these pliers enable the mechanic to grip objects difficult to reach in tight, narrow working spaces. Knurled handles, milled gripping teeth and wire cutters.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
40	5 in.	Nickel Plated	2¼ lbs.	\$1.25	
40	6 in.	Nickel Plated	4¼ lbs.	1.25	



## MECHANICS' SIDE CUTTING PLIERS

Gripping pliers with side cutters. Tapered nose, milled teeth and grooved jaws for gripping cotter pins and wire. Knurled handles. The cutters are very handy for light wire work.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
1973	5½ in.	Full Nickel	3½ lbs.	\$2.50	
1973	7 in.	Full nickel	7¼ lbs.	2.75	



## LINEMEN'S SIDE CUTTING PLIERS

Designed for heavy work to meet the requirements of linemen. Drop forged from selected plier steel, skilfully hardened and tempered. Powerful wire cutters, a well balanced head and deep milled gripping jaw surface for holding and bending wire.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
1801	6 in.	Blue Temper	5¼ lbs.	\$2.60	
1801	7 in.	Blue Temper	7½ lbs.	3.00	
1801	8½ in.	Blue Temper	11¼ lbs.	3.85	



## ELECTRICIANS' SIDE CUTTING PLIERS

Used extensively in electric wiring of fixtures, appliances and other general repair work. Very popular with mechanics on production work where electric wiring is required in the finished product.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
1830	4 in.	Blue Temper	1½ lbs.	\$1.90	
1830	5 in.	Blue Temper	2¼ lbs.	2.10	
1830	6½ in.	Blue Temper	4¼ lbs.	2.25	
1830	7 in.	Blue Temper	6¾ lbs.	2.50	
1830	8 in.	Blue Temper	8¼ lbs.	2.85	



## IGNITION PLIERS

Very narrow head, serrated gripping teeth and well shaped handle grips. Three slip joint positions. Generally used on distributor, generator, magneto and carburetor work.

No.	Length	Finish	Wt. per doz.	Price	
				Each	Each
643	5 in.	Blue Temper	1 lb.	\$1.65	

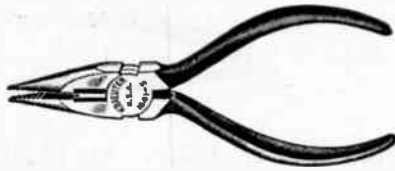
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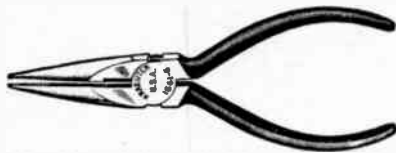
The choice of skilled mechanics



## SHORT CHAIN NEEDLE NOSE PLIERS

Short tapered jaws for bending and looping wire. The short nose gives these pliers extra leverage and gripping strength. Used for wiring switches and other open electric work.

No.	Length	Finish	Wt. per doz.	Price Each
1641	5 in.	Blue Temper	2¾ lbs.	\$2.25
1643	Same	without Cutter	2¾ lbs.	1.85



## LONG CHAIN NEEDLE NOSE PLIERS

Long tapered jaws and needle nose. Used extensively in all industries . . . from switchboard, electric fixture and appliance wiring . . . to motor ignition, aviation and general manufacturing work.

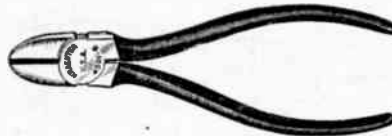
No.	Length	Finish	Wt. per doz.	Price Each
1661	6 in.	Blue Temper	3½ lbs.	\$2.50
1671	Same	without Cutter	3½ lbs.	2.00



## EXTRA LONG CHAIN NOSE PLIERS

Extra long tapered jaws with narrow pointed nose. Used extensively in automotive . . . electric . . . aviation and general production and repair work.  
Length of jaw 2¾ in.

No.	Length	Finish	Wt. per doz.	Price Each
1781	7 in.	Blue Temper	3¾ lbs.	\$2.90
1771	Same	without Cutter	3¾ lbs.	2.25



## DIAGONAL "OBLIQUE" CUTTING PLIERS

Made especially for close cutting. Used extensively in electrical work, radio manufacturing, telephone and automotive ignition work.

No.	Size	Finish	Wt. per doz.	Price Each
4501	4½ in.	Blue Temper	1½ lbs.	\$2.00
	5 in.	" "	2¾ lbs.	2.25
	6 in.	" "	3¾ lbs.	2.60



## WIRE STRIPPING DIAGONAL CUTTING PLIERS

Narrow head and notched cutters for stripping fine wire .062 diameter. The spring in the handle makes this a very fast cutting tool. Used by manufacturers of electric fixtures, appliances, radio and radio tubes.

No.	Length	Finish	Wt. per doz.	Price Each
2612	6½ in.	Blue Temper	3 lbs.	\$3.10



## "HIGH POWER" DIAGONAL CUTTING PLIERS

This type diagonal plier has the joint very close to the end of the cutter to give added leverage which makes cutting easy. A well balanced tool adaptable to the work in many trades.

No.	Length	Finish	Wt. per doz.	Price Each
4610	7 in.	Blue Temper	5¾ lbs.	\$2.45

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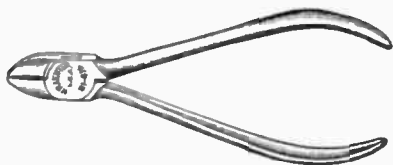
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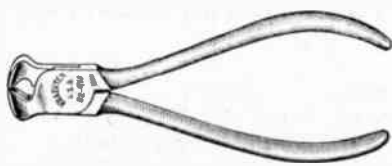
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## JEWELERS' DIAGONAL CUTTING PLIERS

Carefully edged cutting jaws. Designed for very fine close work.

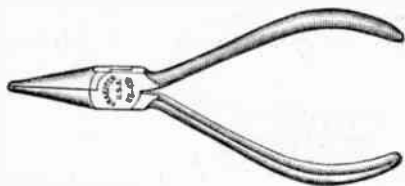
No.	Size	Finish	Wt. per doz.	Price Each
81	4½"	Full Polished	1 lb.	\$2.50



## JEWELERS' END CUTTING NIPPERS

Carefully edged cutting jaws. Designed for very fine close work.

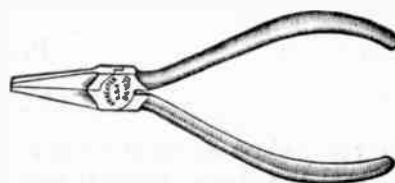
No.	Size	Finish	Wt. per doz.	Price Each
82	4½"	Full Polished	1½ lbs.	\$3.00



## JEWELERS' CHAIN NOSE PLIERS

Jaws 1/32" diameter at point of nose. No cutter. 1 1/16" smooth jaw. Supplied with milled jaws when specified.

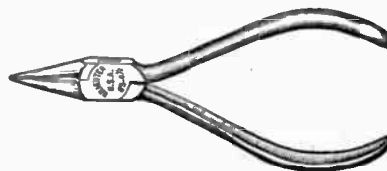
No.	Size	Finish	Wt. per doz.	Price Each
83	4½"	Full Polished	1¼ lbs.	\$2.25



## JEWELERS' FLAT NOSE PLIERS

Jaws ½" wide at point of nose. No cutter. 1 1/16" smooth jaw. Supplied with milled jaws when specified.

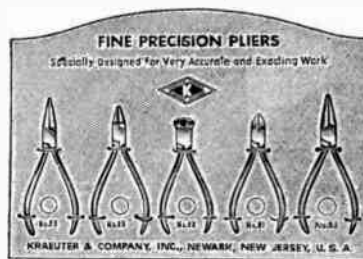
No.	Size	Finish	Wt. per doz.	Price Each
84	4½"	Full Polished	1½ lbs.	\$2.25



## JEWELERS' ROUND NOSE ROUND JAW PLIERS

Each jaw 1/32" diameter at point of nose. No cutter. 15/32" smooth jaw. Supplied with milled jaws when specified.

No.	Size	Finish	Wt. per doz.	Price Each
85	4½"	Full Polished	1¼ lbs.	\$2.25



## NO. 88 COUNTER DISPLAY

Size 12½" x 8¾" with easel back  
One each of Nos. 81, 82, 83, 84, 85. Fine precision made pliers for the hobby crafters—model builders—skilled technicians.

Price, complete \$15.00



## COMBINATION PATTERN SNIP

Drop forged from solid steel and skillfully heat treated for hard shearing blades. The bolt and nut assembly is machine finished with bearing surfaces properly hardened to resist wear.

No.	Length Cut	Finish	Wt. ea.	Price Each
K13	7" 1½"	Polished head Black handles	5½ oz.	\$2.00

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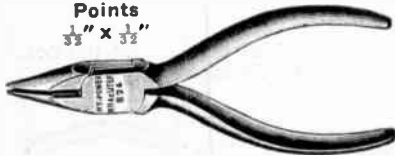
## Professional Line

### SPECIAL NEEDLE POINT PLIERS

Designed for light fine professional work. The special needle points of these pliers make them invaluable where delicate adjustments have to be made.

(NOSE OF THESE PLIERS NOT GUARANTEED)

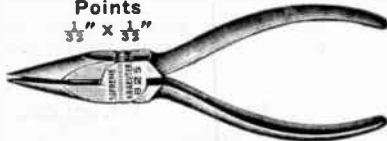
Needle Points  
1/3" x 1/32"



#### SHORT NOSE NEEDLE POINT PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
824	4 1/2 in.	Full Polished	1 1/2 lbs.	\$2.60
834	Same	without cutter		2.25

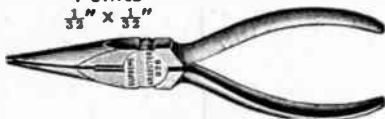
Needle Points  
1/3" x 1/32"



#### MEDIUM NOSE NEEDLE POINT PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
825	5 in.	Full Polished	2 1/4 lbs.	\$2.75
835	Same	without cutter		2.35

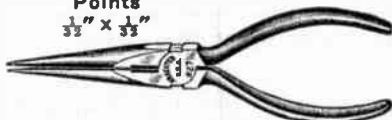
Needle Points  
1/3" x 1/32"



#### LONG NOSE NEEDLE POINT PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
826	6 in.	Full Polished	3 lbs.	\$3.00
836	Same	without cutter		2.60

Needle Points  
1/3" x 1/32"



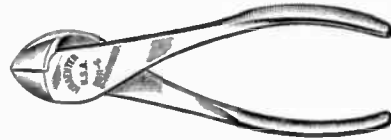
#### EXTRA LONG NOSE NEEDLE POINT PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
827	7 in.	Full Polished	3 3/4 lbs.	\$3.30
837	Same	without cutter	3 3/4 lbs.	3.00



#### NEEDLE POINT DIAGONAL CUTTING PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
5612	6 1/2 in.	Full Polished	3 lbs.	\$3.50
(With Stripping Notch)				



#### OVAL HEAD DIAGONAL CUTTING PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
5611	5 in.	Full Polished	2 1/4 lbs.	\$3.00



#### NEEDLE POINT DIAGONAL CUTTING PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
5601	4 1/2 in.	Full Polished	2 lbs.	\$2.60
5601	5 in.	Full Polished	2 3/4 lbs.	2.90
5601	6 in.	Full Polished	3 3/4 lbs.	3.20

Needle Points  
1/3" x 1/32"

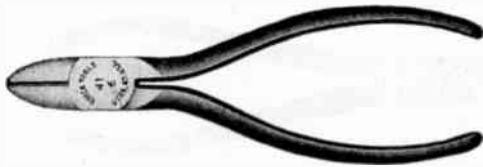


#### NEEDLE POINT SNIPE NOSE PLIERS

No.	Length	Finish	Price	
			Wt. per.doz.	Each
842	6 in.	Full Polished	2 1/4 lbs.	\$2.75

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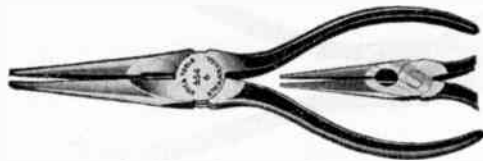


**No. 41 • Electricians' Diagonal Pliers—**

Hardened and tempered in oil. Special narrow nose for radio and electrical work.

No. 41 .....	4 in.	5 in.	6 in.
List Price .....	\$2.00	\$2.30	\$2.60

Can be furnished with insulation stripper.



**No. 654 • Utica Long Needle Nose Side Cutting Pliers**

This is a long, fine, spring-tempered nose side cutting pliers, drop forged and with hand-honed cutting knives.

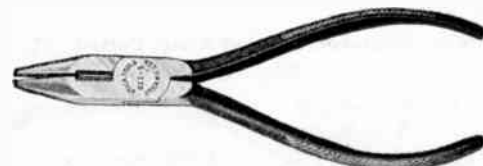
Utica Finish Size .....	5 in.	6 in.	7 in.
List Price .....	\$2.35	\$2.55	\$3.00



**No. 1033 • Utica Long Chain Needle Nose Pliers**

This is a long needle nose type of pliers without a side cutter. It has a spring-tempered needle nose with a fine balance for delicate work.

Utica Finish Size .....	5 in.	6 in.	7 in.
List Price .....	\$1.80	\$2.00	\$2.20

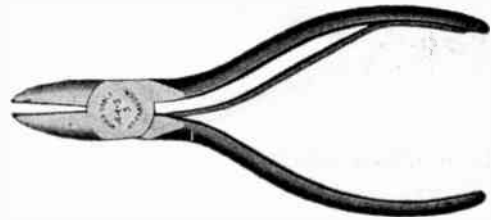


**No. 622 • Utica Short Chain Nose Mechanic's Pliers**

This pliers is a Shore Chain Nose Side Cutting Pliers, hand-honed cutting knives. It makes an all around Electrical Mechanic's pliers.

Utica Finish Size .....	5 inches
List Price .....	\$2.20

**No. 44S • Special Diagonal Pliers with Spring**



A slim nose cutting pliers designed especially for radio and electrical work. Extra fine hand honed edges permit nearly flush cuts.

Utica Finish Size .....	5 in.	6 in.
List Price .....	\$2.60	\$2.90



**No. 50 • Utica Standard Side Cutting Pliers**

An ideal tool for electrical work. Drop forged and skillfully tempered. Its cutting qualities are unsurpassed by any side cutting pliers.

Utica Finish Size .....	4 in.	5 in.	6 in.	7 in.	8 in.
List Price .....	\$1.90	\$2.00	\$2.20	\$2.45	\$2.80



**No. 777 • Utica Long Needle Nose Pliers**

This pliers has a long, half-round, spring-tempered nose for very fine work in assembling small electrical apparatus.

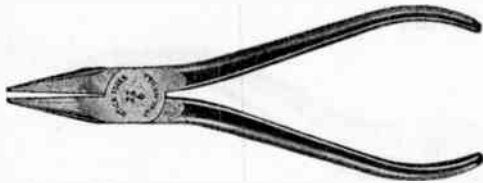
Utica Finish Size .....	6 inches
List Price .....	\$2.30



**No. 888 • Curved Needle Nose Pliers—**

This is a long curved spring-tempered Needle Nose Pliers for use in deep and narrow places. It may be used without turning or twisting the hand in the assembling of small fixtures, electrical apparatus, etc.

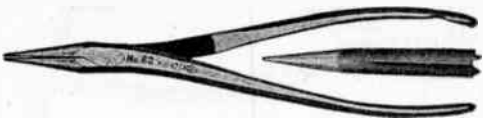
Utica Finish Size .....	6 inches
List Price .....	\$2.65



**No. 22 • Utica Chain Nose Pliers**

This is a Short Chain Nose Pliers forged from a fine quality of steel with fine points particularly adapted for the use of Jewelers, Opticians, Telephone Installers, Electricians and Radio Assemblers.

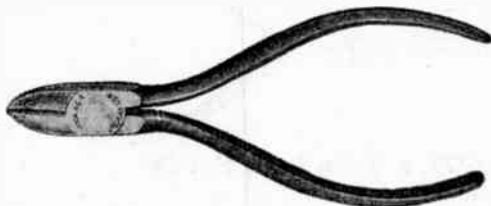
Utica Finish Size ..... 4 in. 4½ in. 5 in. 6 in.  
List Price ..... \$1.65 \$1.75 \$1.85 \$2.00



**No. 82 • Utica Chain Nose Wiring Pliers**

This is a special Radio Repair man's pliers, new in design, having a chain nose for those who prefer this type of construction.

Utica Finish Size ..... 8 inches  
List Price ..... \$2.60



**No. 46 • Midget Diagonal Pliers**

A small Diagonal for radio and electrical work. Hand honed edges with a slim nose for use in cramped quarters.

Utica Finish Size ..... 4 inches  
List Price ..... \$2.35

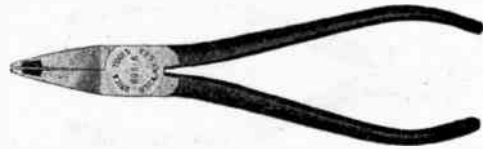


**No. 91 • Thin Adjustable 22½° Angle Wrenches, Electronically Hardened Steel**

Both the handle and jaw are drop forged from a high grade Alloy Steel, hardened and tempered in oil. Will not break or wear in the gear teeth and allow play in the wrench, permitting the jaw to slip off the nut.

It will give better service and last longer than any other wrench.

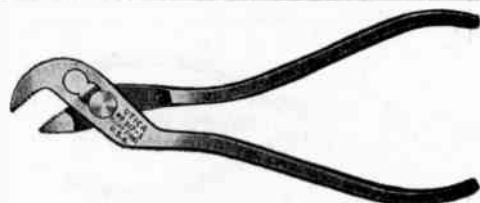
Size ..... 4 in. 6 in. 8 in. 10 in. 12 in. 15 in. 18 in.  
List Price... \$1.70 \$1.70 \$2.00 \$2.50 \$3.75 \$5.58 \$9.25



**No. 895 • Utica Radio Pliers**

This is a General Radio Repair Man's Pliers. It has a center cutter and flat scored nose for looping and bending.

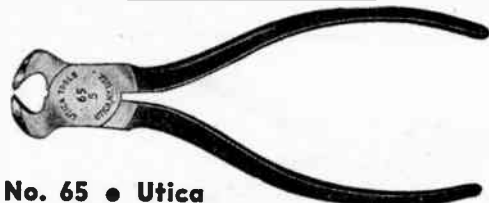
Utica Finish Size ..... 6 inches  
List Price ..... \$2.60



**No. 517 • Utica Ignition Pliers**

This ignition Pliers with its unique design will fit all ignition units, spring tempered. A great little tool for the hard to get at adjustments.

No. 517 ..... 5 inches  
List Price ..... \$1.60



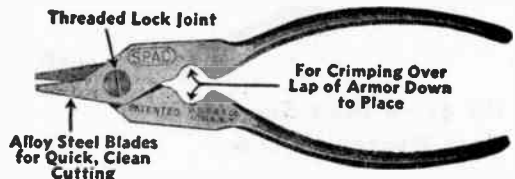
**No. 65 • Utica Jeweler's End Cutting Nippers**

This Nippers is forged from a fine grade of steel, carefully tempered. A light, strong End Cutting Nippers, used by Electricians and Machinists. The keen cutting edges and "Perfect Fit" handles make this a very popular tool.

Utica Finish Size ..... 4½ in. 5 in.  
List Price ..... \$2.65 \$2.85

**No. 100BX • Utica-Smith Pocket Armor Cutters**

No. 100BX—Utica-Smith Pocket Armor Cutters 7" Alloy Steel



The easiest, quickest tool made for cutting armored cable. Fully illustrated instructions packed with each tool.

Utica Finish Size ..... 7 inches  
List Price ..... \$4.00

Quality

**XCELITE**

Tools

REG. TRADE MARK

Creators of

**SHOCK-PROOF BREAK-PROOF AMBER PLASTIC HANDLE  
SCREWDRIVERS**



**ROUND BLADES**



**SQUARE BLADES**

Number	Size Blade	List	Weight Box of 10
R-3321	3/8" x 1"	\$.18	1/4 lb.
*R-3322	3/8" x 2"	.33	1/2 lb.
*R-3323	3/8" x 3"	.33	1/2 lb.
*R-3324	3/8" x 4"	.33	1/2 lb.
**R-181	1/8" x 1"	.33	1/2 lb.
*R-183	1/8" x 3"	.33	1/2 lb.
*R184 1/2	1/8" x 4"	.33	1/2 lb.
R-182	1/8" x 2"	.50	1/2 lb.
††R-184	1/8" x 4"	.55	1/2 lb.
††R-186	1/8" x 6"	.60	3/4 lb.
††R-188	1/8" x 8"	.66	1 lb.
††R-1810	1/8" x 10"	.75	1 lb.
R-5323	3/8" x 3"	.65	1 lb.
R-5324	3/8" x 4"	.65	1 lb.
R-5325	3/8" x 5"	.65	1 lb.
R-5328	3/8" x 8"	.80	1 1/4 lb.
R-3163	1/8" x 3"	.75	1 1/2 lb.
R-3164	1/8" x 4"	.80	1 1/2 lb.
R-3166	1/8" x 6"	.95	1 3/4 lb.
R-3168	1/8" x 8"	1.00	1 3/4 lb.
R-31610	1/8" x 10"	1.15	2 lb.
R-31618	1/8" x 18"	1.95	(pk. 1)
R-142	1/4" x 2"	.95	1 3/4 lb.
R-144	1/4" x 4"	1.00	2 lb.
R-146	1/4" x 6"	1.05	2 1/4 lb.
R-148	1/4" x 8"	1.15	2 1/2 lb.
R-1410	1/4" x 10"	1.25	2 3/4 lb.
R-5166	1/8" x 6"	1.25	3 1/2 lb.
R-5168	1/8" x 8"	1.35	4 lb.

Number	Size Blade	List	Weight Box of 10
S-183	1/8" x 3"	\$.50	1/2 lb.
S-184	1/8" x 4"	.50	1/2 lb.
S-185	1/8" x 5"	.50	1/2 lb.
†SH-183	1/8" x 3"	.66	1/2 lb.
†SH-184	1/8" x 4"	.66	1/2 lb.
†SH-185	1/8" x 5"	.66	1/2 lb.
S-3163	1/8" x 3"	.80	1 3/4 lb.
S-3164	1/8" x 4"	.85	1 3/4 lb.
S-3165	1/8" x 6"	1.00	2 lb.
S-3163	1/8" x 8"	1.05	2 lb.
S-31610	1/8" x 10"	1.20	2 1/4 lb.
S-142	1/4" x 2"	1.00	1 3/4 lb.
S-144	1/4" x 4"	1.05	2 lb.
S-146	1/4" x 6"	1.10	2 1/2 lb.
S-148	1/4" x 8"	1.20	3 lb.
S-5162	1/8" x 2"	1.05	2 lb.
S-5166	1/8" x 6"	1.30	3 3/4 lb.
S-5168	1/8" x 8"	1.40	4 1/4 lb.
S-51610	1/8" x 10"	1.55	4 3/4 lb.
S-51612	1/8" x 12"	1.65	5 1/4 lb.
S-388	3/8" x 8"	1.75	6 lb.
††S-3812	3/8" x 12"	2.50	1 1/4 lb.
††S-3818	3/8" x 18"	2.75	1 1/4 lb.
††S-7166	1/8" x 6"	1.90	1 1/4 lb.
††S-71612	1/8" x 12"	2.50	1 1/4 lb.
††S-71618	1/8" x 18"	2.75	1 1/4 lb.
S-1424	1/4" x 24"	2.50	1 1/4 lb.

\*\*24 of this number used on #24 display.  
 \*These numbers have 1/2" dia. handles.  
 †These numbers have 3/8" dia. handles. For insulated blades any size in round list add 25 cents to list price.  
 There's an Xcelite Screwdriver "sized" to fit every job.

Note: We have standardized our packages on the decimal system instead of in dozens, in accordance with Government practice. All screwdrivers and nut drivers will be packed ten in a box, except where otherwise noted (exceptions are large sizes or slow moving items). Weights given above are correct to the nearest quarter-pound limit.

**Stubbies**

S-3161	1/8" x 1"	\$.60	3/4 lb.
S-141	1/4" x 1"	.70	1 1/4 lb.
S-5161	1/8" x 1"	.70	1/4 lb.

††Large double-grip handles.  
 †Screwholding type used on SH-10 Display.

1  
in  
box



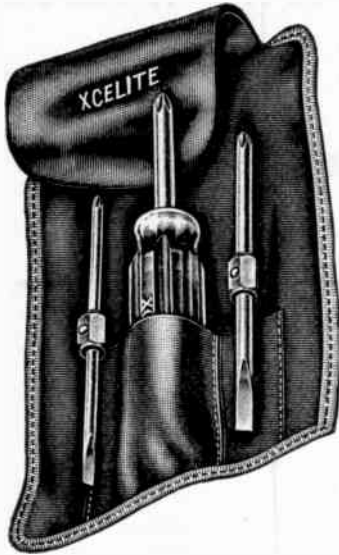
Quality

**XCELITE**

Tools

REG. TRADE MARK

## DUAL-PURPOSE SCREWDRIVERS



### IN ROLL KIT



No. CK-3...\$4.35 List  
Contains RB-1, RB-2,  
RB3 and Combination  
Handle.

No. CK-2...\$3.40 List  
Contains RB-1, RB-2  
and Combination  
Handle.

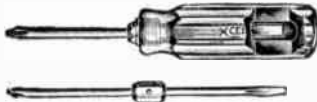
See Below for Indi-  
vidual Listing of  
Blade Sizes.



### IN PLASTIC BOX

No. BC22 Containing RB1, RB2 and Reg. Handle.....\$3.40  
No. BC23 Containing RB1, RB2, RB3 and Reg. Handle..... 4.35

### OR INDIVIDUALLY



#### BLADE COMBINATIONS (Please Order by Number)

No. 1—No. 1 Phillips and  $\frac{1}{8}$ " Xcelite.  
No. 2—No. 2 Phillips and  $\frac{1}{4}$ " Xcelite  
No. 3—No. 3 Phillips and  $\frac{1}{8}$ " Xcelite

#### COMPLETE (Regular Type)

No. CR1.....\$1.75  
No. CR2..... 1.75  
No. CR3..... 1.75

#### BLADES ONLY

(Regular Type) List Price  
No. RB1.....\$0.95  
No. RB2..... .95  
No. RB3..... .95

#### HANDLES ONLY

List Price  
No. 25 Regular.....\$0.80

#### STUBBY TYPE



#### COMPLETE (Stubby Type)

No. CS1.....\$1.50  
No. CS2..... 1.50

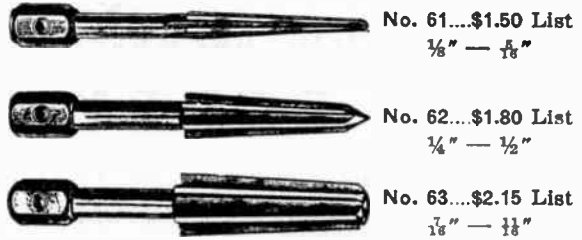
#### BLADES ONLY (Stubby Type)

No. SB1.....\$0.75  
No. SB2..... .75

#### HANDLES ONLY

No. 26 Stubby.....\$0.75

## DETACHABLE REAMERS



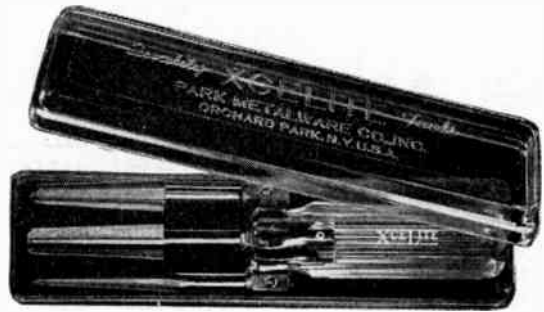
No. 61...\$1.50 List  
 $\frac{1}{8}$ " —  $\frac{1}{8}$ "

No. 62...\$1.80 List  
 $\frac{1}{4}$ " —  $\frac{1}{2}$ "

No. 63...\$2.15 List  
 $\frac{1}{8}$ " —  $\frac{1}{8}$ "

Detachable to fit your Xcelite No. 14 Nut Driver or "Combination-Detachable" Screwdriver! Short enough to get in where ordinary reamers can't! Enlarge holes in plastic, sheet metal, wood!

### REAMER SETS IN BOX



No. BR32 Contains Reg. Handle, No. 61 and 62 Reamers.....\$4.20  
No. BR33 Contains Reg. Handle, No. 61, 62 and 63 Reamers.... 6.95

### REAMERS IN PLASTIC ROLL KIT

No. RK-42 Contains Reg. Handle, No. 61 and 62 Reamers.....\$4.75  
No. RK-43 Contains Reg. Handle, No. 61, 62 and 63 Reamers.... 6.90

### Xcelite-Phillips

No.	Point Size	Length Blade	Diameter Blade	Weight	List Price
X-108	1	6"	$\frac{3}{8}$ "	2 lbs.	\$1.15
X-101	1	3"	$\frac{1}{8}$ "	1 1/4 lbs.	1.05
X-102	2	4"	$\frac{1}{4}$ "	2 lbs.	1.35
X-103	3	6"	$\frac{5}{8}$ "	3 lbs.	1.80
X-104	4	8"	$\frac{3}{8}$ "	3 lbs.	2.25
X-1010	1	10"	$\frac{1}{8}$ "	3 lbs.	1.60
X-1020	1	10"	$\frac{1}{4}$ "	3 lbs.	1.80

#### SHORT STUBBY TYPE

SX-101	1	$\frac{3}{8}$ "	$\frac{7}{8}$ lb.	1.00
SX-102	2	$\frac{1}{4}$ "	2 lbs.	1.10



### XCELITE Clutch Head Screwdrivers

Type G No.	Type A No.	Size	Diameter Blade	Length Blade	List Price Each
G-183	A-183	$\frac{1}{8}$ "	$\frac{1}{8}$ "	3"	\$1.20
G-5324	A-5324	$\frac{3}{16}$ "	$\frac{1}{4}$ "	4"	1.32
G-3164	A-3164	$\frac{1}{4}$ "	$\frac{1}{4}$ "	4"	1.32
G-146	A-146	$\frac{1}{4}$ "	$\frac{1}{8}$ "	6"	1.75
G-5166	A-5166	$\frac{3}{8}$ "	$\frac{3}{8}$ "	6"	2.15

Note: Both above types are the same size and the same price. Order by Number.

# Quality

# XCELITE

# Tools

REG. TRADE MARK

**No. 51 XCELITE Long Needle Nose and Side Cutter Plier**



List Price \$3.00

**No. 52 XCELITE Long Needle Nose (Without Side Cutter)**



List Price \$2.65

**No. 55 XCELITE Electricians' Diagonal Plier 5"**



List Price \$2.95

**No. 54 XCELITE Electricians' Diagonal Plier 4"**



List Price \$2.95

**No. 56 XCELITE Slim Needle Nose Plier**



List Price \$2.85

**No. 57 XCELITE Long Duck Bill Plier 7"**



List Price \$2.95

**No. 59 XCELITE Chain Nose Electricians' Plier**



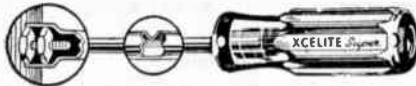
List Price \$3.20

**No. 60 XCELITE Side Cutting Plier 6"**



List Price \$2.85

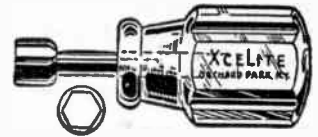
## HOLLOW SHAFT NUT DRIVERS



No. and Length Overall	Nut Size	Depth of Hole	Weight per Box	List	Insulated List
HS-8 6"	3/8"	5"	1 1/4 lbs.	\$1.15	\$1.50
HS-10 6"	1/2"	5"	1 lb.	1.15	1.50
HS-11 6"	5/8"	5"	1 lb.	1.15	1.50
HS-12 6"	3/4"	5"	1 lb.	1.15	1.50
HS-14 7"	7/8"	5"	1 1/4 lbs.	1.30	1.65
HS-16 7"	1"	5"	1 1/2 lbs.	1.35	1.70
HS-18 7"	1 1/8"	5"	1 3/4 lbs.	1.40	1.75
HS-20 7"	1 1/4"	5"	1 3/4 lbs.	1.65	2.00

## STUBBIES

3/4" Overall Length		
Number	Nut Size	List
S-8	1/4"	\$0.77
S-10	5/8"	.77
S-12	3/8"	.77



## XCELITE No. 3 De Luxe

## XCELITE NUT DRIVERS



6" Overall Length

6" Overall Length			9" Overall Length			
Number	Size	Polished	Chrome Plated	Number	Size	List
6	1/8"	\$0.80	\$0.90	A-6	1/8"	\$1.05
7	1/4"	.80	.90	A-7	1/4"	1.05
8	3/8"	.80	.90	A-8	3/8"	1.05
9	1/2"	.80	.90	A-9	1/2"	1.05
10	5/8"	.80	.90	A-10	5/8"	1.05
11	3/4"	.80	.90	A-11	3/4"	1.05
12	7/8"	.80	.90	A-12	7/8"	1.05
14	1"	1.25		A-14	1"	1.38
16	1 1/2"	1.25		A-16	1 1/2"	1.38

## RADIO AND ELECTRICAL KIT



Set includes:  
R-142, R-3163, R-5166, R-184, R-144, X-101 and R-3166.

No. 3 ..... \$7.75  
No. 3C Chrome Plated. \$8.50

Quality

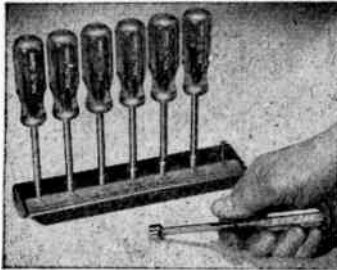
**XCELITE**

Tools

REG. TRADE MARK

**NO. 17 NUT DRIVER SET**

Amber Handles — Highly Polished Blades



Consisting of:

Number	Size
6	3/8"
7	7/16"
8	1/2"
9	9/16"
10	5/8"
11	11/16"
12	3/4"

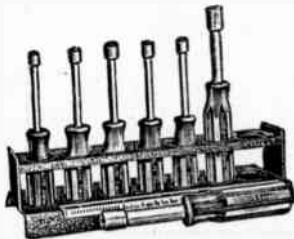
Complete with Rack ..... \$6.15

**NO. 137 NUT DRIVER SET**

With Colored Handles

Consisting of:

Number	Size	List
	Pol. Chr.	
127-6	Black 3/8"	.85 .95
127-8	Red 7/16"	.85 .95
127-10	Yellow 1/2"	.85 .95
127-11	Green 9/16"	.85 .95
127-12	Blue 5/8"	.85 .95
MS-16	Red 1/2"	1.35 1.45
MS-18	Brown 3/8"	1.40 1.50



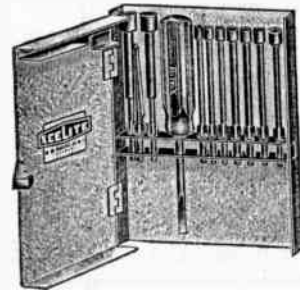
No. 137 Polished Finish.....\$3.15  
 No. 137C Chrome Plated..... 8.95

**No. 117 SET With Colored Handles**

Set consists of Nos. 127-6, 127-7, 127-8, 127-9, 127-10, 127-11, 127-12. Furnished in either full polished or chrome finish. Complete with same type stand as No. 127. Individual Drivers, Polished .... .85 Chrome.... .95

No. 117 Set Polished Finish .....\$7.00  
 No. 117C Chrome Plated ..... 7.70

**No. 99 MULTI-PURPOSE SET**  
 With the new patented STAY-LOCKED fastener



Pat. No. 2,487,174  
 Pat. No. 2,476,762

A sturdy metal kit with an attractive mottled finish. It opens like a book for display or as a work bench kit. Two holes in back permit fastening to wall or cabinet. Each unit slips easily into the universal handle and is held securely by the STAY-LOCKED fastener, yet they can be easily removed. All tools are CHROME PLATED.

ALSO AVAILABLE IN A PLASTIC ROLL KIT WITH EXTRA POCKET

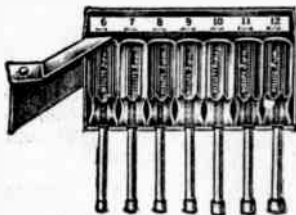


- 99-1 Multi-Purpose Handle
- 99-71 Reamer
- 99-81 Screwdriver Blade
- 99-6-7-8-9-10-11-12-14-16 Nut Drivers

**ACCESSORIES**

- 99-82 Reversible Phillips Blade
- 99-83 Reversible Reed and Prince Blade
- 99-72 Reamer

Number	Description	List
99	Comb. Set in Metal Box	\$10.95
99-PR	Comb. Set in Plastic Roll	10.95
99-1	Handle	.95
99-6 through 99-12	Nut Drivers	.65 ea.
99-14	Nut Driver	.90
99-16	Nut Driver	.90
99-71	Reamer 1/2" - 3/4"	1.50
99-72	Reamer 1/4" - 1/2"	1.80
99-81	Reversible Screw Driver	1.15
99-82	Reversible Phillips	1.15
99-88	Reversible Reed & Prince	1.15



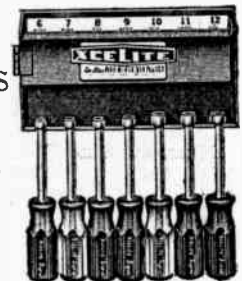
**Delux No. 127 NUT DRIVER SET**

NEW LARGER HANDLES — BRIGHTER COLORS  
 Makes Size Selection Easy.

Set consists of Nos. 127-6, 127-7, 127-8, 127-9, 127-10, 127-11, 127-12. Furnished in either full polished or chrome finish.

Individual Drivers, Polished....\$0.85 Chrome....\$0.95

No. 127 Polished Finish .....\$7.15  
 No. 127C Chrome Plated ..... 7.95



**READY FOR QUICK WORK**

The metal container can be fastened to the wall or work bench by screws which are inaccessible when locked. Red Wrinkle finish.

# PLUGS — MICROPHONE CONNECTORS

## Single Contact Female Microphone Connector



This microphone connector assures a completely shielded connection. All metal parts are chrome plated brass except spring. Used extensively for making connections from microphone to amplifier. When used with our part No. 505 and 500, any combination of connection can be arranged. Equipped with coupling ring.  
**No. 506 LIST PRICE 50c**

## Single Contact Male Microphone Connector



Similar to microphone connector No. 506 above except that it has a male thread  $\frac{5}{8}$ -27 and no coupling ring.  
**No. 505 LIST PRICE 40c**

## PHONE PLUG ADAPTER



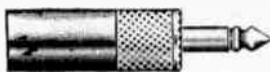
For use with the connector 506 shown at the top. Fits any standard phone jacks. No wiring or soldering necessary to make connection. Made of nickel plated brass.  
**No. 223 LIST PRICE 45c**

## DOUBLE PHONE PLUG



A two way phone plug. Will accommodate 2 sets head-phone tips or lugs. Fits all standard jacks. Handle is molded bakelite. Metal parts are nickel plated brass. Available in red and black.  
**No. 211 LIST PRICE 50c**  
**No. 224—Barrel only LIST PRICE 20c**

## SHIELDED TWO-WAY PHONE PLUG



Identical to our part No. 211 phone plug except that barrel is made of nickel plated brass for shielding purposes.  
**No. 221—Plug LIST PRICE 85c**  
**No. 222—Barrel only LIST PRICE 50c**

## MALE CHASSIS CONNECTORS



**No. 500.** This mike connector is used on the chassis or in the mike. It is the open circuit type. Mounts in a  $\frac{3}{8}$ " hole. Supplied with insulating washers, solderless lug and nut. Fits  $\frac{5}{8}$ -27 connections.

**No. 501.** Similar to above, except for shortening feature when disconnected. Ideal for use with multiple mixer amplifier. Supplied with insulating washers, lug and nuts.

**No. 502.** Is an open circuit pressure connector, similar to No. 500 except the spring contact protrudes to make pressure contact. Supplied with insulating washers, solderless lug and nuts.

**No. 507.** Similar to No. 500 except equipped with a linen base bakelite plate for mounting centers, 1-5/32".

**No. 508.** Similar to No. 500 except equipped with mounting plate for mounting centers 1-5/32".

**No. 509.** Similar to No. 502 except equipped with mounting plate for mounting centers 1-5/32".

No.	Contact Action	Mounting	Fig.	List Price
500	Open	Locknut	A	30c
501	Shorting	Locknut	B	40c
502	Pressure	Locknut	B	40c
507	Open	Bakelite Plate	C	30c
508	Shorting	Bakelite Plate	D	40c
509	Pressure	Bakelite Plate	D	40c

## SHIELDED PHONE PLUG



A newly designed shielded 2 conductor miniature phone plug that fits all standard jacks. One conductor is brought through the entire plug to the tip where the connection is soldered to a tinned insert. The other conductor is connected to a lug under the shell. The  $\frac{1}{4}$  inch shank is ground to very exacting tolerances. Supplied with an internal rubber cord grip.

**No. 231 LIST PRICE 55c**

## SHIELDED CAP



Used with our No. 500, 505 and 507 for shielding purposes. Equipped with ball chain to prevent loss.

**No. 504 LIST PRICE 55c**

## SIGNAL CORP PLUGS



**PL-55 PLUG**

PL-55 plug is a standard 2 conductor phone plug used by the U. S. Army, Signal Corps and U. S. Navy. It fits the standard Signal Corps JK-34A and JK-24 jacks. Supplied with solderless lugs.

**LIST PRICE .....\$1.35**



**PL-68 PLUG**

PL-68 plug is a 3 conductor microphone plug. It is designed for use with the JK-33 Signal Corps and Navy type jacks. Supplied with solderless lugs.

**LIST PRICE .....\$1.75**



**PL-47 PLUG**

PL-47 is a 2 conductor Signal Corps phone plug that fits all standard jacks and Signal Corps jacks numbers JK-24 and JK-34A. Generally used in switchboard work with braided cords. For strain relief the cord is threaded into the plug. Black handle.

**LIST PRICE .....\$2.00**

**PL-48 PLUG**

Identical to the PL-47 except for the red handle.

**LIST PRICE .....\$2.00**

# TELEGRAPH Apparatus Co.

412 SOUTH GREEN ST.

CHICAGO 7, ILLINOIS

# PLUGS • JACKS • CLIPS • SWITCHES • KNOBS

## TELEGRAPH APPARATUS CO.

### JK-24 JACK



JK-24 jack is a Signal Corps jack of distinctive design. Its construction assures an unvarying distance from the front of the sleeve to the jack springs. This jack is used generally in switch board work. The Signal Corps PL-55, PL-47 and PL-48 plugs are used in conjunction with this jack.

LIST PRICE .....\$1.75

### 3AG FUSE MOUNTINGS



Very sturdily constructed on  $\frac{1}{8}$ " black bakelite. Bottom rivets are recessed to permit mounting on metal. Clips are made of spring tempered nickel plated brass. Have center holes for mounting.

No.	Type	LIST PRICE
700	Single	20c
701	Double	30c
702	Clips Only Per C	\$1.75

### RCA TYPE PIN PLUG AND JACK



Used on RCA and most other receivers for a shielded phono connection. Can also be used as a shielded auto antenna connection.

No.	Des.	LIST PRICE
400	Pin Plug	9c
401	Shielded Jack	15c

### MINIATURE BAKELITE 7 PIN TUBE SOCKETS

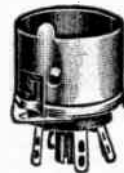
#### SADDLE MOUNTING



Bottom Mount  
With Center Shield



Top Mount  
With Center Shield



Top Mount Base and  
Center Shield

No.	Insulation	Mounting	LIST PRICE
1100	Black Bakelite	Bottom	\$0.20
1105	Mica Filled Bakelite	Bottom	.25
1107	Black Bakelite	Top	.20
1108	Mica Filled Bakelite	Top	.25
1150	Black Bakelite	Top	.30
1151	Mica Filled Bakelite	Top	.40

### BLANK WALL PLATES



**SINGLE WALL PLATE** made of chrome plated steel. Supplied with two oval mounting screws.

No. 1201 .....List Price 30c

**2 GANG WALL PLATE** identical to above except mounted with four mounting screws. Fits larger outlet box.

No. 1202 .....List Price 60c

### PL-54 PLUG



PL-54 plug is designed to fit only the Signal Corps and Navy type JK-26 jack. Supplied with solderless lugs.

LIST PRICE .....\$1.35

### SLIDE SNAP SWITCH

A very popular switch used in many radio circuits—tone — B.F.O. — phono, etc. Ribbed black bakelite handle. Housing is cadmium plated steel. High quality insulating material. Mounting centers  $1\frac{1}{2}$ ".



No.	Type	LIST PRICE
601	SPST	26c
602	SPDT	33c
603	DPST	38c
604	DPDT	49c

### FAHNESTOCK CLIPS



Millions of these spring binding posts clips have already been used. Grips wire with just enough pressure for good electrical contact. Made of spring tempered brass. \*Bronze

No.	Fig.	Length	Width	Max. Wire	Mtg. Hole	List Price Per C
3	A	$1\frac{1}{4}$ "	$\frac{3}{8}$ "	10	8	\$2.00
10	A	$\frac{3}{4}$ "	$\frac{1}{8}$ "	14	6	1.65
*15	B	$\frac{1}{2}$ "	$\frac{3}{8}$ "	16	4	1.55
9	C	$2\frac{1}{4}$ "	$\frac{3}{8}$ "	10	6	10.00
18	C	$1\frac{1}{2}$ "	$\frac{1}{8}$ "	14	6	9.00

### JK-26 JACK



JK-26 jack is a Signal Corps cable type jack. It is used on the end of a cord as a 2 conductor connection and is used only in conjunction with the PL-54 plug.

LIST PRICE .....\$1.25

### BANTAM OPEN AND CLOSED CIRCUIT JACKS



Fig. A

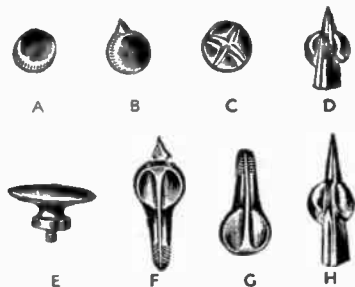


Fig. B

Small sized jacks that fit all standard phone plugs. The contact material is spring tempered nickel silver which will retain its resiliency permanently assuring good contact. Fits  $\frac{3}{8}$ " hole in panels up to  $\frac{1}{8}$ " thick. Supplied with nut and metal washer. Solder terminals tinned for easy soldering. Available in open and closed circuit.

No.	Fig.	Type	LIST PRICE
102	A	Open	40c
103	B	Closed	45c

### BAKELITE KNOBS



These knobs are all made of a very high grade bakelite and are available in various colors as listed below. All are for  $\frac{1}{4}$ " shafts and are set screw type, except for telegraph knob.

No.	Fig.	Color	Length	Dia.	List Price
1500	A	Black	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1501	A	Walnut	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1502	A	Red	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1503	A	Ivory	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	13c
1504	B	Black	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1505	B	Walnut	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1506	B	Red	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	12c
1507	B	Ivory	$\frac{3}{8}$ "	$1\frac{1}{8}$ "	13c
1508	C	Black	$\frac{3}{4}$ "	$\frac{3}{4}$ "	12c
1509	C	Walnut	$\frac{3}{4}$ "	$\frac{3}{4}$ "	12c
1510	C	Red	$\frac{3}{4}$ "	$\frac{3}{4}$ "	13c
1512	D	Black	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	15c
1513	D	Walnut	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	15c
1514	D	Red	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	21c
1515	D	Ivory	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	21c
1516	E	Black	Telegraph Knob		40c
1517	F	Black	2"		22c
1518	F	Walnut	2"		22c
1519	G	Black	$1\frac{3}{8}$ "	$\frac{3}{4}$ "	15c
1520	G	Walnut	$1\frac{3}{8}$ "	$\frac{3}{4}$ "	15c
1521	H	Black	2"		19c
1522	H	Walnut	2"		19c
1523	H	Red	2"		24c
1524	H	Ivory	2"		24c

# PLUGS • JACKS • CONNECTORS

TELEGRAPH APPARATUS CO.

## INSULATED SOLDERLESS PHONE TIP PLUG



A standard insulated solderless phone tip plug which fits our parts 101, 106, 109 phone tip jacks. Metal parts are nickel plated brass. Overall length 2-3/16". The high lustre insulated handle is 1" long. Available in red, black, green and yellow.

No. 202.....LIST PRICE 18c

## SOLDERLESS PHONE TIP PLUG



A standard solderless phone tip plug. Identical to No. 202 above, except for insulated handle.

No. 203.....LIST PRICE 10c

## INSULATED SOLDERLESS JR. PHONE TIP PLUG



A standard insulated solderless junior phone tip plug made to fit our parts #101 and 106 phone tip jacks. Metal parts are nickel plated brass. The high lustre insulated handle is 1" long. Available in black, red, green and yellow. Overall length 1 7/8".

No. 204.....LIST PRICE 18c

## SOLDERLESS JR. PHONE TIP PLUG



A standard solderless junior phone tip plug identical to No. 204 above except for insulated handle.

No. 205.....LIST PRICE 10c

## Insulated Solderless SPRING BANANA PLUG



This insulated non-collapsible solderless spring banana plug is designed to give the greatest area of contact. Connection is made by a side set screw.

Metal parts are nickel plated brass except the four leaf banana spring which is nickel plated phosphor bronze. The high lustre insulated handle is 1" long. Available in red, black, green and yellow. Overall length 1-11/16".

No. 208.....LIST PRICE 20c

## Giant Banana Plug & Jack



Designed to handle heavy high frequency currents. Made of nickel plated spring brass.

No. 225—Jack LIST PRICE 30c  
226—Plug with threaded shank 35c  
227—Plug with 10-32 hole w/ih screw 35c

## SPRING BANANA PLUG INSULATED



In this spring banana plug no metal parts are exposed around the insulated handle. Connection is made by soldering to special type tubular lug which is an integral part of metal body. Non-collapsible four leaf banana spring gives maximum area of contact. Metal parts are nickel plated brass except banana spring which is nickel plated phosphor bronze. The high lustre insulated handle is 1" long. Available in red, black, green and yellow.

No. 209.....LIST PRICE 18c

## INSULATED SOLDERLESS SPRING BANANA PLUG

(INTERNAL SOLDERLESS FASTENER)



An insulated spring banana plug identical in appearance to our part No. 209 except that connection is made to an internal solderless fastener. The high lustre insulated handle is available in red, black, green and yellow.

No. 210.....LIST PRICE 20c

## Insulated Phone Tip Jack



An insulated phone tip jack which makes very positive contact. Contact springs are made of phosphor bronze. Metal parts are nickel plated brass. The high lustre insulated head is 3/8" in diameter. Available in red, black, green and yellow.

Fits 1/4" hole in panels up to 1/4" thick. Supplied with nut and insulating washer.

No. 101.....LIST PRICE 15c

## PHONE TIP JACK



A phone tip jack identical to our part No. 101 above except that it has a non-insulated 5/16" hex head. Metal parts are nickel plated brass.

Fits 1/4" hole in panels up to 3/8" thick.

No. 106.....LIST PRICE 10c

## Open Circuit Phone Jack



Made to fit all stand-phone plugs. Contact spring made of nickel plated phosphor bronze and body made of nickel plated brass. Highest quality insulating material used. Fits 3/8" hole in panels up to 3/16" thick. Supplied with one metal washer.

No. 100.....LIST PRICE 30c

## SPRING BANANA PLUG



This spring banana plug is used extensively for plug-in coils, etc. Greater surface contact gives low RF resistance. Threaded shank is 6-32 thread, 3/8" long. Overall length 1-3/16". All metal parts are nickel plated brass except the four leaf banana spring which is nickel plated phosphor bronze. Supplied with soldering lug.

No. 206.....LIST PRICE 11c

## SPRING BANANA PLUG



Identical to our part No. 206 above except that threaded shank is 3/4" long.

No. 207.....LIST PRICE 12c

## SPRING BANANA PLUG



Identical to No. 206 spring banana plug except that instead of threaded shank it has a female 6-32 thread. Supplied with soldering lug and 6-32 screw.

No. 212.....LIST PRICE 12c

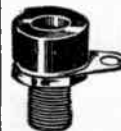
## BANANA JACK



A standard banana jack made of nickel plated brass. Overall length 5/8". Fits 1/4" hole in panel. Supplied with solder lug and nut.

No. 105.....LIST PRICE 9c

## INSULATED BANANA JACK



All metal parts are nickel plated brass. The high lustre insulated head is available in red, black, green and yellow. Fits 1/4" hole in panels up to 3/8" thick. Supplied with solder lug, insulated washer and nut.

No. 107.....LIST PRICE 15c

## Insulated Combination Banana Plug & Phone Tip Jack



An insulated combination banana plug and phone tip jack made to fit our parts Nos. 206, 207, 202, 203, 208, 209, 210, 212, and 220. The phosphor bronze contact springs assure positive contact. Fits 1/4" hole in panels up to 3/8" thick. The high lustre insulated head is available in red, black, green and yellow.

No. 108.....LIST PRICE 20c

## STANDARD PHONE TIP



phone cords.

A standard phone tip made of nickel plated brass. Used extensively for connections on head

No. 220.....LIST PRICE, PER 100 \$2.00

# TEST PRODS • SHAFT COUPLINGS • CLIPS

TELEGRAPH APPARATUS CO.

## AUTO ANTENNA CONNECTOR Instantly Detachable



Comes apart by slight twist. Makes an ideal single contact shielded connector.  
No. 402 LIST PRICE 10c

## AUTO FUSE CONNECTOR



Used in the battery lead of auto radio for protection. Fits a 3AG type fuse.  
No. 403 LIST PRICE 14c

## Insulated Alligator Clips



Sturdy clips made with thin jaws, fine meshing teeth and strong spring to assure hard bite. Handles 1" long.

No. 333—Red LIST PRICE 20c  
No. 334—Black LIST PRICE 20c

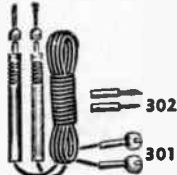
## PANEL BEARING ASSEMBLY



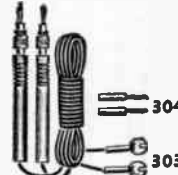
The accurately reamed hole in bearing assures smooth, non-binding operation. Equipped with bowed spring washer which eliminates sliding forward and backward. Shaft is 1/4" in diameter. Fits 3/8" hole in panels up to 1/4" thick. Made of brass.

No. 1022—3" Shaft LIST PRICE 35c  
No. 1023—6" Shaft LIST PRICE 50c

## DE LUXE FINGER GRIP PHONO-NEEDLE AND PHONE TIP TEST LEADS



Needle Point



Phone Tip Point

A deluxe test lead set with a ribbed finger grip will eliminate fatigue and slipping. Made of high quality insulating material 6 1/2" long, one each red and black. Supplied with a good grade of true kinkless wire 48" long. Available with phone tips or spade lugs on end as illustrated.

No.	Type	LIST PRICE PER SET
301	Spade lugs	\$1.20
302	Phone tips	1.20
303	Spade lugs	1.20
304	Phone tips	1.20

## PANEL BEARING



Accurately machined bearing made to fit 1/4" shafts. Fits 3/8" hole in panels up to 1/4" thick. Supplied with one mounting nut. Body made of brass.

No. 1021 LIST PRICE 15c

## SHAFT EXTENDERS, COUPLINGS AND REDUCERS



A



B



C

EXTENDER FIG. A					
Brass No.	Insulated No.	Hole Dia.	Shaft Dia.	Overall Length	List Price
1014	914	3/8"	1/4"	1 1/8"	18c
1015	915	1/4"	1/4"	1 1/8"	18c
1017	917	1/4"	3/8"	1 1/8"	18c

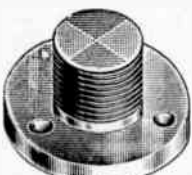
EXTRA LENGTH EXTENDER					
No. 1016		1/4"	1/4"	1 3/4"	25c

COUPLING FIG. B					
Brass No.	Insulated No.	Hole Dia.	Hole Dia.	Overall Length	List Price
1011	911	1/4"	to 3/8"	3/4"	18c
1012	912	1/4"	to 1/4"	3/4"	18c

REDUCER FIG. C.		
No. 1009	Reduces a 3/8" hole to 1/4" hole	LIST PRICE 10c

BRASS AND FIBRE 1/4" SHAFTING			
No. 1018	Brass 6" Long	1/4" Dia.	LIST PRICE 20c
No. 1019	Brass 12" Long	1/4" Dia.	LIST PRICE 40c
No. 1024	Fibre 6" Long	1/4" Dia.	LIST PRICE 25c
No. 1025	Fibre 12" Long	1/4" Dia.	LIST PRICE 50c

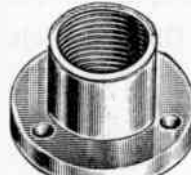
## Microphone Base Flanges & Extension Rods



Male Type



New mike stand items for which there has long been a demand. With the male type Base Flange the microphone can be attached directly to the desk, table, pulpit, etc.



Female Type

No.	Type	LIST PRICE
No. 515	Male Flange	\$0.75
No. 516	Female Flange	.75
No. 517	6" Extension Rod	\$0.75
No. 518	12" Extension Rod	1.00

## DE LUXE FINGER GRIP PHONO-TIP TEST PROD

REMOVABLE PHONO-NEEDLE CHUCK



A ribbed finger grip phono-tip test prod identical to the prod used in the De Luxe test lead at the left.

No.	Color	Length	LIST PRICE
311	Red	4 1/2"	45c
312	Red	6 1/2"	50c
313	Black	4 1/2"	45c
314	Black	6 1/2"	50c

## DE LUXE FINGER GRIP SOLDERLESS TIP TEST PROD



Identical to the above except prods are equipped with solderless phone tips.

No.	Color	Length	LIST PRICE
319	Red	4 1/2"	45c
320	Red	6 1/2"	50c
321	Black	4 1/2"	45c
322	Black	6 1/2"	50c

## NEEDLE POINT TEST PRODS REMOVABLE PHONO-NEEDLE CHUCK



Test prods are made of non-breakable extruded plastic and available in red and black. Chuck can be removed from prod as well as phono-needle from chuck. All brass parts are nickel plated.

No.	Color	Length	List Price
315	Red	4"	35c
316	Red	6"	40c
317	Black	4"	35c
318	Black	6"	40c

## SOLDERLESS TIP TEST PRODS



Identical to above except that test prods are equipped with solderless phone tips.

No.	Color	Length	List Price
323	Red	4"	35c
324	Red	6"	40c
325	Black	4"	35c
326	Black	6"	40c

## PHONO-NEEDLE AND PHONE TIP TEST LEADS



Solderless Tip Type Phono Tip Type

Prods are made of non-breakable extruded plastic, 4" long, one each red and black. Supplied with rubber covered kinkless wire 48" long. Insulated for high voltage. Available with non-insulated phone tips, spade lugs or alligator clips as illustrated.

No.	Type	LIST PRICE
305	Alligator Clips	\$1.10
306	Spade Lugs	1.00
307	Phone Tips	1.00
327	Spade Lugs	1.00
328	Phone Tips	1.00

# VACO PRODUCTS COMPANY · CHICAGO 11, ILLINOIS · U. S. A.



Hand Forged Chrome Vanadium Screw and Nut Drivers With Ambery!® S/B\* (Slo-Burn) Fire Safe Break and Shock Proof Handles

\*Trade Marks Registered U. S. Pat. Off.

## ROUND BLADE SCREW DRIVERS



Pocket Styles\*—3/32" & 1/8" Blades.  
\*High carbon tool steel blades only.



Electrician and Regular Cabinet Styles — 3/16" Blades.

Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
A 010	13/32" x 13/4"	3/32" x 1 5/8"	1/4 lb.
A 130-2	1/2" x 17/8"	1/4" x 2"	1/2 lb.
A 130-3	1/2" x 17/8"	1/4" x 3"	2/3 lb.
A 110-2	1/2" x 2 1/2"	3/32" x 2"	3/4 lb.
A 110-3	1/2" x 2 1/2"	3/32" x 3"	1/3 lb.

Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
A 316-3	7/8" x 3 1/2"	3/16" x 3"	1 1/4 lbs.
A 316-4	7/8" x 3 1/2"	3/16" x 4"	1 1/2 lbs.
A 316-6	7/8" x 3 1/2"	3/16" x 6"	1 3/4 lbs.
A 316-8	7/8" x 3 1/2"	3/16" x 8"	2 lbs.
A 316-10	7/8" x 3 1/2"	3/16" x 10"	2 1/2 lbs.

### Electrician and Cabinet Styles—1/8" Blades.

Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
A 216-2*	5/8" x 2 3/4"	1/8" x 2"	3/4 lb.
A 216-4*	5/8" x 3"	1/8" x 4"	1 lb.
A 216-6	5/8" x 3"	1/8" x 6"	1 1/4 lbs.
A 216-8	5/8" x 3"	1/8" x 8"	1 1/2 lbs.
A 216-10	5/8" x 3"	1/8" x 10"	1 3/4 lbs.

### General Service Round Blade Styles — 1/4" Blades.

Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
A 416-4	1" x 3 5/8"	1/4" x 4"	2 1/4 lbs.
A 416-5	1" x 3 5/8"	1/4" x 5"	2 1/2 lbs.
A 416-6	1" x 3 5/8"	1/4" x 6"	2 3/4 lbs.
A 416-8	1" x 3 5/8"	1/4" x 8"	3 1/4 lbs.
A 416-10	1" x 3 5/8"	1/4" x 10"	3 1/2 lbs.

## Heavy Duty General Service Round Blade Styles — 5/16" Blades.

Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
A 516-6	1-1/16" x 4"	5/16" x 6"	4 lbs.
A 516-8	1-1/16" x 4"	5/16" x 8"	4 1/2 lbs.
A 516-10	1 3/8" x 4 1/4"	5/16" x 10"	5 1/2 lbs.
A 516-12	1 3/8" x 4 1/4"	5/16" x 12"	6 1/2 lbs.

## RADIO ALIGNING TOOLS NON-METALLIC ALIGNER

No metal — completely non-capacitance. Bone fibre blade may be repointed as required.



Stock Number	Handle Diameter and Length	Blade Diameter and Length	Weight per Doz.
AT 55	1/2" x 2 1/2"	3/16" x 4"	3/4 lb.

## VACO Super Hard NUT DRIVERS

Color Coded Hollow Handles For Quick Size Identification. For Use on Hardened Steel Self-Threading Sheet Metal Screws, Etc.



Stock Number	Hexagon Size (Across Flats)	Handle Diameter and Length	Color Code	Fits Machine Screw Nos.	Weight per Doz.
S 61	3/16"	1" x 3 5/8"	Brown	2 and 3	1 lb.
S 62	1/4"	1" x 3 5/8"	Red	4	1 lb.
S 103	5/16"	1" x 3 5/8"	Green	5 and 6	1 lb.
S 114	11/32"	1" x 3 5/8"	Ivory	8	1 lb.
S 125	3/8"	1" x 3 5/8"	Blue	10	1 lb.
S 146	7/16"	1" x 3 5/8"	Orange	12 and 1 1/4"	1 lb.
S 167	1/2"	1" x 3 5/8"	Yellow	5/16"	1 lb.

## ALL HOLLOW SHAFT NUT DRIVERS



Stock Number	Hexagon Size (Across Flats)	Handle Diameter and Length	Weight per Doz.
S 160	1/2"	1" x 3 5/8"	3 lbs. 4 oz.
S 160	9/16"	1" x 3 5/8"	3 lbs. 8 oz.

## VACO EXTRA HARD NUT DRIVERS

Size Stamped on Each Shaft for Easy Identification  
Solid Ambery! S/B Fire Safe Handles



Stock Number	Hexagon Size	Handle Diameter and Length	Weight per Doz.
S 17	5/32"	7/8" x 3 1/2"	1 lb. 8 oz.
S 6	3/16"	7/8" x 3 1/2"	1 lb. 10 oz.
S 7	7/32"	7/8" x 3 1/2"	1 lb. 11 oz.
S 8	1/4"	7/8" x 3 1/2"	1 lb. 12 oz.
S 9	9/32"	7/8" x 3 1/2"	1 lb. 14 oz.
S 10	5/16"	7/8" x 3 1/2"	2 lbs.
S 11	11/32"	7/8" x 3 1/2"	2 lbs. 8 oz.
S 12	3/8"	7/8" x 3 1/2"	2 lbs. 12 oz.
S 14	7/16"	7/8" x 3 1/2"	2 lbs. 14 oz.
S 15	15/32"	7/8" x 3 1/2"	2 lbs. 15 oz.
S 16	1/2"	7/8" x 3 1/2"	3 lbs.

### Extra Large Size

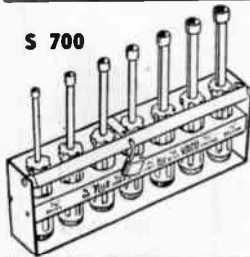
Stock Number	Hexagon Size	Handle Diameter and Length	Weight per Doz.
S 17	17/32"	1-1/16" x 4"	4 1/2 lbs.
S 18	9/16"	1-1/16" x 4"	4 1/2 lbs.
S 19	19/32"	1-1/16" x 4"	4 1/2 lbs.
S 20	1"	1-1/16" x 4"	4 1/2 lbs.



## No. S 500 METAL BENCH HOLDER

Furnished with 1 each of five most popular sizes: S 8, S 10, S 11, S 12, S 14. Weight each . . . 1 1/2 lbs.

## S 700



## VACO WALL OR BENCH PADLOCK TYPE NUT DRIVER STAND

Holds One Complete Driver Outfit . . . from 3/16" to 1/2".

Stock Number	Weight (Packed)
S 700	2 1/4 lbs.
S 700 (Stand only)	1 lb. 2 oz.

## VACO AMBERYL ELECTROLYTIC CONDENSER NUT DRIVERS



Packed 4 each of following sizes in display box, or assorted as desired:  
No. S 32 for 31/32" Nuts  
No. S 34 for 1" Nuts  
No. S 36 for 1-5/32" Nuts

Weight per box . . . 3 lbs.

## AMBERYL HANDLE PHILLIPS SCREW DRIVERS



Stock Number	Point Number	Handle Diameter and Length	Blade Diameter and Length	Takes Screws Number	Weight per Doz.
P 01	1	3/4" x 3"	1/4" x 2 1/2"	4 and smaller	3/4 lb.
P 1	1	7/8" x 3 1/2"	3/16" x 3"	4 and smaller	1 1/4 lbs.
P 2	1	1" x 3 5/8"	1/4" x 4 3/4"	5 to 9	1 1/2 lbs.
P 3	3	1-1/16" x 4"	5/16" x 6"	10 to 16	3 1/2 lbs.
P 4	4	1-3/16" x 4 1/2"	3/8" x 8"	15 and larger	6 lbs.
P 5	2	1 1/4" x 5 1/8"	3/4" x 1 1/4"	5 to 9	1 1/4 lbs.
P 6	1	1 1/4" x 5 1/8"	3/16" x 1 1/4"	4 and smaller	1 lb. 2 oz.
P 12†	1	1 1/2" x 2 1/2"	1/4" x 2 1/2"	4 and smaller	11 oz.
P 101‡	1	3/4" x 3"	3/16" x 3"	4 and smaller	1 1/4 lbs.

## WOOD HANDLE PHILLIPS SCREW DRIVERS

High Carbon Tool Steel Blades . . . Chrome Vanadium Blades Also Available.



Stock Number	Handle Diameter and Length	Blade Diameter and Length	Takes Screws Number	Weight per Doz.
WP 10	1" x 4"	3/16" x 3"	4 and smaller	1 1/4 lbs.
WP 20	1 1/4" x 5"	3/8" x 4 3/4"	5 to 9	2 1/2 lbs.
WP 30	1 1/4" x 6"	5/16" x 6"	10 to 16	3 1/4 lbs.
WP 40	1 5/8" x 7"	3/8" x 8"	15 and larger	6 lbs.
WP 60 (Stub)	1-5/16" x 2 1/4"	1/4" x 2 1/4"	5 to 9	1 lb. 2 oz.
WP 60 (8"ub)	1-5/16" x 2 1/4"	3/16" x 1 1/4"	4 and smaller	1 lb.

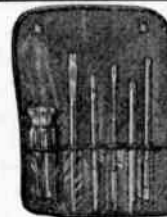


## VACOMBO Nut Setter Kit No. ZS 60

Kit Consists of:

- 1 — ZH 1 Ambery! Handle with Clutch
- 1 — ZS 8 Hex. Wrench 1/4" x 3"
- 1 — ZS 10 Hex. Wrench 5/16" x 3"
- 1 — ZS 11 Hex. Wrench 11/32" x 3"
- 1 — ZS 12 Hex. Wrench 3/4" x 3"
- 1 — ZS 14 Hex. Wrench 7/16" x 3"
- 1 — ZR 77 Seven Section Leatherette Tool Roll

Also Available — 6" Extension No. ZX 56  
3/16" Hex. Wrench No. ZS 6  
1/2" Hex. Wrench No. ZS 16  
Weight packed . . . 9 oz.



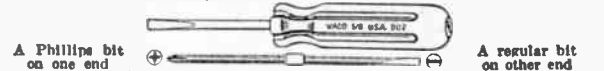
## VACOMBO Screw Driver Kit No. ZB 50

Kit Consists of:

- 1 — ZH 1 Ambery! Handle with Clutch, 1" x 3 5/8"
- 1 — ZB 24 Blade 1/4" x 4" Out of Handle
- 1 — ZB 34 Blade 3/16" x 4" Out of Handle
- 1 — ZB 45 Blade 1/4" x 5" Out of Handle
- 1 — ZP 14 Blade No. 1 Phillips x 4"
- 1 — ZP 24 Blade No. 2 Phillips x 4"
- 1 — ZR 77 Seven Section Leatherette Tool Roll

Also Available — 6" Extension No. ZX 56  
Specifications: Ambery! S/B (Slo-Burn) Fire Safe Handle — Oil Tempered Chrome Vanadium Blades — Bright Cadmium Rust-Proof Plated Finish.  
Weight packed . . . 8 oz.

## VACO DUPLEX REVERSIBLE SCREW DRIVERS with Ambery! S/B (Slo-Burn) Plastic Handle



A Phillips bit on one end  
TWO SIZES  
DU2 Light Duty —  
DUH4 Heavy Duty  
Chrome vanadium steel blade. Long lasting Ambery! handle of high dielectric and impact strength . . . shock and break resistant . . . Impervious to most alkalies and acids.

A regular bit on other end

Specifications  
Handle Diameter and Length  
DU 2 1" x 3 5/8"  
DUH 4 1 1/16" x 4"

No. 2 Phillips 3/16" x 2 3/4"  
Regular 3/16" x 2 3/4"  
No. 2 Phillips 1/4" x 2 3/4"

A Flip of the Wrist Does It . . . From Phillips to Regular.

Precision engineered blade may easily be inserted or removed and reversed to provide either a regular or Phillips bit. Ideal for automobiles, radios, refrigerators, household utilities, toys, etc., where straight slot screws and cross slot screws are frequently used in combination.






# Harry Davies Molding Co.

Molders of Plastics

1428 NORTH WELLS STREET • CHICAGO 10, ILL.

STANDARD COLORS FOR DAVIES KNOBS: Black, Walnut, Red or Ivory. Others to order. Quality radio knobs for standard 1/4" shaft. Set screw, spring, or knurled hole mounting, or 1/4" brass bushing.

## ELECTRONIC INSTRUMENT KNOBS

						
Type No.	Diameter	Height	Type No.	Diameter	Type No.	Diameter
4100	1 1/8"	5/8"	4100-P	1 1/8"	4104	1 1/8"
4101	1 3/8"	1 1/16"	4101-P	1 3/8"	4106	1 3/8"
4102	1 5/8"	3/4"	4102-P	1 5/8"	4108	1 5/8"
4103	2 3/32"	7/8"	4103-P	2 3/8"	4109	2 3/8"
				Pointer length from shaft center		Skirt diameter
				7/8"		1 1/2"
				1 1/16"		1 1/2"
				1 1/16"		3"
				1 9/16"		2 1/16"



No. 1400. (With pointer). Height 1 3/32". Diameter 1 1/16".  
No. 1450. (No pointer). Height 1 3/32". Diameter 1 1/16".  
Set screw, spring, or knurled hole mounting.



No. 1700.  
Height 1 9/32". Diameter 3/4".  
Set screw, spring, or knurled hole mounting.



No. 2500.  
Height 3/4". Diameter 3/4".

No. 2600.  
Height 7/8". Diameter 7/8".  
Set screw, spring, or knurled hole mounting.



No. 2965.  
Short Shank. Dia. 7/8"; Hgt. from 1/2" to 1 1/2".  
Medium Shank. Dia. 7/8"; Hgt. from 9/16" to 1 1/2".  
Long Shank. Dia. 7/8"; Hgt. from 9/16" to 1 1/2".

This type knob can be supplied with arrow; Off-On; Tuning; Volume; Tone; Batt-Elec.; Band Switch; Radio-Phono, or Dot markings.  
Set screw, spring, or knurled hole mounting.



No. 3008.  
Dia. 1 1/4"; Hgt. 3/4".

No. 3009.  
Dia. 1 1/2"; Hgt. 3/4".

No. 3000.  
Long Shank Dia. 1 3/4"; Hgt. 3/4", 1", 1 1/4" and 1 1/2".

Short Shank. Dia. 1 3/4". Hgt. 3/4", 1", 1 1/4" and 1 1/2".

1/4" malded hole or brass insert. Plain or threaded hole. Set screw or knurled hole mounting.



Length overall

No. 2110	1 5/8"	Hgt. 1 9/32"	Dia. 3/4"
No. 2100	2 1/2"	Hgt. 5/8"	Dia. 3/4"

Molded hole or brass insert, set screw mounting.

No. 2110-P 1 5/16" 1 9/32" 3/4"  
No. 2100-P 2 13/16" 5/8" 3/4"  
Metal insert and pointer, set screw mounting.

No. 2300—Zephyr bar knob.  
Length 1 1/4".

No. 2350—Zephyr bar knob.  
Length 2".

Molded hole, set screw mounting.

No. 2300-A—Zephyr bar knob.  
Length 1 1/4".

No. 2350-A—Zephyr bar knob.  
Length 2".

1/4" brass insert and set screw.

### No. 1800 Series

These can be furnished in either plain or recessed tops. Dia. 7/16"; Heights range from 1" to 1 3/8". Also supplied with studs of various lengths.



No. 5149 — Rectangular touch tuning knob. Push on, self-locating.

No. 5149-A—Oval touch tuning knob. Push on, self-locating.  
Hgt. 13/16" - 1 1/32".

No. 1750—Touch Tuning. Push on, self-locating.

No. 1760—Touch Tuning, Recessed top, push on, self-locating. Dia. 3 1/64". Hgt. 9/16", 1 1/16", 13/16", 15/16".

No. 1770—Binding Post and Switch knob. No. 6-32 and No. 8-32 brass inserts. Dia. 3 1/64". Hgt. 1/2", 5/8", 3/4", 7/8".



No. 2710  
Height 1/2". Dia. 3/4".  
Metal-faced insert or plain insert.  
Female thread available 8-32, 10-32 and 10-24.



No. 2150  
Streamlined bar knob.  
Length 1 1/4".



No. 1780  
Push button knob.  
Dia. 1/2". Hgt. 1", 1 1/8", 1 7/32", 1 3/8".

### No. 1790

Recessed top. Dimensions same as No. 1780.

FACTORY & GENERAL OFFICES — 1428 NO. WELLS ST., CHICAGO 10, ILL.

Branch Offices: Baltimore, Cincinnati, Grand Rapids, New York, Los Angeles, Milwaukee, Boston and Philadelphia

Foreign Office: Toronto, Canada



# RADIO CHASSIS PUNCHES KNOCKOUT PUNCHES AND CUTTERS

Greenlee Tool Co., Rockford, Illinois



No. 730

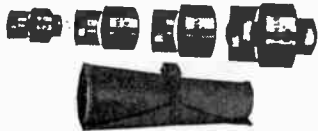


No. 731

## Nos. 730 and 731 RADIO CHASSIS PUNCHES

No. 730 Round Punch shown at left, quickly cuts accurate, round holes in radio chassis for sockets, plugs, and other receptacles. No reaming or filing—hole is smooth, perfect. Operates simply with an ordinary wrench for drive power. Just insert in a  $\frac{3}{8}$ " or  $\frac{13}{32}$ " drilled hole and turn drive nut. 13 sizes from  $\frac{1}{2}$ " to  $2\frac{1}{4}$ " as shown in table at right. Individually packed. Odd-size holes for meters can be made with other punches and cutters shown below.

No. 731 Square Punch (left) easily makes full or partial cuts so that any square or oblong shaped hole can be rapidly made. Available in three sizes for making  $\frac{3}{8}$ ",  $\frac{3}{4}$ ", and 1" square holes. Simple to operate, turn with an ordinary wrench. Drive screw fits into  $\frac{1}{2}$ " hole in the metal. Individually packed.

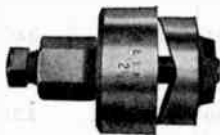


## No. 735 KNOCKOUT PUNCH SET

For fast, easy cutting of holes in metal up to  $\frac{1}{8}$ -inch or 10-gauge thickness. Insert in small opening and drive with an ordinary wrench. Speeds radio set work, cuts cleanly, no reaming and filing. Set includes four punches for making  $\frac{7}{8}$ ",  $1\frac{1}{8}$ ",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ " inch holes. Packed in leather case.

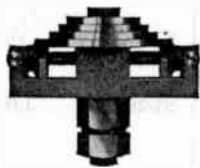
## No. 737 KNOCKOUT PUNCH SET

Similar to the No. 735 set, but consists of two punches . . . for cutting holes  $1\frac{1}{4}$ " and  $2\frac{3}{8}$ " inch diameter. Packed in leather case.



## Nos. 738 and 739 KNOCKOUT PUNCHES

For cutting holes  $2\frac{7}{8}$ " diameter (No. 738) and  $3\frac{1}{2}$ " diameter (No. 739) in metal up to  $\frac{1}{8}$ " or 10 gauge thickness. Similar in design and operation to that of smaller GREENLEE Knockout Punches. Packed and sold individually.



## No. 740 KNOCKOUT CUTTER

Excellent tool for making meter openings and other large holes needed in radio work. Quickly cuts holes  $1\frac{1}{8}$ ",  $2\frac{3}{8}$ ",  $2\frac{7}{8}$ ",  $3\frac{1}{2}$ "-diameter. Operation is simple . . . driven with ordinary wrench. Special discs can be furnished for cutting odd-size

holes from  $1\frac{1}{8}$ " to  $3\frac{1}{2}$ "-inch diameter. Packed in leather case.

	Price	Wt. (lbs.)
No. 740 Knockout Cutter	\$15.00	4 $\frac{1}{2}$

## No. 730 List Price and Weight in Pounds Each

	Price	Weight
$\frac{1}{2}$ " Complete	\$2.15	$\frac{1}{4}$
AV1760 Punch	1.25	$\frac{1}{4}$
AV1759 Die	.65	$\frac{1}{4}$
$\frac{3}{8}$ " Complete	2.15	$\frac{1}{4}$
AV1742 Punch	1.25	$\frac{1}{4}$
AV1743 Die	.65	$\frac{1}{4}$
AV1675 for $\frac{1}{2}$ " & $\frac{3}{8}$ " Punches	.25	$\frac{1}{4}$
$\frac{3}{4}$ " Complete	2.15	$\frac{1}{4}$
AV1113 Punch	1.25	$\frac{1}{4}$
AV1114 Die	.65	$\frac{1}{4}$
$\frac{7}{8}$ " Complete	2.15	$\frac{1}{4}$
AV121 Punch	1.25	$\frac{1}{4}$
AV122 Die	.65	$\frac{1}{4}$
AV322 Screw for $\frac{3}{4}$ " & $\frac{7}{8}$ " Punches	.25	$\frac{1}{4}$
1" Complete	2.35	$\frac{1}{4}$
AV87 Punch	1.35	$\frac{1}{4}$
AV88 Die	.75	$\frac{1}{4}$
$1\frac{1}{8}$ " Complete	2.50	$\frac{1}{4}$
AV1763 Punch	1.45	$\frac{1}{4}$
AV1764 Die	.80	$\frac{1}{4}$
$1\frac{1}{4}$ " Complete	2.50	$\frac{1}{4}$
AV91 Punch	1.45	$\frac{1}{4}$
AV92 Die	.80	$\frac{1}{4}$
$1\frac{1}{2}$ " Complete	2.50	$\frac{1}{4}$
AV83 Punch	1.45	$\frac{1}{4}$
AV84 Die	.80	$\frac{1}{4}$
$1\frac{3}{4}$ " Complete	2.50	$\frac{1}{4}$
AV115 Punch	1.45	$\frac{1}{4}$
AV116 Die	.80	$\frac{1}{4}$
$1\frac{7}{8}$ " Complete	2.50	$\frac{1}{4}$
AV117 Punch	1.45	$\frac{1}{4}$
AV118 Die	.80	$\frac{1}{4}$
$1\frac{7}{8}$ " Complete	2.85	$\frac{1}{4}$
AV119 Punch	1.65	$\frac{1}{4}$
AV120 Die	.95	$\frac{1}{4}$
$1\frac{1}{2}$ " Complete	3.20	1
AV89 Punch	1.90	$\frac{3}{8}$
AV90 Die	1.05	$\frac{1}{2}$
AV112 Screw for 1" to $1\frac{1}{2}$ " inclusive	.25	$\frac{1}{4}$
$2\frac{1}{4}$ " Complete	6.20	$2\frac{1}{4}$
AV437 Punch	3.20	$\frac{7}{8}$
AV438 Die	2.50	1
AV304 Screw for $2\frac{1}{4}$ " Punch	.50	$\frac{1}{2}$

## No. 731 List Price and Weight in Pounds Each

$\frac{3}{8}$ " No. 731 Square Radio Chassis Punch	\$3.35 complete
AV-2891 $\frac{3}{8}$ " Square Punch	\$1.40
AV-2881 $\frac{3}{8}$ " Square Die	1.15
AV-2886 Drive Screw	.60
AV-2929 Drive Nut	.20
$\frac{3}{4}$ " No. 731 Square Radio Chassis Punch	\$3.90 complete
AV-2882 $\frac{3}{4}$ " Square Punch	\$1.65
AV-2883 $\frac{3}{4}$ " Square Die	1.35
AV-2914 Drive Screw	.70
AV-2929 Drive Nut	.20
1" No. 731 Square Radio Chassis Punch	\$4.50 complete
AV-2884 1" Square Punch	\$1.80
AV-2885 1" Square Die	1.50
AV-2887 Drive Screw	1.00
AV-2929 Drive Nut	.20

## Nos. 735, 737, 738, 739 List Price and Weight in Pounds Each

	Price	Weight
No. 735 Knockout Punch Set	\$10.00	$2\frac{3}{4}$
No. 737 Knockout Punch Set	10.00	$4\frac{1}{4}$
No. 738 Knockout Punch	14.00	$5\frac{3}{4}$
No. 739 Knockout Punch	19.00	$7\frac{1}{4}$

## Extra Parts

No. 735 Knockout Punch Set	
No. AV121— $\frac{7}{8}$ " Punch	1.25
No. AV122— $\frac{7}{8}$ " Die	.65
No. AV123—1" Punch	1.45
No. AV124—1" Die	.80
No. AV125—1" Punch	1.65
No. AV126—1" Die	.95
No. AV127—1" Punch	1.90
No. AV128—1" Die	1.05
No. AV322— $\frac{3}{4}$ " x $1\frac{1}{2}$ " Cap Screw	.25
No. AV249— $\frac{3}{4}$ " x $2\frac{1}{8}$ " Cap Screw	.35
No. 737 Knockout Punch Set	
No. AV439— $1\frac{1}{4}$ " Punch	2.30
No. AV440— $1\frac{1}{4}$ " Die	2.00
No. AV441— $2\frac{3}{8}$ " Punch	3.20
No. AV442— $2\frac{3}{8}$ " Die	2.50
No. AV304— $\frac{3}{4}$ " x $2\frac{3}{4}$ " Cap Screw	.50
No. 738 Knockout Punch	
No. AV1429— $2\frac{7}{8}$ " Punch	5.40
No. AV1430— $2\frac{7}{8}$ " Die	5.00
No. AV1433—Drive Nut	1.35
No. AV1434—Drive Screw	2.75
No. 739 Knockout Punch	
No. AV1431— $3\frac{1}{2}$ " Punch	8.00
No. AV1432— $3\frac{1}{2}$ " Die	7.50
No. AV1433—Drive Nut	1.35
No. AV1434—Drive Screw	2.75

# — TRIMM —

## PHONE PLUGS AND JACKS

### "511" PLUG



The standard radio phone plug. Tip and sleeve bright nickel, binding head screws (No. 6) will retain pin tip, spade, or eyelet terminals. Stay cord anchorage provided. Shielded types have fiber liner.

No. 511 —Black plastic shell.....	\$0.50
No. 511-1—Red plastic shell.....	.50
No. 511-2—Shielded, single-piece shell.....	.85
No. 511-3—Shielded, two-piece shell with cable clamp.....	1.30
No. 511-4—Shielded, stubby shell.....	.80
No. 513 —Three-circuit plug, soldering lug terminals, black plastic shell.....	.90
No. 513-3—Three-circuit plug, soldering lug, shielded, stubby shell.....	1.20
No. 515 —Adapter, couples amphenol type fittings directly to standard phone jacks.....	.45

### "512" PLUG

Compact, non-protruding design. Bakelite body, nickel-plated tip and sleeve. Cord pin tips held by set screws. Recommended for group hearing aid installations, etc.



No. 512 .....\$0.65

### "514" MIN-A-PLUG



Developed especially for shielding microphone cables, etc. Standard two circuit tip-sleeve construction. Shell 1/2" dia. x 1 1/8" long. Wing type terminal clamps directly onto cord shield, center conductor

solders to lug. Shielded types have fiber liner.

No. 514 —Black plastic shell.....	\$0.50
No. 514-1—Red plastic shell.....	.50
No. 514-2—Shielded shell.....	.80
No. 514-3—Shielded, stubby shell.....	.75

### "501" PLUG

Similar to widely used Sig. C. PL-55 plug, brass body, tip permanently attached to rod, assembly cannot come apart. Precision profiled and polished for perfect contact with jack.



No. 501 —Black plastic shell.....	\$1.60
No. 501-10—Black plastic shell, similar appearance to No. 501 but combines tip and sleeve assembly of "511" type plug. Ideal where cost is important.....	0.75
No. 501-11—Red plastic shell.....	0.75
No. 501-12—Shielded shell.....	1.00

### DISCONNECT PLUG and JACK



Miniature plug and jack assembly. Ideal for small size cordage. Two molded acetate half-shells are cemented together to effect assembly.

No. 518—Plug.....	\$0.50
No. 562—Jack.....	0.60

#### COMPLETE DATA

on a wide range of Telephone, Military, and Special Plugs and Jacks is available by requesting Bulletins on these parts.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

### PATCH CORDS



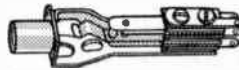
Widely used by the majority of radio stations. Cord assembly uses TRIMM No. 506 twin plugs and high quality shielded cord. Plug self aligning.

Number following "840" represents length.

No. 506 —Plug, twin type.....	\$ 4.50
No. 840-1-PP—Cord-Plug assembly.....	12.00
No. 840-2-PP—Cord-Plug assembly.....	12.20
No. 840-3-PP—Cord-Plug assembly.....	12.55
No. 840-4-PP—Cord-Plug assembly.....	12.90
No. 840-6-PP—Cord-Plug assembly.....	13.60

See TRIMM Bulletin R-15 for more complete listing of Patch Cords, Plugs, etc.

### JACKS



Two basically different types of long-frame jacks are available, differing principally in their method of mounting.

The first, TRIMM "90" Series and illustrated above, is commonly used for telephone switchboard types of applications, and permits very close spacing of jacks. The bushing at end of frame is plain, unthreaded, and the jack is mounted by means of a screw through the panel mounting plate. Frame is of steel, suitably plated. Springs are of nickel silver, and contacts are of fine silver providing excellent electrical contact.

The second, TRIMM "91" series, provide a 3/8"-32 x 3/8" threaded bushing at the end of the frame permitting single nut mounting. Frame is steel, suitably plated. Springs of nickel silver, and contacts are of fine silver. One nut and washer supplied per jack.

CIRCUIT	"90" SERIES		"91" SERIES	
	CODE No.	LIST	CODE No.	LIST
	90-01	\$0.90	91-01	\$0.60
	90-02	1.10	01-02	.75
	90-03	1.10	91-03	.75
	90-04	1.15	91-04	.80
	90-05	1.20	91-05	1.00
	90-06	1.25	91-06	1.00
	90-07	1.40	91-07	1.15
	90-25	1.10	91-25	.75
	90-26	1.45	91-26	1.00
	90-27	1.60	91-27	1.10

**ERSIN**

# Multicore

**3-CORE SOLDER****THE ONLY SOLDER MADE WITH NON-CORROSIVE,  
EXTRA-ACTIVE ERSIN FLUX****ACTUAL PERFORMANCE PROVES THAT ERSIN MULTICORE**

- melts more rapidly due to multiple core construction
- removes surface oxides and prevents reforming
- bonds properly on difficult metals
- saves money
- saves time

Ersin Multicore, containing Ersin Flux, is the finest solder available for use where cored solders are required. It is fast acting, flows readily, and bonds difficult metals surely, safely and economically. The technical advantages listed below explain "how" and "why".

Multicore Solder is specified by many of the largest television and electronics manufacturers, as well as thousands of service and repair men, who have tested it against all others and use it exclusively for their requirements.

Every reel or carton of Ersin Multicore is clearly marked both as to gauge and alloy, showing the actual content of Tin and Lead. You know exactly what you are getting when you buy Ersin Multicore Solder!

Available in all Tin/Lead alloys and in standard wire gauge from 10 to 22. (14, 16 and 18 s.w.g. are most popular.)

**TECHNICAL ADVANTAGES:****ERSIN FLUX**

Ersin Flux is exclusive to Multicore and will not be found in any other solder. It is a high grade, water white rosin, homogeneously activated.

Ersin Flux has a vigorous fluxing action while retaining the non-corrosive and protective features of the original rosin.

Soldered joints made with Ersin Flux do not corrode even after prolonged exposure to humidity. It has been tested under climatic conditions ranging from the Arctic to the Tropics.

Ersin Flux reduces the surface tension of molten solder, causing it to wet metals rapidly, increasing speed of operation with resultant production economies.

Free from objectionable odor. Non-toxic in use.

Leaves nothing but pure rosin on the work after soldering, and may be used wherever plain rosin is specified. Complies with all pertinent Federal Specifications.

**MULTICORE SOLDER**

Three separate cores of flux eliminate possibility of no flux in a portion of the wire, which may occur in single cored solder. Guaranteed continuity of the flux stream prevents "dry" joints, i.e. those having high electrical resistance.

Although there are three cores of flux in Multicore, the total percentage of flux to solder is less than many single cored solders.

Very rapid melting results from the multiple core construction which provides thinner walls of solder than are found in same gauge single cored solder.

Multicore's unique properties make perfect joints possible on difficult metals and alloys, even if oxidized.

Ability to tin rapidly produces perfect joints with less solder. Greater coverage per pound.

**MULTICORE SALES CORPORATION****164 DUANE STREET****NEW YORK 13, N. Y.**

# ROGAN **KNOBS** FROM STOCK MOLDS

For All Types of Instruments and Apparatus . . . Low Cost . . . Immediate Delivery

ROGAN BROTHERS • Compression Molders and Bronders of Plastics • 2506 W. Irving Pk. Rd., Chicago 18



TYPE RB-901



TYPE RB-501



TYPE RB-111



TYPE RB-121



TYPE RB-31



TYPE RB-301



TYPE RB-11



TYPE RB-21



TYPE RB-821



TYPE RB-51



TYPE RB-41



RB-11 with RB-1000

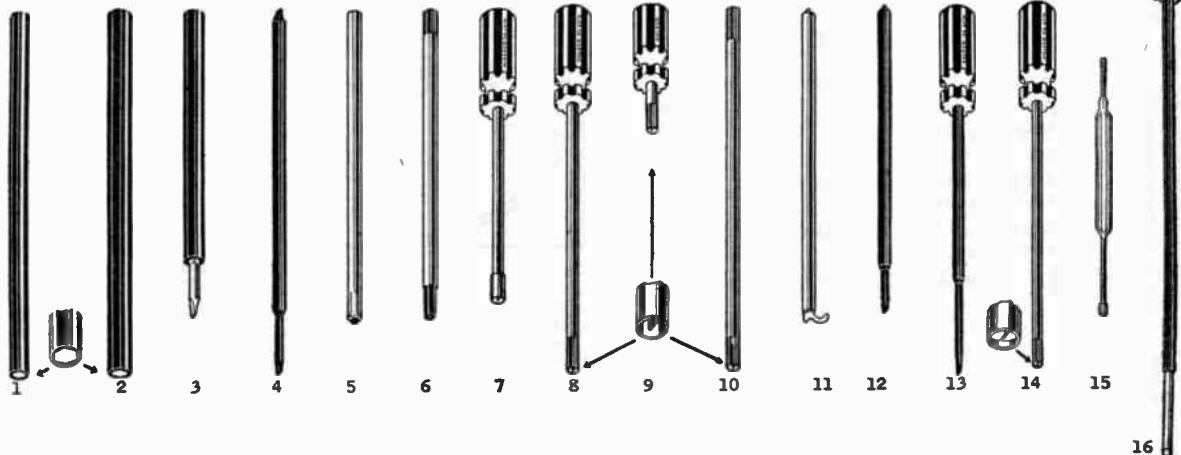
## WIDE SELECTION OF SHAPES AND SIZES

Shown above, are but a few of the many Rogan plastic knobs available to you from our regular stock molds. These are supplied without tool charge, resulting in considerable savings in cost, faster delivery. Choice of a wide selection of sizes, shapes and colors. Molded of phenolic or urea thermosetting materials, which will not soften, warp, or scratch easily. Heat resisting materials can be used so knobs can withstand 350-400° F. continuous heat. Most knobs supplied with  $\frac{1}{4}$ " shaft hole and set screws. Special shaft hole sizes and means of fastening can be supplied to specifications at nominal cost.

## KNOBS CAN BE BRANDED, AS REQUIRED

Rogan's famous "deep relief" branding process, applied after molding, provides sharp perfect marking at low cost. Any type marking, graduations or numerals can be branded on blank knobs to fit your requirements. Rogan knobs are available in black, brown or walnut, when molded of phenolic materials; and in all light pastel colors when molded of urea materials. Whatever your knob requirements may be, Rogan is equipped to supply you faster, better, more economically. The complete line of Rogan knobs with specifications is shown in the new Rogan catalog. Write for your copy now.

### WALSCO ALIGNMENT TOOLS



#### WALSCO 1/4" HEX I. D. NEUTRALIZING WRENCH.

Very durable. Can be cut if corners become rounded from wear. Over-all length—7 1/2", O.D.—3/8" round.

Cat. No.	Picture No.	List Price
\$2500—Bone Fibre Wrench	1	\$0.40
\$2503—Clear Lo-loss Plastic Wrench	1	0.40

#### WALSCO 5/16" HEX. I. D. NEUTRALIZING WRENCH.

Same construction as 1/4" wrench listed above. Over-all length—7 1/4". O.D.—7/8".

Cat. No.	Picture No.	List Price
\$2505—Bone Fibre Wrench	2	\$0.40
\$2508—Clear Lo-loss Plastic Wrench	2	0.40

#### WALSCO FIBRE HEX-WRENCH-AND-SCREW-DRIVER.

Standard 1/4" hex wrench combined with a tough nylon screwdriver tip.

Cat. No.	Picture No.	List Price
*2510—Combination Tool	3	\$0.60

#### WALSCO DUPLEX ALIGNMENT SCREWDRIVER.

Precision made. Ground or molded to fit large or small screws. Width of blade on large end—7/8"; on small end—1/2". Thickness to conform to standard slot dimensions. Over-all length—7".

Cat. No.	Picture No.	List Price
*2520—Fibre Screwdriver	4	\$0.50
*2521—Polystyrene Screwdriver	4	0.40

#### WALSCO METAL TIP ALIGNMENT SCREWDRIVER.

Butyrate handle. This tool combines the low capacity effect of an alignment tool with the mechanical strength of a metal screwdriver. Diameter—7/8"; over-all length—6".

Cat. No.	Picture No.	List Price
*2525—Alignment Screwdriver	5	\$0.45

#### WALSCO TUNING WAND.

Made from Butyrate rod with inductance-increasing powdered iron core on one end and inductance-reducing brass piece on opposite end. Over-all length—6".

Cat. No.	Picture No.	List Price
*2540—Tuning Wand	6	\$0.50

#### WALSCO TV OSCILLATOR ALIGNMENT TOOLS.

Cat. No.	Picture No.	List Price
*2518—For Philco Receivers	7	\$1.60
*2522—For Receivers with "Standard Coil" Front Ends	13	1.00
\$2523—Extra long (12"); with replaceable super-tough molded nylon tip, for general front-end alignment without removing from cabinet	Picture No. 16	1.65
*2523-1—Replacement Tip for tool No. 2523 (Standard Pack: 20 Tips)		0.25

#### WALSCO TV I.F. ALIGNMENT SCREWDRIVERS.

Standard Tools for all TV and FM sets. Made of new flexible low-loss plastic with thin precision screwdriver tips.

Cat. No.	Picture No.	List Price
*2516—8 1/2" long, for No. 6 Studs	8	\$1.00
*2517—2" long, for No. 6 Studs	9	0.65
*2519—7" long—1 end for No. 6 Studs; other end for No. 4 Studs	10	0.95
*2524—8 1/2" long, Slotted Type, for No. 6 Studs	14	1.00
*2526—5" long, Molded-Nylon Tool, hex stud one end, very small screwdriver other end. For Zenith, Hoffman, Raytheon, and other sets	Picture No. 15	0.50

#### WALSCO WIRE DRESSING AND ALIGNMENT TOOL.

Made with thin (7/8") Butyrate handle, 7" long. Special tool on one end for dressing wires and finding loose connections or shorts. Other end has low capacity screwdriver tip.

Cat. No.	Picture No.	List Price
*2512—Wire Dressing and Alignment Tool	11	\$0.55

#### WALSCO "K-TRAN" ALIGNMENT TOOL.

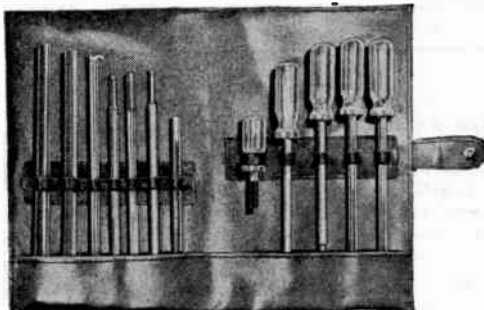
For adjustment of all miniature (K-Tran) I.F. transformers. Made of tough bone fibre. One end is machined to fit "K-tran" slots; other end is equipped with low-capacity metal screwdriver tip.

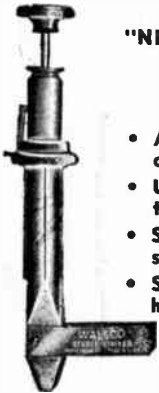
Cat. No.	Picture No.	List Price
*2515—"K-Tran" Alignment Tool	12	\$0.75

### WALSCO TV-FM ALIGNMENT TOOL KITS

Handy TV-FM alignment tool kit or wall rack. Durable leatherette kit gives servicemen every tool necessary to align TV and FM sets. Handy wall rack for use above bench in shop. Provides proper place for each tool, and always handy.

Cat. No.	List Price
580—12 Tools in leatherette case	\$11.50
581—12 Tools on wall rack	11.50





**WALSCO STAPLE DRIVER  
 "NEW IMPROVED GUARANTEED MODEL"**

Patent No. 2,285,884

*Pays for itself on the first job!*

- A sensational tool for installing wires and cables, that saves time and money.
- Used by Radio, Public Address and Intercom Technicians.
- Staples into corners and other inaccessible places.
- Staples on hard surfaces such as plaster, hardwood, etc.
- Can be loaded in 10 seconds.

This tool automatically positions the staple — then one or two strokes with the palm of the hand and the staple is driven home neatly, quickly, and accurately. A small trigger regulates the feeding mechanism to enable the operator to strike the handle on hard surfaces as often as necessary before a second staple leaves the magazine. Staples come in strips, are large enough for cables and wires up to 1/4" diameter. An adjustable regulator controls the depth to which the staple is driven into surface, thus preventing damage to the insulation of the wire.

Cat. No.	List Price	Dealer's Net
500—Staple Driver Complete, including box of staples	\$8.25	\$4.95
507—Rubber Cap for Head of Staple Driver	0.37	0.22
550—Box of 250 Carbon Steel Staples	0.60	0.36
552—Box of 1000 Carbon Steel Staples	2.25	1.35

Staples put up in handy strips; available in plain, brown or ivory finish.

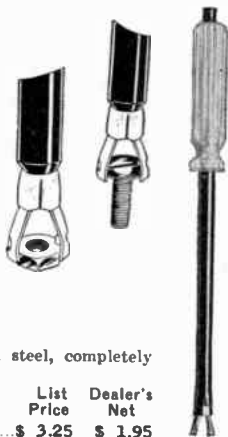
**WALSCO WONDERTOOL  
 (Patent Pending)**

**A COMBINATION HOLDING TOOL, WRENCH AND SCREWDRIVER** with these unique features:

1. Starts and drives hex and square nuts from No. 2 to No. 10.
2. Holds nuts securely for starting and removing.
3. Holds and drives machine, sheet-metal and wood screws with slotted heads from No. 4 to 1/4" size.
4. Holds and drives slotted set screws from No. 10 to 3/8" size.

Made of highest quality tempered tool steel, completely insulated and fully guaranteed.

Cat. No.	List Price	Dealer's Net
555 —Wondertool	\$ 3.25	\$ 1.95
555D—Display of 12 Wondertools	39.00	23.40



**WALSCO INSECTENE**

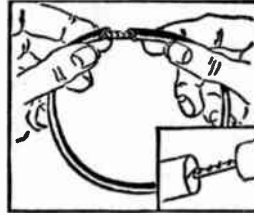
A new WALSCO development to control insects such as spiders, beetles and roaches, often found in juke boxes, radio cabinets, and amplifiers. Will kill insects on contact, and provides a coating with long-lasting repellent action. WALSCO Insectene is best applied to cabinets and chassis with a brush or regular insecticide spray gun. Harmless to wiring and parts.

Cat. No.	List Price
448 —8 oz. bottle	\$ 1.10
448GL—1 gal. can	12.50



**WALSCO UNIBELT**

**A NEW UNIVERSAL DIAL-DRIVE BELT ADJUSTABLE TO FIT ANY DIAL DRIVE**



Covered by Patent No. 2,300,706

- Eliminates need for stocking 96 different sizes of belts.
- Unibelt gives the Radio Man the correct size belt for every make and model set.
- Easily installed in a few minutes. No need for taking dial mechanism apart.
- Put up on spools in continuous lengths which will make five or more average belt replacements.
- New patented construction incorporates special stainless steel core and pure latex covering.
- Belts cannot stretch, and when properly installed will not slip, fray or break.
- Unconditionally guaranteed.

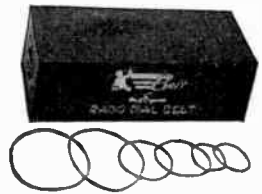
The ingenious construction of the New WALSCO Unibelt makes it possible to assemble any size belt by merely cutting the desired length and joining the ends with a simple "zipper-like" connector. The connected belt cannot stretch and has a breaking strength of over 60 lbs. **ONLY ONE SIZE NEEDED** for any belt replacement job.

Cat. No.	List Price	Dealer's Net
303—5-ft. spool Unibelt (with 10 connectors, and instructions)	\$2.75	\$1.65

**WALSCO DIAL DRIVE BELTS**

- Precision Made.
- No Stretch — No Slip.
- Smooth and Uniform.
- Exceptionally Strong.

Available for any type of radio set. Specially constructed to give long lasting, trouble-free service. Treated for maximum friction and to provide accurate tuning. WALSCO Dial Belts are uniformly thick throughout the entire length and are precision made and guaranteed to fit perfectly.



All Sizes..... List Price Each, \$0.25

Also put up in Kits of 25, 50, 100 and 150 Belts

**WALSCO GLASS JARS AND PLASTIC BOXES**



Handy for storing small hardware items to keep them clean and rust-free.

Cat. No.	List Price
997—Plastic Box with 4 compartments and telescoping lid. 4 1/2" square, 1 3/4" high. (Standard pack: 24)	\$0.65
998—Plastic Box with Sliding Lid. (Standard pack: 24)	0.25
999—Glass Jar, 2 oz. size. (Standard pack: 36)	0.12

### WALSCO DIAL CABLES AND CORDS

WALSCO Dial Cables and Cords are manufactured to meet the most rigid standards of the Government, Radio Industry and Engineering Laboratories. The finest raw materials are used and production is controlled to supply a uniform product with an absolute minimum stretch factor. All standard Cords are made with NYLON braid, known to have the highest abrasion resistance. These selected materials, plus special chemical treatment after fabrication, make WALSCO Cords the finest on the market. WALSCO Dial Cords are used by leading manufacturers as a standard component.



25-ft. and 100-ft. spools are packaged in clear plastic, re-usable storage boxes with sliding lids.

**HEAVY CORD**—Diameter .062"—Same as used on many Philco and Majestic sets. Very durable, and treated to prevent slipping.

No. 33 ..... 25 ft. .... List Price \$1.75  
No. 33-1C ..... 100 ft. .... List Price 4.60

**BRONZE CABLE**—16-Strand Braided—Diameter .039"—Breaking Strength 50 lbs.—A braided cable with good flexibility and abrasion resistance. "Fiber-glass" is used as core material and the braid is constructed of special hard Cadmium bronze. Does not unravel.

No. 31 ..... 25 ft. .... List Price \$1.20  
No. 31-1C ..... 100 ft. .... List Price 3.45  
No. 31-5C ..... 500 ft. .... List Price 14.00

**PHOSPHOR BRONZE CABLE**—42-Strand—Diameter .032"—Breaking Strength 60 lbs.—A very flexible metal cable constructed of 42 strands of hard Phosphor bronze over a "Fiber-glass" core. Extremely durable. Used for replacement of dial cables and many special applications where a strong, stranded cable is required.

No. 30 ..... 25 ft. .... List Price \$1.50  
No. 30-1C ..... 100 ft. .... List Price 5.00  
No. 30-5C ..... 500 ft. .... List Price 20.00

**SPECIAL THIN BRONZE CABLE**—Diameter .022"—An extra-thin cable for dial drives, flexible connections, pigtails, and many other applications—wherever a thin, but strong cable is required.

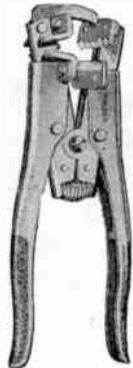
No. 32 ..... 25 ft. .... List Price \$1.20  
No. 32-1C ..... 100 ft. .... List Price 3.45  
No. 32-5C ..... 500 ft. .... List Price 14.00

STANDARD PACKAGE—12

The following cords cover over 80% of the replacement demand. With one spool of each kind on hand, the serviceman has the proper size for practically any set manufactured since 1934. Constructed with "Fiber-glass" or linen core and "pre-stretched," these are the most efficient cords available. The braided sleeves are made of Nylon.

Cat. No.	Diam.	Breaking Strength	LIST PRICES		
			Feet Per Spool		
			25	100	500
<b>"SPECIAL THIN"</b>					
35	.025"	25 lbs.	\$1.25		
35-1C	.025"	25 lbs.		\$4.50	
35-5C	.025"	25 lbs.			\$13.00
<b>STANDARD</b>					
39	.032"	30 lbs.	\$1.25		
39-1C	.032"	30 lbs.		\$4.50	
39-5C	.032"	30 lbs.			\$13.00
<b>MEDIUM</b>					
34	.042"	35 lbs.	\$1.25		
34-1C	.042"	35 lbs.		\$4.50	
34-5C	.042"	35 lbs.			\$16.00

### WALSCO ALL-PURPOSE WIRE STRIPPER



All these features in **ONE** model:  
• Strips all wires from 16 to 22-gauge • Strips 300-ohm twin lead  
• Has built-in wire cutter • Has automatic locking device which prevents crushing of stranded wire • Made entirely of steel and will last a lifetime.

Strips insulation quickly and cleanly. Precision-ground blades will not nick or cut wire strands. Especially made for wire types and sizes used in electronic work, but equally applicable for automotive, aviation, and telephone trade.

Blades are hardened and precision-ground, and will last for thousands of stripping and cutting operations. Can readily be replaced when dulled.

Operation is extremely easy, requires no particular skill or experience. From 700 to 1000 wires can be stripped per hour. Equally adaptable for the production line or for use "on the job."

Cat. No.	Description	List Dealer's Price Net	
		Price	Net
590	—WALSCO All-Purpose Wire Stripper.....	\$ 8.00	\$ 4.80
590-1	—Replacement Blade Set for No. 590.....	2.00	1.20
591	—Special "Wide-Range" Model for Electrical Trade. Strips all wire gauges from No. 10 to No. 22.....	8.00	4.80
591-1	—Replacement Blade Set for No. 591.....	2.00	1.20

### WALSCO PROTECTO-TUBE



A new synthetic tubing especially designed for insulating handles of pliers, screwdriver blades, cable connector ends, test prods, etc. This tubing is highly abrasion-resistant for long wear, and will not crack or shatter. Special Expanding Solution is furnished as part of the kit and "swells" tubing to permit easy application. Upon drying, tubing shrinks on tight.

Protecto-Tube Kit, containing approx. 12 ft. assorted sizes and colors of WALSCO Protecto-Tube, jar of Expanding Solution, and instructions.

Cat. No. K-18.....List Price \$1.65



### POPULAR DIAL CORD IN SMALL PACKAGES

Cat. No.	List Price
3070—Approximately 10 ft. Special Thin Cord (Type 35).....	\$0.40
3080—Approximately 8 ft. Medium Cord (Type 34).....	0.40
3090—Approximately 8 ft. Standard Cord (Type 39).....	0.40

(Standard Package . . . 20; available on display card or box)

### WALSCO STANDARD TEST RECORDS FOR TESTING AND ADJUSTING RECORD PLAYERS, PICK-UPS, AND AMPLIFIERS

These records are designed to provide the electronic engineer and serviceman with a quick, inexpensive, and accurate means of checking the mechanical performance of record changers. They will also indicate any defects in pick-up, amplifier, or speaker, and may be used for accurate measurements of performance of these components. All records are made of long-wearing, plastic material, and are unbreakable in normal use.

Cat. No. 720-6—Set of six 10" records consisting of one each of the following: Record No. 720, 721, 725, 726, 727, 728. With this set, all mechanical and electrical performance characteristics of a phonograph system can be quickly and accurately checked. No laboratory or well-equipped service shop should be without this set. .... List Price \$9.90

Cat. No. 720—10" record with accelerated pitch. Playing time approximately 45 sec. Lead-in grooves modulated with 3 tones to indicate set-down position of pick-up. Proper tripping action indicated by tone signals at end of record. Both sides of record identical. .... List Price \$1.65

Cat. No. 721—10" record. One side with accelerated pitch and without starting spiral for checking "feed-in" of pick-up. Other side same as No. 720. .... List Price \$1.65

Cat. No. 725—10" record. One side: Sweep Frequency Record at N.A.B. standard level. Range 10,000 to 50 c.p.s. Cross-over to constant amplitude at 500 c.p.s. Other side same as No. 720. .... List Price \$1.90

Cat. No. 726—10" record. One side: Test Frequency Record at N.A.B. standard level. Range 10,000 to 50 c.p.s. in 16 steps. Other side same as No. 720. .... List Price \$1.90

Cat. No. 727—10" record. One side contains 1000 and 400-cycle tone for 1 min. each. Especially designed for testing irregular turntable speed ("WOW"). Other side same as No. 720. .... List Price \$1.90

Cat. No. 728—10" record. One side contains silent (unmodulated) groove for checking turn-table rumble. Other side same as No. 720. .... List Price \$1.65

Cat. No. 730-4—Set of four 12" records of same design as No. 720. Designed for use in connection with set No. 720-6 in checking performance of intermix changers. .... List Price \$9.90

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.





# WALSCO ELECTRONIC HARDWARE

The 99 Line

The 40 Line

IN PERMANENT TRANSPARENT PLASTIC PACKED IN HANDY STORAGE BOXES WITH SLIDING TOPS ECONOMICAL PLASTIC BAGS



## WALSCO PHONO-MOTOR DRIVES

Precision made to assure constant uniform speed and made of abrasion-resistant synthetic rubber to assure long wear. For attaching, use WALSCO Rubber Cement.



Cat. No.	I.D.	O.D.	Thick	No. of Drives per pkg.	Used on	List Price per pkg.
†2560-16	2"	2 3/8"	3/8"	2	Gen. Indust. Mod. LX & RX	\$0.40
†2560-17	1 1/2"	1 3/4"	1/8"	2	Alliance, Seeburg, G.E. V. M. 400	0.40
†2560-18	3/4"	1 1/8"	1/16"	8	Seeburg, R.C.A., G.E.	0.40
†2560-19	1/2"	3/4"	1/16"	4	Philco, R.C.A., etc.	0.40
†2560-20	5/8"	6"	3/8"	1	Detrola	0.40
*2560-22	1 1/8"	1 1/2"	3/8"	8	G.I. Recorder/Changer	0.40
*760-23	1 1/8"	1 3/8"	3/4"	2	R.O.A., RP-176, 177 and most pre-war R.C.A. Changers. Also on G.E. 809-J, etc.	0.40
761-23	4 1/2"	5 1/2"	5/8"	1	Same as #760-23	1.00
760-24	2 3/8"	3 3/8"	1/4"	1	R.C.A. 960015, 960260, 960276. Also most Admiral and Crescent postwar changers	0.50
†760-25	Spring-Drive			1	Detrola - Utah	0.50

## WALSCO KEY WRENCHES



### FOR HEX AND SPLINE SOCKET SCREWS

WALSCO features three sets of socket wrenches made of special alloy steel to fit all standard socket screws used in radio and electronic equipment.

Cat. No.	Description	List Price
†780	Assortment of 4 small HEX wrenches Fits set screws No. 4 to 1/4" and cap screws No. 2 to 8.	\$0.50
†781	Assortment of 3 medium HEX wrenches. Fits set screws 1/4" to 1/2" and cap screws No. 8 to 12.	0.50
†784	Assortment of 4 small SPLINE wrenches. Fits all set screws up to 1/4" and cap screws up to No. 8.	0.50



## WALSCO HEX & SPLINE WRENCH KIT



A handy kit containing a complete range of wrench sizes as used in the electronic trade. The case is made of durable leatherette with double snap button closure and contains both hex (Allen) and spline (Bristol) wrench keys for No. 2 to 3/8" screws.

Cat. No.	List Price	Dealer's Net
560—Wrench Kit	\$1.65	\$0.99

Standard Package — 25

## WALSCO SPEAKER ADJUSTMENT SHIMS



- MADE OF NON-MAGNETIC METAL
- STRONG AND FLEXIBLE, SPRING TEMPER
- CORROSION-RESISTANT

4 Shims of each of 4 sizes supplied in handy plastic case with screw top and pencil clip. As easy to carry as a fountain pen. Marked for easy identification. Sizes supplied—.004", .006", .008" and .010". Indispensable to the serviceman in adjusting voice coils.

Cat. No.	List Price
†2550—16 Assorted Shims—4 of each size	\$0.60

## WALSCO PHONOGRAPH PICKUP SET SCREWS

Precision knurled head steel screws, antique bronze finished for all popular pickups and recording heads. The assortment contains several each of the popular numbers and one each of the other sizes.



Cat. No.	Approx. No. Units per pkg.	Used On	Size	List Price per pkg.
†2570	10	Assorted	Assorted sizes	\$0.40
*2571	10	Shure and others	2-56 x 5/8"	0.40
*2572	10	Most Astatic & Webster	2-64 x 3/4"	0.40
*2576	4	Most RCA, etc.	1-72 x 1"	0.40

## WALSCO TURNTABLE RETAINING CLIPS

For holding phono turntables securely to spindle. Indispensable for portable phonographs or to prevent damage when shipping record players.



Cat. No.	List Price per pkg.
*3424—4 Clips	\$0.40

## WALSCO PHONO PANEL MOUNTING SPRINGS

An assortment of various sizes of conical springs as used in mounting record changer units.



Cat. No.	List Price per pkg.
*3385—8 Assorted Springs	\$0.40

## WALSCO PICKUP CARTRIDGE MOUNTING SCREWS

An assortment containing small machine and self-tapping screws of various lengths, sizes and styles as required in fastening cartridge to pick-up arm. Especially useful when threads are stripped or replacement of different cartridge requires longer screws.



Cat. No.	List Price
*3365—Apprx. 80 Screws & Spacers	\$0.40

## WALSCO DIAL CORD CLIPS

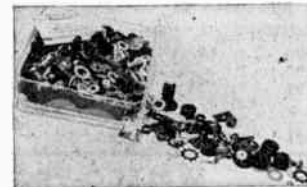
For fastening the end of dial drive cord. The assortment contains the proper sizes for all standard thicknesses of cord.



Cat. No.	List Price per pkg.
*2770—Approximately 85 Clips	\$0.40

## WALSCO HARDWARE ASSORTMENT

A wonderful assortment of screws, nuts, washers, springs, clamps, eyelets, grommets, terminals, etc. Only regular hardware included. Just the thing for the experimenter, ham and technician. In plastic box



Cat. No.	List Price	Dealer's Net
K3003—"1000 Piece" Hardware Assortment	\$1.65	\$0.99

## WALSCO PHONO TURNTABLE FELTS

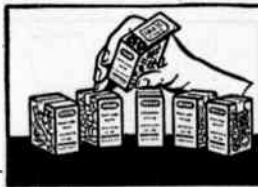
Made of high-quality brown felt, accurately die-cut with concentric center hole. Use WALSCO Radio Cement or WALSCO Fabric Cement for attaching.



Cat. No.	List Price
350-8 — 7 7/8" diameter	\$0.45
350-9 — 8 7/8" diameter	0.60
350-10 — 9 7/8" diameter	0.65
350-12 — 11 7/8" diameter	0.75

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

\*Std. (part) Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one stand. package. Example: 1 #3330-B consists of standard box containing 20 packages #3330. †Available Either in Standard Display Box of 20 Packages or in Standard Display Card of 20 Packages. When ordering add suffix "B" for box or suffix "D" for display card. See example above.



# WALSCO ELECTRONIC HARDWARE

The 99 Line

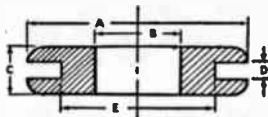
The 40 Line

IN PERMANENT TRANSPARENT PLASTIC PACKED IN HANDY STORAGE BOXES WITH SLIDING TOPS ECONOMICAL PLASTIC BAGS



## WALSCO RUBBER GROMMETS

For protecting cables from abrasion when passing through chassis holes. Also used for vibrationless mounting of parts.



Dimensions					THE 40 LINE		THE 99 LINE	
A	B	C	D	E	Cat. No.	Approx. Quan. per pkg.	Cat. No.	Approx. Quan. per pkg.
1/8"	1/4"	3/8"	1/2"	5/8"	†3341	15	3341-99	85
1/8"	3/8"	1/2"	3/4"	1"	†3342	12	3342-99	85
1/8"	1/2"	3/4"	1"	1 1/8"	†3343	10	3343-99	65
1/8"	3/4"	1"	1 1/4"	1 1/2"	†3344	10	3344-99	55
1/8"	1"	1 1/4"	1 1/2"	1 3/4"	†3345	6	3345-99	85
Assorted					†3340	12		

## WALSCO CHASSIS MOUNTS



Made of resilient synthetic rubber to give chassis or other components a floating effect and to reduce "microphonics." Essential wherever vibration will affect operation.

Dimensions					THE 40 LINE		THE 99 LINE	
A	B	C	D		Cat. No.	Approx. Quan. per pkg.	Cat. No.	Approx. Quan. per pkg.
3/8"	1/2"	3/4"	1"	1 1/8"	*2742	5	2742-99	25
1"	1 1/2"	1 3/4"	2"	2 1/8"	*2744	4	2744-99	20
Assorted					†2740	10		

## WALSCO RUBBER WASHER AND BUMPER ASSORTMENT

An assortment of the various kinds of rubber washers, bumpers, and spacers used in the electronic and radio industry for shockless, vibrationless mounting, for eliminating rattles and microphonics, etc.

Cat. No. †3440—20 Assorted Washers and Bumpers..... \$0.40

## WALSCO CORD STRAINRELIEFS FOR POSJ WIRE



Provides a grommet and strain relief in one piece. For use on appliance cord sets. Use WALSCO Rubber Cement (Cat. No. 112) for attaching to cord. Prevents insulation of wire from being damaged by sharp-edged holes in metal chassis or cabinets.

Cat. No. \*3348—4 Strainreliefs ..... \$0.40

## WALSCO CABINET FEET



Made of oil resistant synthetic rubber. Wood screws are supplied with screw-type feet but machine or selftapping screws may be used. The rubber tack feet have steel tacks securely molded in.

### PKGS. OF SCREW-TYPE FEET, INDIVIDUAL SIZES

Diam.	Height	THE 40 LINE		THE 99 LINE	
		Cat. No.	Quan.	Cat. No.	Quan.
3/8"	3/8"	*3351	8	3351-99	55
1/2"	3/8"	*3352	8	3352-99	60
3/8"	1/2"	*3353	6	3353-99	80
Assorted		†3350	8		

### PKGS. OF RUBBER TACK FEET

3/8"	3355-99	55
1/2"	3356-99	50
Assorted	†3355	10

## WALSCO SPADE BOLTS

Indispensable for attaching condensers, coils, cans, and similar items. For Experimenters, Servicemen and Manufacturers of electronic equipment. Stud size 6-32. Hole size for No. 6 screw.



Approx. Length	THE 40 LINE		THE 99 LINE	
	Cat. No.	Quan. per pkg.	Cat. No.	Quan. per pkg.
3/8"			3271-99	100
1/2"			3272-99	100
Assorted	†3270	18		

## WALSCO RIVET ASSORTMENT

Various sizes of hollow, solid and split rivets in brass, copper and aluminum as used in everyday repair and experimental work. Sizes range approximately from 1/8" to 1/4" in diam. and up to 3/4" in length.



Cat. No. †2620—Approx. 60 asstd. Rivets..... \$0.40

## WALSCO EYELET ASSORTMENT

Brass eyelets of various diameters and lengths. A handy item for every repair shop.

Cat. No. †2630—Approx. 55 Eyelets..... \$0.40

## WALSCO SMALL COTTER & HAIR PINS

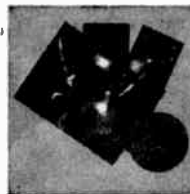
Package contains an assortment of most popular sizes of cotter and hair pins. A valuable aid in the repair of radios and phonograph mechanisms.



Cat. No. \*2650—Approx. 50 Assorted Cotter and Hair Pins \$0.40

## WALSCO SPEAKER CONE PATCHES

A quick and inexpensive means for patching tears and holes in speaker cones. Made of specially flexible material and backed with an adhesive which forms a permanent bond with the cone.



Cat. No. †2553—10 Assorted Patches \$0.40

## WALSCO SPEAKER DUST FELTS

Special, thin felt disks to keep metal particles and dust out of voice coils. Use Walsco Radio Cement to attach to cone.

Cat. No. \*2775—Approx. 25 assorted sizes..... \$0.40

For Bulk Quantity Prices on these Items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

\*Std. Pack: Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one standard package. Example: 1 \*3350-B consists of standard box containing 20 packages \*3350. †Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages. When ordering add suffix "B" for box or suffix "D" for display card. See example above.



# WALSCO ELECTRONIC HARDWARE

The 99 Line

The 40 Line

IN PERMANENT TRANSPARENT PLASTIC PACKED IN HANDY STORAGE BOXES WITH SLIDING TOPS • ECONOMICAL PLASTIC BAGS



## WALSCO SNAP-HOLE PLUGS

A round, polished nickel-plated flat head, metal button with spring flanges that snap right into the hole. Used to seal adjustments, cover unused holes, etc.



Description	THE 40 LINE		THE 99 LINE	
	Cat. No.	Quan. per pkg.	Cat. No.	Quan. per pkg.
For 1/8" hole.....	*3501	8	3501-99	50
For 3/8" hole.....	*3502	8	3502-99	50
For 1/2" hole.....	*3503	6	3503-99	40
For 5/8" hole.....	*3504	6	3504-99	30
For 3/4" hole.....	*3505	5	3505-99	25
For 1" hole.....	*3506	4	3506-99	20
Assorted.....	†3500	8		

For additional sizes see Industrial and Bulk Price List

## WALSCO VENTILATING HOLE PLUGS

For amplifiers, transmitters, portable radios, amateur equipment, etc., wherever ventilation is required.



Cat. No. List Price, per pkg.  
†3320—Assorted Plugs ..... \$0.40

## WALSCO CABLE CLAMPS

Heavy gauge steel, Cadmium plated, 3/8" wide. Perfectly punched and formed with No. 6 or No. 8 mounting holes. Available in 3 sizes for cables from 1/8" to 3/8" in diameter.

For Cables	THE 40 LINE		THE 99 LINE	
	Cat. No.	Quan. Per pkg.	Cat. No.	Quan. per pkg.
1/8" to 3/8" Diam.	*3331	20	3331-99	125
3/8" to 1/2" Diam.	*3332	18	3332-99	100
1/2" to 3/4" Diam.	*3333	15	3333-99	75
Assorted.....	†3330	20		

## WALSCO GRID CAP ASSORTMENT

An assortment of Grid Caps for all standard metal and glass tubes. Includes clip for hi-voltage TV rectifier tubes.



Cat. No. List Price, per pkg.  
†2600—Approximately 10 Assorted Caps ..... \$0.40

## WALSCO SPRING CONNECTOR CLIPS (FAHNESTOCK TYPE)

For fast connection and good electrical contact. No tools required for connecting or disconnecting. Made of spring brass or phosphor bronze.

For Wires	THE 40 LINE		THE 99 LINE	
	Cat. No.	Approx. Quan.	Cat. No.	Approx. Quan.
#16 gauge and smaller.....	*2731	18	2731-99	100
#12 to #18 gauge.....	*2732	12	2732-99	75
Assorted.....	*2730	12		

## WALSCO FUSE CLIPS

Made of spring brass, nickel plated for single hole mounting.



Cat. No. List Price, per pkg.  
\*2720—10 Assorted Clips ..... \$0.40

## WALSCO TERMINAL LUGS



Figure No.	THE 40 LINE		THE 99 LINE	
	Cat. No.	Approx. Quan.	Cat. No.	Approx. Quan.
1.....	*3281	20	3281-99	125
2.....	*3282	20	3282-99	140
3.....	*3283	20	3283-99	115
4.....	*3284	20	3284-99	100
5.....	*3285	20	3285-99	100
6.....	*3286	40	3286-99	250
7.....	*3287-X	20	3287-X-99	140
8.....	*3287-Y	20	3287-Y-99	115
9.....			3287-Z-99	35
Assorted.....	†3280	30		

## WALSCO ANGLE BRACKET ASSORTMENT



Handy brackets of various lengths and shapes as needed by every repairman, experimenter, "ham", etc. Precision made, of steel, or brass and plated.

Cat. No. List Price, per pkg.  
\*2610—Approximately 14 Assorted Brackets ..... \$0.40

## WALSCO TERMINAL STRIPS



For mounting parts which are to be insulated from chassis, and for wire distribution. Made with high-grade phenolic insulation. Solder-coated terminals.

Cat. No. List Price per pkg.  
\*2660—Assortment of various size Strips ..... \$0.40

## WALSCO PHONO PLUGS AND JACKS



Standard plugs and jacks as used for connecting record players or pick-ups; also used on auto radio antennas. Used for all single conductor, shielded cable connections.

Cat. No. List Price per pkg.  
†2580—Package of 4 Plugs..... \$0.40  
†2585—Package of 2 Jacks..... 0.40

## WALSCO PHONE TIPS



Fit all standard tip jacks. Easy to solder. Made of brass, nickel-plated. These are the conventional tips so often needed by both experimenters and service men.

Phone Tips.....	THE 40 LINE		THE 99 LINE	
	Cat. No.	Approx. Quan.	Cat. No.	Approx. Quan.
	*2725	12	2725-99	60

## MINIATURE PLUG AND JACK

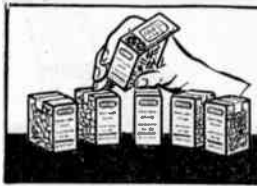
TWO-CONDUCTOR PRECISION TYPE  
Ideal for hearing aids, speaker extensions, carbon microphones, and numerous other installations. Needs no screws; molded plastic case cements together. Illustration shown approximately one-half size.



Cat. No. Description List Price  
†790—1 Plug (type PL-291)..... \$0.55  
†791—1 Jack (type JK-48)..... 0.75

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

\*Std. Pack: Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one standard package. Example: 1 #3380-B consists of standard box containing 20 packages #3380.  
†Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages. When ordering add suffix "B" for box or suffix "D" for display card. See example above.



# WALSCO ELECTRONIC HARDWARE

The 99 Line

The 40 Line

IN PERMANENT TRANSPARENT PLASTIC PACKED IN HANDY STORAGE BOXES with SLIDING TOPS • ECONOMICAL PLASTIC BAGS



## WALSCO METAL WASHERS

Precision steel washers, Cadmium plated, in standard small sizes for innumerable uses.



For Screw Size	Dimensions			THE 40 LINE		THE 99 LINE	
	I.D.	O.D.	Thick.	Cat. No.	Approx. Quan.	Cat. No.	Approx. Quan.
#4	.125"	1/8"	1/16"	*3511	80		
#6	.149"	3/8"	1/16"	*3512	80	3512-99	500
#8	.178"	7/8"	1/16"	*3513	80	3513-99	500
#10	.203"	1 1/8"	1/16"	*3514	75	3514-99	800
1/4"	.265"	1 1/2"	1/16"	*3515	60	3515-99	800
Assorted				†3510	80		

## WALSCO LOCK WASHERS

Made of special steel and rust-proofed. Sizes listed below are the most popular ones in the radio and electrical appliance field.



For Screw Size	THE 40 LINE		THE 99 LINE	
	Cat. No.	Approx. Quan.	Cat. No.	Approx. Quan.
#6	*3592	50	3592-99	300
#8	*3593	45	3593-99	275
#10	*3594	45	3594-99	275
1/4"			3595-99	200
3/8"			3596-99	125
Assorted	†3590	45		

## WALSCO KNOB FELT WASHERS

Keep cabinets from being scratched and make knobs turn smoothly. Made of tough brown felt with 1/4" hole to fit standard control and condenser shafts. O.D. is approx. 3/4" and thickness 3/16".



Felt Washers in cellophane bag	THE 40 LINE		THE 99 LINE	
	Cat. No.	Quan. per pkg.	Cat. No.	Quan. per pkg.
	†3490	45	3490-99	250

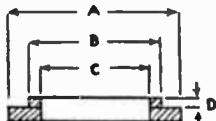
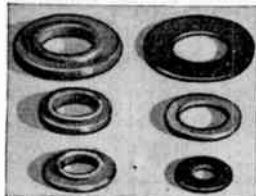
## WALSCO MICA WASHERS AND SHIMS

An assortment of flat and round shims and washers. Required by experimenters and for repairing of trimmers, soldering irons, heater elements, etc.

Cat. No.	List Price per pkg.
*3428—Assorted sizes	\$0.40

## WALSCO INSULATING WASHERS

Precision made of high-grade vulcanized fibre or phenolic material. Used on electronic and electrical equipment to insulate parts from chassis, etc.



Overall thickness of extruded washers is approximately 3/16" and of the flat washers 1/16".

In the "99 LINE," WALSCO Insulating Washers come in packages of either flat or extruded washers. In the "40 LINE" the packages contain both flat and extruded washers.

Dimensions	Fits Screw Size	THE 40 LINE		THE 99 LINE	
		Cat. No.	Quan. per pkg.	Cat. No.	Quan.
1/16"	#6	*3431	15 and 15	3431-F-99	250
1/8"	#8	*3432	15 and 15	3432-F-99	250
3/16"	#10	*3433	12 and 12	3433-F-99	250
1/4"	1/4"	*3434	12 and 12	3434-F-99	225
5/16"	3/8"	*3435	10 and 10	3435-F-99	175
3/8"	1/2"	†3430	15 and 15		
Assorted					

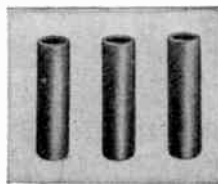
## WALSCO SPRING (FRICTION) WASHERS



Used in record changers, automatic tuning assemblies, etc. Assortment contains many popular sizes of phosphor bronze and spring steel washers.

Cat. No.	List Price per pkg.
†3425—Approx. 15 Assorted Spring Washers	\$0.40

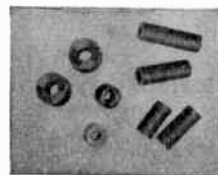
## WALSCO FUSE INSULATORS



Standard fibre insulators for use on automobile radios. Two lengths included fit all standard 1/4" diameter fuses.

Cat. No.	List Price per pkg.
†2690—Approx. 16 Assorted Insulators	\$0.40

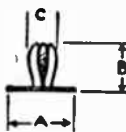
## WALSCO METAL AND INSULATING SPACERS



A popular assortment of spacers of various lengths, with hole size to accommodate #6 and #8 screws. Often used for mounting sockets, switches, and for raising panels, chassis, and condensers.

Cat. No.	List Price per pkg.
*2670—Approx. 12 Assorted Insulating Spacers	\$0.40
*2680—Approx. 12 Assorted Metal Spacers	0.40

## WALSCO SNAP-IN TRIMOUNTS



Faster than screws. Use them on modern radio sets, back covers, dial scales, chassis, built-in antennae, etc., to speed assembly and repairs.

Dimensions	For Hole	THE 40 LINE		THE 99 LINE	
		Cat. No.	Quan. per pkg.	Cat. No.	Quan. per pkg.
13"	1/8"	*3462	20	3462-99	125
1/2"	3/8"	*3464	18	3464-99	100
3/8"	1/2"	*3465	15	3465-99	85
Assorted		†3460	approx. 20		

## WALSCO RETAINING RINGS AND "C" WASHERS

A necessity in the servicing of volume controls, record changers, etc. The rings are tempered spring steel. The washers are annealed.



Cat. No.	Description	Approx. No. of units per pkg.	List Price per pkg.
†3420	Assorted Rings & Washers	25	\$0.40
*3422	"C" Washers for 1/4" Shaft	15	0.40
*3423	"C" Washers for 3/8" Shaft	18	0.40

Dimensions	Fits Screw Size	THE 40 LINE		THE 99 LINE	
		Cat. No.	Quan. per pkg.	Cat. No.	Quan.
1/16"	#6	*3431	15 and 15	3431-F-99	250
1/8"	#8	*3432	15 and 15	3432-F-99	250
3/16"	#10	*3433	12 and 12	3433-F-99	250
1/4"	1/4"	*3434	12 and 12	3434-F-99	225
5/16"	3/8"	*3435	10 and 10	3435-F-99	175
3/8"	1/2"	†3430	15 and 15		
Assorted					

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

\*Std. Pack: Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one standard package. Example: 1 #3330-B consists of standard box containing 20 packages #3330. †Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages. When ordering add suffix "B" for box or suffix "D" for display card. See example above.



# WALSCO ELECTRONIC HARDWARE

The 99 Line

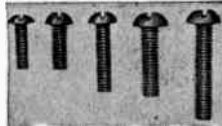
The 40 Line

IN PERMANENT *Transparent* PLASTIC PACKED IN HANDY STORAGE BOXES with SLIDING TOPS ECONOMICAL PLASTIC BAGS



## WALSCO STEEL MACHINE SCREWS

Round head, cadmium-plated, steel machine screws. Available in assortments or individual sizes, conveniently packaged for experimenters, servicemen and amateurs.



**WALSCO Standard Machine Screw Ass'tm't**  
All the standard sizes used in electronic and similar work are combined in this handy, inexpensive assortment. It contains Nos. 6, 8, 10 screws— $\frac{1}{4}$  to 1" long.

	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. Quan.	\$1.65 List Ea. Pkg.	Approx. Quan.
Assorted Screws.....	†3560	40	3560-99	200

## WALSCO Small Machine Screw & Nut Ass'tm't

A special assortment of extra small screws (Nos. 2 and 4), and nuts so often needed in electronic and experimental work for fastening small parts, to replace rivets, etc.

Cat. No.	List Price, per pkg.
†3360—Approximately 50 Assorted Screws and Nuts.....	\$0.40

## PACKAGES OF SCREWS — INDIVIDUAL SIZES

Size	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. Quan.	\$1.65 List Ea. Pkg.	Approx. Quan.
# 6-82 x $\frac{1}{4}$ "	†3100	40	3100-99	225
# 6-82 x $\frac{3}{8}$ "	†3110	85	3110-99	225
# 6-82 x $\frac{1}{2}$ "	†3120	85	3120-99	200
# 6-82 x $\frac{3}{4}$ "	*3130	80	3130-99	175
# 6-82 x 1"			3132-99	150
# 8-82 x $\frac{1}{4}$ "	*3135	80	3135-99	200
# 8-82 x $\frac{3}{8}$ "	†3140	80	3140-99	175
# 8-82 x $\frac{1}{2}$ "	†3150	25	3150-99	160
# 8-82 x $\frac{3}{4}$ "	†3160	20	3160-99	140
# 8-82 x 1"			3162-99	125
# 10-82 x $\frac{1}{4}$ "	*3165	20	3165-99	140
# 10-82 x $\frac{3}{8}$ "	*3167	20	3167-99	115
# 10-82 x 1"	*3169	15	3169-99	100

## WALSCO SMALL ESCUTCHEON AND WOOD SCREW ASSORTMENT



This assortment contains the extra small sizes of hard-to-get wood screws as needed by radio men, model builders, etc., for fastening name plates, escutcheons and numerous other devices.

Cat. No.	List Price
†3550—Approx. 30 Assorted Screws, per pkg.....	\$0.40

## WALSCO Standard Wood Screw Assortment

Handy assortment for workshop or home. Contains round and flathead screws of popular sizes in brass and steel.



Cat. No.	List Price
†3553—Approx. 30 Screws, per pkg.....	\$0.40

## WALSCO THREADED STEEL RODS



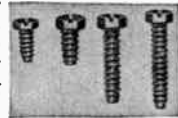
These rods have many uses in service and repair work and are made from the finest cold rolled steel to give maximum strength. Each package contains one each

of 6-32 and 8-32 threaded rod. Both 8 inches long.

Cat. No.	List Price
†2640—1 each 6-32 and 8-32 Threaded Rod.....	\$0.40

## WALSCO SHEET METAL AND SELF-TAPPING SCREWS

These screws cut their own threads in either metal or plastic. Just drill a hole and drive in the screw—no nut or tapping required. Ideal for mounting parts to chassis, replacing rivets and eyelets, etc.



Size	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. Quan.	\$1.65 List Ea. Pkg.	Approx. Quan.
Assorted	†3470	25	3470-99	125
# 6 x $\frac{1}{4}$ "	†2910	80	2910-99	150
# 6 x $\frac{3}{8}$ "	*2911	25	2911-99	150
# 6 x $\frac{1}{2}$ "	*2912	25	2912-99	150
# 6 x $\frac{3}{4}$ "	*2914	20	2914-99	125
# 6 x 1"	*2916	20	2916-99	125
# 8 x $\frac{1}{4}$ "	*2919	20	2919-99	125
# 8 x $\frac{3}{8}$ "	*2920	20	2920-99	125
# 8 x $\frac{1}{2}$ "	*2922	20	2922-99	125
# 8 x $\frac{3}{4}$ "	*2924	15	2924-99	100
# 8 x 1"	*2926	15	2926-99	100
# 10 x $\frac{3}{8}$ "	*2930	20	2930-99	100
# 10 x $\frac{1}{2}$ "	*2932	16	2932-99	100
# 10 x $\frac{3}{4}$ "	*2934	15	2934-99	100

## WALSCO RACK SCREWS & CUP WASHERS



For mounting panels in racks and cabinets, fastening record-players and recording chassis, etc. Enhances appearance of any assembly. The oval head screws are nickel plated—so are the cup washers.

Size	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. Quan.	\$1.65 List Ea. Pkg.	Approx. Quan.
# 6-82 x $\frac{3}{8}$ " Screws....	*3543	80	3543-99	175
# 8-82 x $\frac{3}{8}$ " Screws....	*3541	25	3541-99	150
# 10-82 x $\frac{3}{8}$ " Screws....	*3542	20	3542-99	100
# 6 Washers ( $\frac{1}{4}$ " O.D.)	*3544	40	3544-99	275
# 8 Washers ( $\frac{1}{2}$ " O.D.)	*3545	40	3545-99	250
# 10 Washers ( $\frac{3}{4}$ " O.D.)	*3546	80	3546-99	200
Asstd. Screws & Washers	†3540	12		

## WALSCO ORNAMENTAL HEAD SCREWS

Antique bronze finished; rosette head. For mounting of speakers, etc.



Size	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. per pkg.	\$1.65 List Ea. Pkg.	Approx. per pkg.
# 6-82 x $\frac{3}{8}$ "	*2951	20	2951-99	125
# 8-82 x 1"	*2952	20	2952-99	125
# 8-82 x $\frac{1}{4}$ "	*2953	12	2953-99	80
Assorted	†2950	15		

## WALSCO STEEL SET SCREWS

Precision, hardened steel set screws in all popular sizes for radio knobs, record changers, home and automobile radios, or wherever set screws are needed.



Size	THE 40 LINE		THE 99 LINE	
	\$0.40 List Ea. Pkg.	Approx. Quan.	\$1.65 List Ea. Pkg.	Approx. Quan.
# 6-82 x $\frac{1}{8}$ "	†3210	15		
# 8-82 x $\frac{1}{8}$ "	†3220	15	3220-99	55
# 8-82 x $\frac{1}{4}$ "	†3230	15		
# 10-82 x $\frac{1}{4}$ "	†3237	15		
Assorted	†3480	15	3480-99	55

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

\*Std. Pack: Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one standard package. Example: 1 #3330-B consists of standard box containing 20 packages #3330.  
†Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages.  
When ordering add suffix "B" for box or suffix "D" for display card. See example above.



# WALSCO ELECTRONIC HARDWARE

The 99 Line

The 40 Line

IN PERMANENT TRANSPARENT PLASTIC PACKED IN HANDY STORAGE BOXES WITH SLIDING TOPS ECONOMICAL PLASTIC BAGS



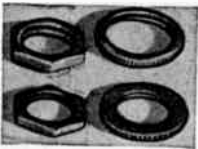
## WALSCO MACHINE SCREW NUTS



WalSCO nuts are "Small Pattern" as preferred in the electronic and electric trade. Precision made and plated.

THE 40 LINE			THE 99 LINE			
Size	Steel, Cadm. Pl.	Apprx. Quan.	Brass, Nickel Pl.	Apprx. Quan.	Steel, Cadm. Pl.	Apprx. Quan.
# 4-40						
# 6-32	‡3180	85	3180-B-99	150	3175-99	200
# 8-32	‡3190	80	3190-B-99	125	3180-99	200
# 10-32	‡3195	25	3195-B-99	100	3190-99	200
Assorted	‡3520	35			3195-99	175
					3520-99	175

## WALSCO SPECIAL MOUNTING NUTS



Various kinds of nuts used on volume controls, switches, jacks, potentiometers, etc. A "must" for every radioman and electrician. All nuts are cadmium or nickel plated.

Description	Cat. No.	Apprx. Quan.	Cat. No.	Apprx. Quan.
3/8" x 32 Vol. Control Hex Nut...	*3531	15	3531-99	85
3/8" x 32 Toggle Switch Hex Nut...	*3532	8	3532-99	50
3/8" x 32 Toggle Switch Ring Nut...	*3533	8	3533-99	50
Assorted	‡3530	12		

## WALSCO ACORN NUTS

Greatly improves the appearance on panel assemblies, test instruments, cabinets, etc. These PAL type steel nuts are self-locking and bright cadmium plated.

Cat. No.	List per pkg.
*2960—12 Assorted Nuts.....	\$0.40

## WALSCO KNURLED THUMB NUTS



Precision-made, Brass Nuts.	List Price per pkg.
*2971—Approx. 8 Nuts, 6-32.....	\$0.40
*2972—Approx. 8 Nuts, 8-32.....	0.40
*2973—Approx. 4 Nuts, 10-32.....	0.40

## WALSCO WING NUTS

Handy for experimental work and hobby craft. Made of Steel and plated.	List Price per pkg.
Cat. No.	
*2975—12 Nuts, 6-32.....	\$0.40
*2976—8 Nuts, 8-32.....	0.40
*2977—6 Nuts, 10-32.....	0.40

## WALSCO SPEED NUTS

Self-locking and easy to install. Often required for replacement on many record changers, tuning units, etc.

Cat. No.	List Price per pkg.
*2990—Approx. 30 Assorted Speed Nuts.....	\$0.40

## WALSCO TWIN-LEAD WIRING NAILS

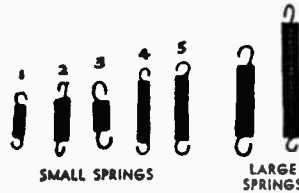


Designed for attaching 800-ohm leads to walls, moldings, etc. Ornamental head greatly improves the appearance of the installation. WALSCO nails have no appreciable effect on the impedance of the line as the heads consist almost entirely of insulating material.

THE 40 LINE	THE 99 LINE
\$0.40 List Ea. Pkg.	\$1.65 List Ea. Pkg.
Cat. No.	Cat. No.
‡2552	2552-99
85	200

WALSCO Wiring Nails.....

## WALSCO DIAL DRIVE SPRINGS



Made of fine music wire for greater flexibility. Available in all standard sizes. Carefully looped at each end, rust-proofed and cadmium plated.

Illustration Approximately two-thirds actual size

THE 40 LINE	THE 99 LINE
\$0.40 List Ea. Pkg.	\$1.65 List Ea. Pkg.
Assorted (Large and Small) Springs	‡3400
Assorted Small Springs.....	‡3410
10	10

Cat. No.	Overall Length	Dimensions		Wire Thickness	Pictre Number	No. of springs per pkg.	List Price
		Diam.	Plature				
*3411	1/2"	3/8"	1	.016"	1	10	\$0.40
*3412	3/4"	3/8"	2	.018"	2	10	0.40
*3413	7/8"	3/8"	3	.020"	3	10	0.40
*3414	1"	3/8"	4	.016"	4	8	0.40
*3415	1 1/8"	3/8"	5	.020"	5	8	0.40

## WALSCO RADIO KNOB SPRINGS

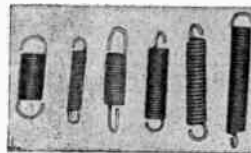


The modern method of fastening knobs to shafts. Available in all regular sizes and shapes. The assortment is complete and most useful to radio shops. Finest grade of selected steel is used.

Cat. No.	Pictre No. Assorted	Approx. No. of Springs per pkg.	List per pkg.
‡3450	Assorted	16	\$0.40
*3451	1	8	0.40
*3452	2	10	0.40
*3453	3	10	0.40
*3454	4	18	0.40
*3455	5	20	0.40
*3456	6	25	0.40
*3457	7	25	0.40
*3458	8	25	0.40
*3459	9	25	0.40

(Bulk Prices Upon Request)

## WALSCO EXPANSION SPRINGS



Very handy for radio and electrical shops, laboratories, etc. The assortments contain various sizes of springs for many applications: record changers—to name one of a thousand.

Cat. No.	List per pkg.
‡3290—10 Assorted Large Springs.....	\$0.40
‡3390—10 Assorted Small Springs.....	0.40

## WALSCO COMPRESSION SPRINGS



A hard-to-get item. The WalSCO assortments contain all of the springs often needed for repair work on radio and electronic equipment, motors, appliances, etc. Available in two assortments.

Cat. No.	List per pkg.
‡3370—20 Assorted Small Springs.....	\$0.40
‡3380—15 Assorted Large Springs.....	0.40

## WALSCO ESCUTCHEON PIN ASSORTMENT



Brass finished pins in various sizes and lengths from 1/4" to 3/8".

Cat. No.	List per pkg.
‡3555—Approx. 100 Asstd. Pins	\$0.40

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

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\*Std. Pack: Display Box of 20 Individual Packages. Add suffix "B" to part number to indicate one standard package. Example: ‡3330-B consists of standard box containing 20 packages ‡3330.  
 †Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages.  
 When ordering add suffix "B" for box or suffix "D" for display card. See example above.

### WALSCO RADIO CEMENT

**Vibration-Proof Heat Resisting  
Unsurpassed Adhesive Power**

An elastic cement especially made for the manufacture and repairing of speakers and for general radio work. Unaffected by vibration, dries fast and will never become brittle with age. • The latest developments in synthetic resins and gums are incorporated in Walsco Radio Cement.

• In addition to its use for speaker repair, Walsco Radio Cement can be used for repairing cabinets, loose tube bases, grid caps, etc. It will provide a strong bond between almost any materials and is not affected by high temperature, moisture or oil. All bottles come with built-in brush and have an evaporation-proof cap liner.



Cat. No.	List Price
51—1 3/4 oz. tube.....	\$0.55
52—2 oz. bottle.....	0.60
54—4 oz. bottle.....	1.00
58—8 oz. bottle.....	1.75
59—1 pt. bottle.....	3.30
50-GL—1 gal. can.....	10.30

Also available in 5, 15, 50 gal. containers.

### WALSCO PLASTIC CEMENT

Especially made to repair broken plastic cabinets, knobs, etc. Waterproof, heat-resisting, and heavier in substance than Walsco Radio Cement. Unexcelled as "Household Cement," "Model Airplane Cement," etc. Cements Plastics, Metal, Wood, Glass, etc. Dries fast and forms an exceedingly strong bond.



Cat. No.	List Price
41—1 3/4 oz. tube.....	\$0.55
42—2 oz. bottle.....	0.60
44—4 oz. bottle.....	1.10
48—8 oz. bottle.....	1.75

### WALSCO VINYLITE CEMENT

This adhesive uses the new Vinylite plastic resin as a base and has remarkable properties such as high tackiness, extreme flexibility when dry and excellent adhesion to metals, plastics, leather, cardboard and paper. Fast drying. Also an excellent thermoplastic cement for joining nonporous materials (e.g. metals). In this case the cement is applied to both surfaces and dried after which the parts are pressed together and bond established by heating with flatiron, soldering iron, etc.



Cat. No.	List Price
25—2 oz. bottle.....	\$0.70

### WALSCO ALL-PURPOSE RUBBER CEMENT

For cementing rubber parts to metal or wood, rubber mounts to chassis, rubber cushions to lids, etc.—gives an especially strong bond. A Radio Serviceman should always have a bottle on his work bench.



Cat. No.	List Price
112—2 oz. bottle.....	\$0.60
114—4 oz. bottle.....	1.10

### WALSCO FABRIC CEMENT

**Does Not Penetrate the Fabric**

Especially made for attaching grille cloth, turntable felt, covering of portable radios, etc. Dries very fast; is unaffected by moisture, sunlight, and high temperature and does not become brittle. Indispensable to Radio Dealers and Servicemen—eliminates the danger of spoiling the outside of a grille cloth, turntable felt, or other fabrics, since it does not penetrate the material.



Cat. No.	List Price
21-A—2 oz. bottle.....	\$0.60

### WALSCO WOOD GLUE

An "extra strength" adhesive incorporating the latest chemical developments and resins. A "must" item for every repair shop. Bottle caps have non-sticking rubber gaskets.



Cat. No.	List Price
222—2 oz. bottle.....	\$0.60
224—4 oz. bottle.....	1.00

### WALSCO CEMENT SOLVENT AND THINNER

This Cement-Solvent is used for loosening cement on speaker cones, voice coils, and other parts where cement has been applied previously. Recommended also for thinning Walsco Radio Cement, Plastic Cement, and Fabric Cement.



Cat. No.	List Price
62—2 oz. bottle.....	\$0.50
64—4 oz. bottle.....	0.85
68—8 oz. bottle.....	1.15
69—1 pt. bottle.....	1.65

### WALSCO POLYSTYRENE CEMENT AND COIL DOPE

**For Bonding Polystyrene Parts and Coil Coating in Radio and High Frequency Work**  
A Polystyrene solution with a high solid content. Can be brushed on or parts can be dipped. Renders coils or other parts moisture-proof. Holds windings firmly in place due to a certain amount of shrinkage upon drying. Electrical losses due to coating with this cement are negligible—even if used for high or ultra-high frequency work.



Cat. No.	List Price
154—4 oz. bottle.....	\$1.00

Larger Sizes on Request

### WALSCO Polystyrene Solvent and Thinner

This thinner is especially designed for use with Walsco Polystyrene Cement where regular thinner cannot be used.

Cat. No.	List Price
164—4 oz. bottle.....	\$0.85

### WALSCO IMPRECONE

An impregnating fluid which will render speaker cones moisture-repellent and impervious to fungus and mildew. Also prevents the drying out of cones under heat or adverse climatic conditions. Restores brittle cones to original texture. Developed for use in drive-in theatre installations, on outdoor speakers, car radios, etc.



Cat. No.	List Price
98 —8 oz. bottle.....	\$ 1.60
98-GL—1 gal. can.....	17.50

For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

## CLEANERS — LUBRICANTS "CONTACTENE"—"NO SLIP"

### WALSCOLUB - B



A recently-developed chemical compound in thin paste form. WALSCOLUB - B counteracts oxidation, prevents corrosion of metals and eliminates noise on band switches, push buttons, tuners, volume and other controls, as well as air-exposed electrical contacts, attenuators, etc. WALSCOLUB-B will not change electrical properties. It is superior to any graphite compound for this purpose. Ideal on metal surfaces to prevent rust. Servicemen: Its use will save you both time and money. Once you have tried it, you will never be without it! Large, handy applicator tube.

Available also in 1-lb., 5-lb. and 25-lb. containers for industrial users. Prices on request.

Cat. No.	22—1 3/4 oz. tube	List Price	\$0.60
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### WALSCO CONTACTENE

New Improved "Contact Cleaning Fluid"

- Cleans contacts and controls.
- Keeps controls and contacts noise-free.
- Lubricates and reduces friction.



A fast-evaporating combination of special solvents affording greatest cleaning power without affecting insulating materials. After evaporation of the solvents, it forms a thin film that protects the contacts. Contactene is recommended for treating volume controls, band switches, tuning condensers, springs, etc., to eliminate noisy operation. Bottles come with built-in brushes.

Cat. No.		List Price	
82—2 oz. bottle			\$0.50
84—4 oz. bottle			0.85
88—8 oz. bottle			1.15
89—1 pt. bottle			1.80

### WALSCO "LUBRIPLATE"



The latest development in chemicals for lubricating purposes. Much superior to ordinary greases because of its higher lubricating and lasting qualities. Its viscosity does not appreciably change with temperature. Used on phonograph motors, record changers, switches, and all appliances that require a grease-type lubricant. In large handy "applicator" tube.

Cat. No.		List Price	
23-A—2 oz. tube			\$0.60

### WALSCO "NO-SLIP"

A newly developed chemical composition that greatly increases the friction of pulleys, cords or belts. Contracts, "sets" and shrinks the fibres at the same time. Stops instantly any slippage of Dial Belts, Dial Cords, etc. Easily applied with brush. Indispensable to any radio man.

Cat. No.		List Price	
401—1/2 oz. bottle			\$0.45
402—2 oz. bottle			0.75



### WALSCO "NO-OX"\*

"The Miracle Electronic Contact Fluid"



Fast-acting liquid chemical formulated with a neutral, non-gumming special lubricating base. The answer to the radio-man's need for an outstanding contact and control cleaner. Contains no solvents; its corrosion-dissolving action is entirely chemical. Cleans, lubricates and preserves. Proved in tens of thousands of applications by radio laboratories, service shops, broadcasting companies, motion picture, sound and recording studios, etc. "NO-OX" is highly recommended for treatment of volume and tone controls, attenuators, mixers, relay contacts and similar equipment.

Cat. No.		List Price	
101—1 oz. bottle			\$0.85
102—2 oz. bottle			1.60
100-16—1 pt. bottle			12.50

\* Mfd. under exclusive licensing agreement with NO-OX Laboratories. Trade mark registered.

### WALSCO SILICONE COMPOUND

For treating TV and amateur antenna lead wires, insulators and terminals to prevent impedance changes due to moisture conditions. Effective even in seacoast and marine locations.

This compound also prevents high voltage breakdown and arcing under humid conditions since it forms a moisture-repellent high-dielectric seal. WALSCO Silicone is very effective in waterproofing and preserving automobile and aircraft spark plugs and ignition systems.

Cat. No.		List Price	
24—1 oz. tube			\$ 2.00
24D—Display of 12 1 oz. tubes			24.00

### WALSCO CARBON TETRACHLORIDE

For general cleaning and spot removing. Dissolves dirt and grease instantly. May be used on most delicate parts. Chemically pure, rapid drying, non-explosive and non-inflammable. A safe cleaning fluid.

Cat. No.		List Price	
214—4 oz. bottle			\$0.75
219—16 oz. bottle			1.75
214-GL—1 gal. can			6.90



### WALSCO RADIO DIAL OIL



A light-bodied lubricating oil for all electronic and electrical appliances — absolutely free of acids or gummy substances. Also recommended as a rust preventive for radio chassis, tools, machinery, etc.

Cat. No.		List Price	
72—2 oz. bottle			\$0.75
74—4 oz. bottle			2.60

### WALSCO CONTACTENE INJECTOR

For applying WALSCO Contactene, NO-OX, Dial Oil, etc., to spots which are not accessible with ordinary applicators. "Injector Needle" will permit application of contact chemicals to most volume controls without unsoldering connections or taking control apart.

This tool is made with a highest quality surgical-grade needle, and an oil-resistant rubber bulb.

Cat. No.		List Price	
989—Contactene Injector			\$0.75
989 D—Display of 12 No. 989			9.00



For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.



## WALSCO SCRATCH REMOVING POLISH

"Makes Scratches Disappear"

A blend of polishing and staining ingredients. Removes scratches from cabinets, radios, furniture, etc., and polishes at the same time. Very easy to apply. Will not change shade of finish. Comes in two shades: "Dark" for walnut, mahogany, etc., "Light" for light maple, light oak, etc.



Cat. No.	Light	Dark	List Price
414	434	4 oz. bottle	\$0.50
416	438	8 oz. bottle	0.75

Standard Package: 4 oz. bottles.....1 doz.  
8 oz. bottles.....2 doz.

## WALSCO SUPER POLISH

"A Concentrated White Cream Wax Polish"

Does two things: First, it removes any old polish, grease or dirt that may be on the cabinet or furniture. Second, it forms a hard, dry and durable film that will protect the object for a long time, giving it a "brand new" appearance. Requires very little rubbing.

Cat. No.	List Price
412—4 oz. bottle	\$0.50
418—8 oz. bottle	0.75

Standard Package: 4 oz. bottles.....1 doz.  
8 oz. bottles.....2 doz.

## WALSCOCLEAR (Formula 91)

A scientific preparation for cleaning plastics such as television filters, lenses, optical systems, vinyl and LP records, etc.

WALSCOCLEAR contains a new chemical discovery that counteracts the dust-attracting electrostatic effect which usually interferes with proper polishing of plastic articles.

WALSCOCLEAR is very easy to apply, gives a wonderful polish, and is absolutely harmless to all plastics.

Cat. No.	List Price
91—4 oz. bottle	\$0.50
91D—Display of 12 bottles of No. 91	6.00



## ANTI-CORONA LACQUER

A special, fast-drying coating of very high dielectric strength (over 15,000 V. for a film thickness of 0.010"). Prevents corona discharge and arcing in high-voltage supply of TV sets, when applied to wiring, solder lugs, sharp corners and points on chassis, inside high-voltage cage, etc.

Cat. No.	List Price
195—2 oz. bottle	\$1.60
196—1 pt. can	8.35

## WALSCOFUX

A non-corrosive soldering flux. Quick acting, easy to apply. May be safely used for all electrical, radio and telephone work. Helps to keep the iron tip clean.

Cat. No.	List Price
220—2 oz. bottle with applicator	\$0.60



## WALSCO AIR-DRY WRINKLE VARNISH

Easy to apply in one coat. WALSCO Air-Dry Wrinkle Varnish provides a film that is hard, tough, and very resistant to wear. Repairs and replaces original wrinkle finish of manufactured equipment. No baking required. WALSCO Wrinkle Varnish will air-dry at room temperature.

Standard colors: grey and black. Other colors upon request.



Cat. No.	List Price
145—2 oz. jar (specify color)	\$0.60
147—16 oz. can (specify color)	3.00

## WALSCO CRYSTALLIZING LACQUER

Easily applied to metal, wood, cardboard, etc.—does not require experience. No spraying equipment or baking oven necessary. Brushed on, will dry in about thirty minutes, leaving an absolutely professional finish. Identical to finish found on commercial chassis, panels, speakers and transformers. WalSCO Lacquer Sealer, Cat. No. 142, should be used as undercoat if this lacquer is to be applied on porous materials or over other finishes. Available colors: Black, Green, Grey, Brown, Clear. Specify color when ordering.

Cat. No.	List Price
122—2 oz. jar	\$0.60
129—16 oz. can	3.75
142—Sealer, 2 oz. jar	0.50



## WALSCO SATIN FINISH LACQUER (TELEPHONE)

Made for commercial and amateur use on cabinets, chassis, panels, meters, racks, etc. This "satin finish" lacquer dries very fast and produces the "original finish" of most standard telephone and communication equipment. It air dries. May be brushed or sprayed.

Cat. No.	List Price
Black Grey	
172—2 oz. jar	\$0.60
179—189 1 pt. can	3.00



## WALSCO INSULATING VARNISH

WalSCO "air-dry" varnish is fast-drying and produces excellent results when used on radio coils, transformers, solenoids, motors, and all electrical appliances. Withstands heat and is extremely resistant to acid, oil, and grease. It is non-corrosive and moisture-proof. An all-around clear insulating varnish.

Cat. No.	List Price
192—2 oz. bottle	\$0.60
193—1 pt. can	2.50
194—1 gal. can	12.00



## WALSCO LIGHT BULB COLORING

A transparent, heat and moisture-resisting dipping lacquer especially made for coloring bulbs such as used in radio dials, signal systems, auto dash lights, and fancy illumination. Big jars permit dipping of even larger bulbs.

Cat. No.	List Price
116 Red—2 oz. jar	\$0.60
117 Blue—2 oz. jar	0.60
118 Green—2 oz. jar	0.60
119 Assorted—Kit of 3	1.60



### WALSCO RADIO CABINET PATCHING OUTFIT

"The Most Popular Kit on the Market"



A complete kit especially designed for radio men who have little experience in cabinet work. Over 95% of all cabinet-finish damages can be repaired with this kit. The kit contains two shades of Spirit Walnut Stain, Dark Brown Lacquer, Plastic Wood, two shades of Ivory Spirit Enamel, Patching Lacquer, Super Polish, Alcohol, Brushes, Garnet Finishing Paper, French Polishing Pad, and Steel Wool, together with complete Instruction Booklet.

Cat. No.	List	Dealer's Net
K-10—In sturdy box with hinged lid.....	\$6.50	\$3.90
K-10-W—In California redwood case.....	7.50	4.50

### WALSCO RADIO CABINET REPAIR KIT

A very handy compact and inexpensive kit that fills the requirements of many shops and stores. Especially useful for the Dealer or Serviceman who has only occasional cabinet repairs. The kit contains one bottle each of the following: Ivory Spirit Enamel—light and dark; Lacquer Enamel—Dark Brown; Spirit Stain; Super Polish; French Varnish; Finishing Paper; Steel Wool; Polishing Cloth; Instruction Booklet.



Cat. No.	List	Dealer's Net
K-9.....	\$3.00	\$1.80

### WALSCO STICK SHELLAC KIT



An inexpensive kit for servicemen who have some experience in cabinet refinishing. Combined with Radio Cabinet Patching Outfit (K-10) it makes a most economical and completely professional kit for repairing radio cabinets. The shellac sticks match in color almost any cabinet on the market. The WalSCO shellac rubbing fluid makes it possible to smooth the patch without any effort or skill. Kit includes: six colors Stick Shellac, Alcohol Lamp, Burn-in Spatula, bottle of Shellac Rubbing Fluid, Felt, Steel Wool, Alcohol and Instructions.

Cat. No.	List	Dealer's Net
K-11.....	\$3.50	\$2.10

### REFILLS OF POPULAR REFINISHING MATERIALS AS CONTAINED IN ABOVE KITS

Cat. No.	Stains	List Price
27	Spirit Stain, 1 oz. (Walnut, Mahogany, Maple, Black)	\$0.30
288	Spirit Stain, 8 oz.	1.40
289	Blending Stain (Lt. Brown, Med. Brown)	0.75
Patching Lacquer (Improved French Varnishing Materials)		
290	4 oz. bottle	1.20
291	16 oz. bottle	3.50
Stick Shellac Rubbing Fluid		
295	4 oz. bottle	.75
296	16 oz. bottle	1.75
Stick Shellac		
299	Set of 8 assorted colors	1.50

### WALSCO "SUPER-CHIEF" REFINISHING KIT

A "Must" Item



This is the most complete kit of its kind on the market. Designed by WalSCO for radio dealers. It contains everything which is needed to make an old radio look like new—all handy in one box-type carrying case. Contents of kit can be used by either skilled or unskilled refinishers, to completely refinish old radios and trade-ins, or to quickly patch up scratches, mars, etc. This kit will pay for itself on the first or second job. Every first-class radio dealer should have one. Kit contains the following:

Spirit Stain Dark Walnut	Scratch Removing Polish (Dark)
Spirit Stain Black	Scratch Removing Polish (Light)
Spirit Stain Mahogany	Patching Lacquer
Spirit Stain Maple	Alcohol Lamp
Super Polish	Alcohol
Spirit Stain Light Walnut	Spatula
Blending Stain Light Brown	Felt
Blending Stain Medium Brown	Polishing Cloth
Lacquer Enamel Light Ivory	Polishing Pad
Lacquer Enamel Dark Brown	Garnet Paper (8 sheets)
Lacquer Enamel Dark Ivory	Instruction Book
Shellac Rubbing Fluid	Brushes (3 different sizes)
Stick Shellac (8 asstd. shades)	

Cat. No.	List	Dealer's Net
K-26.....	\$18.50	\$11.10

### WALSCO FURNITURE REFINISHING KIT

Ideal for touch-up work on radios, furniture, pianos, etc. Scratches, mars, dents, broken edges can be repaired quickly. Contains: Super Polish, Patching Lacquer, Alcohol, Spirit Stains in Walnut, Mahogany, Maple and Black; Shellac Rubbing Fluid, Plastic Wood, six colors Stick Shellac, Alcohol Lamp, Spatula, Brushes, Garnet Finishing Paper, Complete Instruction Book. Kit furnished in California Redwood case with hinged lid.



Cat. No.	List	Dealer's Net
K-15.....	\$8.00	\$4.80

### WALSCO TIRE STATIC NEUTRALIZING KIT

- Reduces or Eliminates Automobile Radio Tire Static.
- Dissipates Body Contact Shock (Door-handle Sparks).

This kit contains a special injector gun and 5 packages of WALSCO Static Neutralizing Powder (one for each tire, including spare). The powder is blown into each tire in a very simple operation, which takes just a few minutes and lasts for the life of the tire.



Cat. No.	List Price
980—Tire Static Neutralizing Kit, complete with injector, powder and instructions.....	\$2.50
982—Injector gun only.....	1.50
985—Powder only (enough for 5 passenger-car tires).....	1.00

### WALSCO FLOCK FINISH SPRAY KIT

For flock finishing of radio cabinets, speaker grilles, interior of record and other cabinets, turntables, jewelry and gift boxes, toys, novelties and many automotive and hobby uses. This original WALSCO Flock Kit is very easy to use and requires no skill — anyone can obtain expert results. Contains everything to produce a colorful, velvet-like and durable flock finish. The kit includes patented felt flock spray gun, ivory and brown felt flock, undercoats to match, thinner, brushes and complete instructions.

Cat. No. K-50—Complete Flocking Kit..... List Price, \$11.90

### WALSCO FELT FLOCK MATERIALS

#### Felt Flock

Made of precision cut, lustrous rayon. Packed in 3 1/4 oz. containers (covers 7 to 10 square feet). List Price.....\$1.65

Cat. No.	Color	Cat. No.	Color
470	Brown	475	Green
471	Ivory	476	Silver
472	Blue	477	White
473	Taupe	478	Black
474	Red	479	Canary
474-1	Maroon		

List Price

Flock per pound (specify color).....\$5.50

#### Flock Undercoat

Provides proper adhesive and color base for felt flock. Packaged in halfpint cans (covers 10-15 square feet of non-porous surface). List Price.....\$1.65

Cat. No.	Color	Cat. No.	Color
480	Brown	484-1	Maroon
481	Ivory	485	Green
482	Blue	486	Silver-White
483	Taupe	488	Black
484	Red	489	Canary

List Price

Undercoat per gal (specify color).....\$14.40



#### Undercoat Thinner

For thinning of Undercoat, if necessary, and washing out brushes.

Cat. No. 468—Half-pint can..... List Price \$0.55

#### Felt Flock Spray Gun

Same as contained in WALSCO Flock Finish Spray Kit.

Cat. No. 455..... List Price \$4.35

### WALSCO INSULATING TUBING (SPAGHETTI)

#### WALSCO FLEXITUBE

A high-grade synthetic extruded vinylite tubing for electronic and electrical insulation. Extremely flexible and resistant to abrasion. High dielectric strength (average 12,000-volt). Resistant to cold or heat from minus 65°F to plus 185°F. (Minus 54°C to 85°C). This tubing is impervious to water, oil, alcohol and most acids and alkalis.

List Price, per pkg.....\$0.95

Cat. No.	Size B & S Gauge No.	Approx. I.D. inch	I.D. mm	Quantity per pkg.*
600	18	.042	1	20 ft.
601	16	.053	1.4	20 ft.
602	14	.066	1.6	18 ft.
603	12	.085	2	16 ft.
604	10	.106	2.7	14 ft.
605	8	.133	3.5	12 ft.
606	6	.166	4	10 ft.
607	4	.208	5	6 ft.
608	2	.263	6.5	6 ft.

609—Twin-lead size: .330" I.D. (see TV Accessory page 20 for details).

\*For larger quantities, write for quotation. Color: Clear will be supplied unless order specifies color. Black, Green or Red available subject to stock on hand.



#### WALSCO RAYOFLEX

A new type "spaghetti tubing" made of heavily lacquered rayon braid. More flexible and superior in many other respects to the conventional varnished tubing. Good dielectric strength (4,000 to 5,000 volts). RAYOFLEX has a smooth and tough surface inside and out. Meets ASTM and VTA Specifications #B2. Sizes up to #6 are packed in handy boxes.

Cat. No.	Size B & S Gauge No.	Approx. Inch	Quantity per pkg.*	List Price per pkg.
630	18	.042	10 ft.	\$0.95
631	15	.059	10 ft.	0.95
632	12	.085	8 ft.	0.95
633	9	.118	5 ft.	0.95
634	6	.166	5 ft.	0.95
635	2	3/4"	30 in.	0.56
636	0	1 1/8"	30 in.	0.65
637	00	3/8"	30 in.	0.69
638	0000	1/2"	30 in.	1.15

\*For larger quantities, write for quotation. Available in: Black, Blue, Red, Yellow. Please specify color when ordering.

#### HANDY ASSORTMENTS



#### RAYOFLEX

Cat. No.	Description	List Price
640	—12 ft. of Assorted sizes and colors, from size 18 to 9.....	\$ 0.90
640-D	—36 Assortments of #640 in Display Box	32.40
641	—6 ft. of Assorted sizes and colors, from size 9 to 1/2".....	0.90
641-D	—24 Assortments of #641 in Display Box	21.60

#### FLEXITUBE

Cat. No.	Description	List Price
620	—20 ft. of Assorted sizes and colors, from size 18 to 10.....	\$ 0.90
620-D	—36 Assortments of #620 in one Display Box.....	32.40
621	—12 ft. of Assorted sizes and colors, from size 10 to 2.....	0.90
621-D	—24 Assortments of #621 in one Display Box.....	21.60

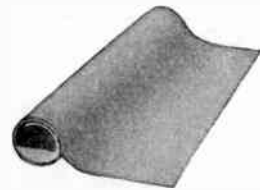
### WALSCO ULTRA-FLEXIBLE MINIATURE WIRES



Cat. No.	Description	List Price
304	—Single-conductor, shielded, for pick-up leads, etc., 25-ft. spool.....	\$1.75
3040	—Same as No. 304, but package of 54" length.....	0.40
305	—Single-conductor, shielded, with black cotton overbraid, 25-ft. spool.....	2.40
3050	—Same as No. 305, but package of 48" length.....	0.40
307	—Two conductors, parallel, color-coded, shielded, 25-ft. spool.....	2.70
308	—Two conductors, tinsel, twisted, with flesh-colored plastic insulation. Designed for headphones, hearing aids, etc., 25-ft. spool.....	3.60

For all connections in electronic devices requiring special thin and flexible leads such as phono pick-ups, miniature earphones, relays, etc. All wires, except tinsel, are 30-gauge, stranded.

### WALSCO INSULATING CAMBRIC



High-voltage (5000-v.) insulating material for repairing transformers, field coils, solenoids, relays, etc. Yellow color; very flexible and durable.

Cat. No.	Description	List Price
645	—Roll of approx. 210 sq. in.....	\$0.75
645-D	—Display of 10 No. 645 rolls.....	7.50

### WALSCO STROBOSCOPE DISK

For checking proper speed of turntables. Lines on disk appear to be stationary on correct speed when observed under 60-cycle AC lighting (preferably fluorescent). For checking 78, 45, and 33 1/2 rpm. speeds.



Cat. No.	Description	List Price
949	—Stroboscope Disk.....	\$0.15

Standard Packing: 25

### WALSCO PLASTIC DIAL CRYSTALS

Can be cut with scissors. Easily press-fitted or cemented in place. Solves the replacement problem on radio dials, instruments, etc.



Cat. No.	Size	List Price
990	—4" Maximum Diameter.....	\$1.10
992	—9" Maximum Diameter.....	1.80
994	—8" x 10" Flat Sheet.....	1.65

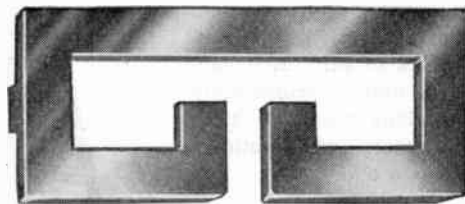
For Bulk Quantity Prices on these items, see WALSCO INDUSTRIAL AND BULK PRICE LIST, pages U-49 to U-56.

### WALSCO CABINET HARDWARE

#### KNOBBS & PULLS

The most distinctive cabinet hardware available. Heavy solid brass, cast or wrought. Attractively finished in satin brass or statuary bronze. Rigid construction, will not rattle. Mounting screws included.

Cat. No.	Size	Finish	List Price, Each
330-1	1 7/8" diam.	Brass	\$0.40
330-2	2 5/8" diam.	Brass	0.70
330-3	3" diam.	Brass	0.80
330-4	3 3/4" long	Brass	1.75
330-5	6 1/2" long	Bronze	1.30
330-6	4 1/4" long	Bronze	0.90
330-7	4" long	Bronze	0.95



Cat. No. 330-4



Cat. No. 330-1



Cat. No. 330-2



Cat. No. 330-3



Cat. No. 330-6



Cat. No. 330-5



Cat. No. 330-7



Cat. No. 331-1

#### WALSCO DRAWER SLIDES

Made of durable, heavy-gauge steel, with a corrosion-resistant finish. Will make drawers slide smoothly and easily — no sticking or drag. Furnished with screws.

Cat. No.	Size	List Price, Per Pair
331-1	14" long (Standard pack: 6 pairs)	\$2.50

### WALSCO MAGNESIUM LADDER for Antenna Installation

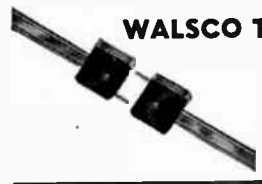
Strong, safe, light-weight magnesium ladders that will not crack, splinter, or rot. Easy to carry and load on truck or car. (20-ft. ladder weighs only approximately 23 lbs.) Weighs much less than wooden ladders and outlasts them three to one.



Cat. No.	Dealer's Net
1600—20 ft. Magnesium extension ladder .....	\$44.50
1602—28 ft. Magnesium extension ladder .....	\$63.25
1603—40 ft. Magnesium extension ladder .....	\$104.75
1605—Pivoted Safety Shoes for above ladder, per pair	\$ 3.90



### WALSCO TWIN-LEAD CONNECTOR



For quickly connecting and disconnecting Twin-Lead. Molded low-loss shells and precision machined contacts.

Cat. No.	List Price
1580—Pair of Connectors.....	\$ 1.40
1580D—Display of 20 pairs....	28.00

### ORNAMENTAL METAL GRILLE

Heavy perforated grille, beautifully "brushed brass" plated and lacquered with gold finish effect. For use over cloth or screening in custom-built radios, high quality P.A. speakers, juke boxes, etc.



Cat. No.	Size	List Price
382	12" x 18"	\$2.75
384	18" x 24"	5.00
386	24" x 36"	9.50



### GRILLE CLOTH

Acoustically perfect cloth available to match walnut, mahogany or light wood finishes.

Cat. No.	Size	List Price
360	12" x 12"	\$0.65
361	18" x 24"	1.65
362	1 yard x 50" (packaged)	6.25

### WALSCO SERVICE TWEEZERS

These handy holding tools are made of fine spring steel and are polished nickel-plated. They have numerous uses in the shop and laboratory, such as starting screws and nuts in difficult places, holding wires and small parts together when soldering, clamping cemented items, installing dial cord and record-changer springs, looping and untying knots on drive cord, etc.



Cat. No.	List Price
570—Self - Closing Tweezer with cross-over action, 6 1/2" long, serrated, blunt points .....	\$0.95
(Standard Package: Display card with 10 tweezers . . . Cat. No. 570D)	572
571—Heavy-Duty Tweezer with slide-lock feature. Length 6 1/2", serrated, blunt points .....	\$1.20
(Standard Package: Display card with 10 tweezers . . . Cat. No. 571D)	572
572—Precision Tweezer with narrow, pointed ends especially suitable for delicate work. Over-all length 4 1/2" .....	\$0.55
(Standard Package: Display card with 20 tweezers . . . Cat. No. 572-D)	575
575—TWEezer KIT, made of durable leatherette, containing one each of the above listed tweezers. Provides servicemen with necessary tweezers for every need. Neat, compact, handy .....	\$3.25
(Standard Package: Display of 12 kits . . . Cat. No. 575-D)	579
579—WALSCO EE-ZEE Starting Tool—A handy tool for starting screws and nuts, inserting springs, etc. Front part of tool is flexible. Will reach into places which are inaccessible with fingers or pliers.....	\$0.75

STATIONS	VOLUME	ON
TV RADIO	PICNIC	OFF
CONTRAST	FINE TUNING	
HORIZONTAL	TOPE FOCUS	
PICTURE	CUSTOM READS	
MODEL LSH	VEET LSH	
HIGHT	ON OFF	ALL SH
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
CHAM SELECTOR	SOUND	
VERTICAL	BRIGHTNESS	
0	0	0

### TV RECEIVER DECALS

Complete sets of markings in gold-colored, easy-to-read type, for custom-built sets or for replacement purposes. Over 40 markings per set, including: Tuning, Contrast, Focus, Sync., Brightness, etc.

Cat. No.	List Price, per package
†255) -2 complete sets of Decals.....	\$0.40
(Standard Pack: 20 packages No. 2551)	

### PLASTIC GRILLE CLOTH

The finest in grille covering. Combines the rich appearance of heavy silk with outstanding wearing qualities. Wrinkle or stain resistant. For use on high-grade radio and TV cabinets. Will give the quality look to any installation. Available in 6 standard patterns. Samples on request.



Cat. No.	List Price
365—1 yd. x approx. 44" packaged .....	\$13.80



### GRILLE SCREENING (Flocked)

Galvanized, rayon-flock covered screening. Attractive, weather-proof and modern. For auto radios, P.A. and Intercom. speakers, etc.

Cat. No.	Size	List Price
Brown	Ivory	
374-1	374-3	8" x 11" .....
376-1	376-3	18" x 24" .....
378-1	378-3	86" x 86" .....

FOR BULK QUANTITY PRICES SEE BULK PRICE LIST

§ Standard Package: Display Card of 12 Tools.  
† Available Either in Standard Display Box of 20 Packages or on Standard Display Card of 20 Packages.  
When ordering add suffix "B" for box or suffix "D" for display card.

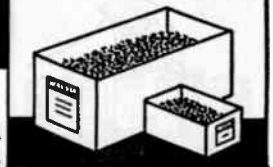


# WALSCO ELECTRONIC HARDWARE

The 99 Line

BULK PACK

IN PERMANENT *Transparent* PLASTIC STORAGE BOXES with SLIDING TOPS • PROMPT DELIVERY FOR INDUSTRIAL AND OTHER QUANTITY USERS



## HOLE PLUGS

THE "99 LINE"

BULK PACK

Description

99c Net, Ea. Pkg.

### SNAP-HOLE PLUGS, Steel, Bright Nickel-Plated

Description	Part No.	Quantity per Package
Fits 1/4" hole.....	8501-99.....	50
Fits 1/2" hole.....	8502-99.....	50
Fits 3/4" hole.....	8503-99.....	40
Fits 1" hole.....	8504-99.....	30
Fits 1 1/4" hole.....	8505-99.....	25
Fits 1 1/2" hole.....	8506-99.....	20

Bulk Part No. Net Prices, per Thousand

Bulk Part No.	250 to 4999	5M and up
8501-1	\$14.30	\$11.00
8501-1A	14.30	11.00
8501-2	14.30	11.00
8501-3	14.30	11.00
8501-4	15.75	12.10
8501-5	20.00	15.40
8501-6	20.00	15.40
8501-7	24.30	18.70
8501-8	28.60	22.00
8501-9	31.45	24.20
8501-10	34.30	26.40

### VENTILATING HOLE PLUGS

Snap-fit for 1" hole.....	8820-1	\$85.00	\$66.00
Eyelet-type for 1 1/8" hole.....	8820-2	24.45	18.80
Eyelet-type for 3/4" hole.....	8820-3	28.65	22.05

Bulk Part No.	100 to 999	1M and up
8820-1	\$85.00	\$66.00
8820-2	24.45	18.80
8820-3	28.65	22.05

## SNAP-IN TRIMOUNTS



Dimensions			For Hole
A	B	C	
1 1/4"	1 3/8"	1 1/2"	1/4"
1 1/2"	1 5/8"	1 3/4"	3/8"
1 3/4"	1 7/8"	1 7/8"	1/2"

8462-99	125
8464-99	100
8465-99	85

Bulk Part No.	1000 to 9999	10M and up
8460-2	\$4.60	\$3.50
8460-4	5.45	4.20
8460-5	7.15	5.50

## GROMMETS, CABINET FEET AND CHASSIS MOUNTS

Dimensions, Inches				
A	B	C	D	E
1 1/4"	1 1/8"	1 1/4"	1 1/4"	1/4"
1 1/2"	1 3/8"	1 3/4"	1 3/4"	3/8"
1 3/4"	1 5/8"	1 7/8"	1 7/8"	1/2"
1 7/8"	1 7/8"	1 7/8"	1 7/8"	3/4"
2"	1 7/8"	1 7/8"	1 7/8"	1"

8341-99	85
8342-99	85
8343-99	65
8344-99	55
8345-99	85

Bulk Part No.	500 to 9999	10M and up
8340-1	\$ 6.55	\$ 5.05
8340-2	7.20	5.55
8340-3	9.00	6.95
8340-4	10.20	7.85
8340-5	16.40	12.60

### CORD STRAIN RELIEFS

For POSJ Wire.....	8340-9	26.20	20.15
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### RUBBER FEET

Screw-Type Diameter	Height
3/8"	3/8"
1/2"	1/2"
5/8"	5/8"

8351-99	55*
8352-99	80*
8353-99	30*

(\* Wood screws included.)

8350-1†	6.40	4.95
8350-2†	7.05	5.45
8350-3†	13.95	10.75

(† No screws included.)

TACK FEET:		
3/8" diameter.....	8355-99	55
1/2" diameter.....	8356-99	50

8350-5	11.15	8.60
8350-15	11.50	8.85

### CHASSIS MOUNTS

Dimensions, inches			
A	B	C	D
3/4"	1 1/8"	1/4"	3/8"
1"	1 1/4"	1/4"	3/8"

2742-99	25
2744-99	20

2740-2	20.95	16.10
2740-4	26.20	20.15

## CABLE CLAMPS

Steel, cadmium plated

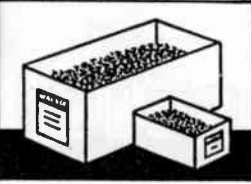
For Cables	Mounting Hole Size
1/4" to 3/8" diameter.....	# 6
3/8" to 1/2" diameter.....	# 8
1/2" to 3/4" diameter.....	# 8

8381-99	125
8382-99	100
8383-99	75

Bulk Part No.	1000 to 9999	10M and up
8380-1	\$4.40	\$3.40
8380-2	4.95	3.80
8380-3	5.90	4.55



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## SPRINGS

THE "99 LINE"

BULK PACK

Description

99c Net, Ea. Pkg.

Part No.

Quantity per Package

Bulk Part No.

Net Prices, per Thousand

### DIAL DRIVE SPRINGS, Steel, Cadmium-Plated

O/L	Diameter	Wire Size	Part No.	Quantity per Package	Bulk Part No.	250 to 4999	5M and up
1/2"	3/8"	.016"	3410-1	50	3410-1	\$11.75	\$ 8.95
5/8"	3/8"	.018"	3410-2	50	3410-2	11.75	8.95
3/4"	3/8"	.020"	3410-3	50	3410-3	12.00	9.20
3/4"	1/2"	.016"	3410-4	50	3410-4	12.00	9.20
3/4"	1/2"	.020"	3410-5	50	3410-5	12.25	9.35
1"	1/2"	.020"	3400-1	50	3400-1	13.75	10.55
1 1/4"	1/2"	.022"	3400-2	50	3400-2	15.15	11.65
Assorted			3400-99	50			

### PHONO PANEL MOUNTING SPRINGS, Spring Steel, Cadmium-Plated

A	B	C	Wire Thickness	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
1"	3/4"	7/8"	.075"	3885-1	50	3885-1	11.15 8.50
1 1/8"	3/4"	1"	.062"	3885-2	50	3885-2	11.75 9.00
3/4"	3/4"	3/4"	.047"	3885-3	50	3885-3	11.00 8.30

### KNOB SPRINGS

Style 1	3450-1	10.65	8.20
Style 2	3450-2	10.00	7.70
Style 5	3450-5	11.00	8.45
Style 6	3450-6	5.30	4.10
Style 7	3450-7	4.30	3.30
Style 8	3450-8	3.70	2.85
Style 9	3450-9	3.90	3.00



## TERMINAL LUGS

### SOLDER TYPE

Style	Available for Screw Numbers (Specify)	Part No.	Quantity per Package	Bulk Part No.	1000 to 9999	10M and up
1	#6, #8, #10	3281-99	125	3280-1	\$4.95	\$3.80
2	#6, #8	3282-99	140	3280-2	4.15	3.20
3	#6, #8	3283-99	115	3280-3	5.10	3.90
4	#6, #8, #10	3284-99	100	3280-4	5.40	4.15
5	#6, #8	3285-99	100	3280-5	7.10	5.45
6	#6, #8, #10	3286-99	250	3280-6	2.25	1.75
7	#10	3287X-99	140	3280-7X	4.20	3.25
8	#10	3287Y-99	115	3280-7Y	5.10	3.90

### SCREW TYPE

10 with #8-32 x 3/8" Screw	3288-8-1	100 to 999	1M and up	\$40.05	\$30.80
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### SOLDERLESS TYPE

Style	Fits Screw #	Fits Wire Gauge #	Part No.	Quantity per Package	Bulk Part No.	250 to 4999	5M and up
9	fits both #8 and #10		3287Z-99	85	3280-7Z	\$16.15	\$12.40
11	6	16 to 20			3288-1-6	18.60	14.30
11	8	16 to 20			3288-1-8	18.60	14.30
11	10	16 to 20			3288-1-10	18.60	14.30

### EYELET TYPE

Style 12	3288-2-1	1000 to 9999	10M and up	\$2.85	\$2.20
Style 13	3288-2-2	1000 to 9999	10M and up	4.00	3.10
Style 14	3288-2-3	1000 to 9999	10M and up	3.15	2.40
Style 15	3288-2-4	1000 to 9999	10M and up	4.00	3.10
Style 16	3288-2-5	1000 to 9999	10M and up	7.45	5.70



## PLUGS AND JACKS

### MINIATURE PLUGS AND JACKS, Not Assembled

2-Conductor Plug (type PL-291)	2590 BU	100 to 999	1M and up	\$254.35	\$195.65
2-Conductor Jack (type JK-48)	2591 BU	382.15			293.95

### PHONO PLUGS AND JACKS

Shielded, Single-Conductor Plug	2580-1	39.50	29.75
Shielded, Single-Conductor Jack	2580-6	62.00	47.50

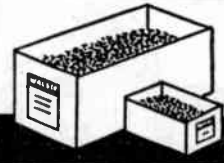


# WALSCO ELECTRONIC HARDWARE

The 99 Line

BULK PACK

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## MACHINE SCREWS

Description	THE "99 LINE"		BULK PACK	
	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
<b>ROUND HEAD, Steel, Cadmium-Plated</b>				
99c Net, Ea. Pkg.				
<b>Sizes</b>				
Assorted	3560-99	200		1000 to 9999 10M and up
# 2-56 x 1/8"			3561-2-1A	\$2.05 \$1.60
# 2-56 x 3/8"			3561-2-3	2.15 1.65
# 2-56 x 1/2"			3561-2-4	2.25 1.70
# 4-40 x 1/4"			3561-4-2	2.25 1.75
# 4-40 x 3/8"			3561-4-3	2.35 1.85
# 4-40 x 1/2"			3561-4-4	2.50 1.95
# 4-40 x 1"			3561-4-8	3.25 2.50
# 6-32 x 1/4"	3100-99	225	3561-6-2	2.50 1.95
# 6-32 x 3/8"	3110-99	225	3561-6-3	2.75 2.10
# 6-32 x 1/2"	3120-99	200	3561-6-4	2.90 2.25
# 6-32 x 3/4"	3130-99	175	3561-6-6	3.40 2.60
# 6-32 x 1"	3132-99	150	3561-6-8	3.85 2.95
# 8-32 x 1/4"	3135-99	200	3561-8-2	3.25 2.50
# 8-32 x 3/8"	3140-99	175	3561-8-3	3.45 2.65
# 8-32 x 1/2"	3150-99	160	3561-8-4	3.75 2.85
# 8-32 x 3/4"	3160-99	140	3561-8-6	4.25 3.30
# 8-32 x 1"	3162-99	125	3561-8-8	4.90 3.80
# 10-32 x 1/2"	3165-99	140	3561-10-4	4.35 3.35
# 10-32 x 3/4"	3167-99	115	3561-10-6	5.15 3.95
# 10-32 x 1"	3169-99	100	3561-10-8	5.85 4.50

### BINDING HEAD, Brass

# 6-32 x 1/4"	3565-6-2	4.25	3.25
# 6-32 x 3/8"	3565-6-3	4.85	3.75
# 6-32 x 1/2"	3565-6-4	5.50	4.25
# 8-32 x 1/4"	3565-8-2	6.10	4.70
# 8-32 x 3/8"	3565-8-3	6.90	5.35

## SHEET METAL SCREWS

### HEX HEAD, Slotted, Type "B" — Blunt Point

Description	HEX HEAD, Slotted, Type "B" — Blunt Point		BULK PACK	
	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
<b>Sizes</b>				
Assorted	3470-99	125		1000 to 9999 10M and up
# 6 x 1/4"	2910-99	150	3471-6-2	\$3.45 \$2.65
# 6 x 3/8"	2911-99	150	3471-6-3	3.65 2.80
# 6 x 1/2"	2912-99	150	3471-6-4	3.80 2.95
# 6 x 3/4"	2914-99	125	3471-6-6	4.30 3.30
# 6 x 1"	2916-99	125	3471-6-8	4.70 3.60
# 8 x 1/4"	2919-99	125	3471-8-2	4.30 3.30
# 8 x 3/8"	2920-99	125	3471-8-3	4.25 3.30
# 8 x 1/2"	2922-99	125	3471-8-4	4.55 3.50
# 8 x 3/4"	2924-99	100	3471-8-6	5.25 4.05
# 8 x 1"	2926-99	100	3471-8-8	6.00 4.60
# 10 x 3/8"	2930-99	100	3471-10-3	5.25 4.05
# 10 x 1/2"	2932-99	100	3471-10-4	5.50 4.25
# 10 x 3/4"	2934-99	100	3471-10-6	6.20 4.75

### BINDING HEAD, Type "A" — Pointed

# 6 x 1/4"	3475-6-2	3.75	2.90
# 6 x 3/8"	3475-6-3	4.05	3.10
# 6 x 1/2"	3475-6-4	4.25	3.25
# 8 x 3/8"	3475-8-3	4.70	3.65
# 8 x 1/2"	3475-8-4	5.00	3.85
# 8 x 3/4"	3475-8-6	5.80	4.45



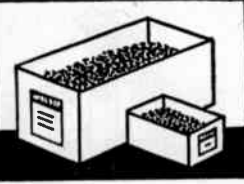


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The 99 Line

**BULK PACK**

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## SET SCREWS

Steel, hardened

THE "99 LINE"  
99c Net, Ea. Pkg.

**BULK PACK**

Description Part No. Quantity per Package Bulk Part No. Net Prices, per Thousand

### HEADLESS TYPE, Slotted, Cadmium-Plated

Assorted	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
	8480-99	55		500 to 999 10M and up
# 6-32 x 1/8"			8481-6-1	\$11.55 \$8.85
# 6-32 x 1/4"			8481-6-1A	9.95 7.65
# 6-32 x 3/8"			8481-6-2	10.00 7.70
# 8-32 x 1/8"			8481-8-1	11.55 8.85
# 8-32 x 1/4"			8481-8-1A	9.95 7.65
# 8-32 x 3/8"	8220-99	55	8481-8-2	10.00 7.70
# 10-32 x 1/4"			8481-10-1A	10.00 7.70
# 10-32 x 3/8"			8481-10-2	10.20 7.85

### HEX — ALLEN-HEAD

Assorted	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
				100 to 999 1M and up
# 4-40 x 1/8"			8482-4-1	\$53.95 \$41.50
# 5-40 x 1/8"			8482-5-1	54.60 42.00
# 6-32 x 1/8"			8482-6-1	55.25 42.50
# 6-32 x 1/4"			8482-6-1A	55.90 43.00
# 6-32 x 3/8"			8482-6-2	55.90 43.00
# 8-32 x 1/8"			8482-8-1	55.90 43.00
# 8-32 x 1/4"			8482-8-1A	56.55 43.50
# 8-32 x 3/8"			8482-8-2	57.20 44.00
# 10-32 x 1/4"			8482-10-1A	57.20 44.00
# 10-32 x 3/8"			8482-10-2	57.85 44.50
1/4-20 x 1/4"			8482-1/4-2	59.15 45.50

## MISC. SCREWS

### WOOD SCREWS

Size	Head	Finish	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
# 2 x 1/4"	Oval Hd.	Statuary Bronze			8550-2-2	\$3.90 \$3.00
# 2 x 3/8"	Oval Hd.	Statuary Bronze			8550-2-8	4.10 3.15
# 2 x 1/2"	Round Hd.	Statuary Bronze			8550-2-4	4.25 3.25
# 3 x 3/8"	Round Hd.	Blued			8550-8-8	4.10 3.15
# 6 x 1/2"	Round Hd.	Blued			8550-6-4	4.60 3.55
# 6 x 3/4"	Flat Hd.	Cadmium-Plated			8550-6-7	5.00 3.85
# 8 x 3/4"	Round Hd.	Blued			8550-8-5	5.35 4.15

### ORNAMENTAL HEAD SCREWS, Steel, Statuary Bronze Finish

# 6-32 x 3/8"	2951-99	125	2951-6-6	3.80	2.90
# 6-32 x 1"	2952-99	125	2951-6-8	4.45	3.45
# 8-32 x 1 1/4"	2953-99	80	2951-8-10	6.65	5.10

### RACK SCREWS, Oval Head, Steel, Nickel-Plated

# 6-32 x 5/8"	8543-99	175	8541-6-5	3.20	2.45
# 8-32 x 3/4"	8541-99	150	8541-8-5	4.00	3.05
# 10-32 x 3/4"	8542-99	100	8541-10-8	5.15	3.95
# 12-24 x 3/4"			8541-12-5	6.20	4.75

## MISC. FASTENERS

### SPADE BOLTS, Steel, Cadmium-Plated

Dimensions	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
# 6-32 x 5/8" O/L	8271-99	100	8270-1	\$6.05 \$4.65
# 6-32 x 3/4" O/L	8272-99	100	8270-2	6.10 4.70
1/4"-20 x 7/8" O/L			8270-3	31.20 24.00
1/4"-20 x 1 1/4" O/L			8270-4	33.80 26.00

### HAIR-PIN COTTERS

Dimensions	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
A 3/8" B 1/4" C .026"			2650-1	2.90 2.20
3/8" 1/4" .026"			2650-2	2.90 2.20
3/8" 1/4" .082"			2650-3	2.90 2.20

### THREADED ROD, Steel

# 6-32; 8" long	2640-1	\$45.25	\$34.80
# 8-32; 8" long	2640-2	47.60	36.60

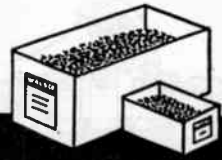


# WALSCO ELECTRONIC HARDWARE

The 99 Line

BULK PACK

IN PERMANENT *Transparent* PLASTIC STORAGE BOXES with SLIDING TOPS • PROMPT DELIVERY FOR INDUSTRIAL AND OTHER QUANTITY USERS



## HEX NUTS

Description			THE "99 LINE"		BULK PACK	
Thread Size	Width Across Flats	Thickness	Part No.	99c Net, Ea. Pkg. Quantity per Package	Bulk Part No.	Net Prices, per Thousand 1000 to 9999 10M and up
<b>SMALL PATTERN, Steel, Cadmium-Plated</b>						
Assorted			8520-99	175		
2-56	3/16"	1/16"			8521-2	\$3.70 \$2.50
4-40	1/8"	1/16"	8175-99	200	8521-4	3.70 2.50
6-32	3/16"	1/8"	8180-99	200	8521-6	3.15 2.35
8-32	1/4"	3/16"	8100-99	200	8521-8	3.50 2.60
10-32	5/16"	1/4"	8195-99	175	8521-10	3.75 2.90
<b>STANDARD PATTERN, Steel, Cadmium-Plated</b>						
6-32	3/16"	7/16"			8522-6	3.35 2.60
8-32	1/4"	7/16"			8522-8	3.75 2.90
10-32	5/16"	7/16"			8522-10	4.10 3.15
<b>BRASS NUTS, Nickel-Plated</b>						
4-36	1/4"	3/16"			8523-4X†	3.75 2.80
4-40	1/4"	3/16"			8523-4†	3.75 2.80
6-32	3/16"	1/8"	8180-B-99*	150	8523-6†	3.75 2.80
8-32	1/4"	1/8"	8190-B-99*	125	8523-8†	6.25 4.75
10-32	5/16"	1/8"	8195-B-99*	100	8523-10†	6.90 5.25

(\*Nickel-Plated)

(†Brass, Add 10% for Nickel Plating)

## MOUNTING NUTS

Thread Size	Width Across Flats	Thickness	1000 to 9999 10M and up			
<b>VOLUME CONTROL HEX NUTS, Steel, Cadmium-Plated</b>						
3/8-32	1/2"	3/8"	8581-99	85	8580-1	\$ 6.65 \$ 5.10
<b>VOLUME CONTROL HEX NUTS, Brass</b>						
3/8-32	1/2"	3/8"			8580-1B	14.70 11.30
<b>TOGGLE SWITCH HEX NUTS, Steel, Cadmium-Plated</b>						
1/2-32	1/2"	1/2"	8582-99	50	8580-2	12.40 9.55
<b>TOGGLE SWITCH RING NUTS, Brass, Nickel-Plated</b>						
1/2-32	1/2"	1/2"	8583-99	50	8580-3	12.10 9.30

## SPECIAL NUTS

<b>KNURLED THUMB NUTS, Brass</b>						
# 6-32					2971-6	10.70 \$ 8.20
# 8-32					2971-8	10.70 8.20
# 10-32					2971-10	22.45 17.30
<b>WING NUTS, Zamack Metal, Nickel-Plated</b>						
# 6-32					2976-6	7.90 6.10
# 8-32					2976-8	12.45 9.60
# 10-32					2976-10	16.05 12.35
<b>ACORN NUTS, PAL TYPE, Steel, Nickel-Plated</b>						
# 6-32					2961-6	10.65 8.20
# 8-32					2961-8	12.25 9.40
# 10-32					2961-10	15.25 11.70
<b>SPEED NUTS, Tempered Steel, Parkerized</b>						
# 6-32					2981-6	3.55 2.70
# 8-32					2981-8	4.95 3.80
# 10-24					2981-10	6.40 4.90
1/4-20					2981-1/4	9.05 7.00

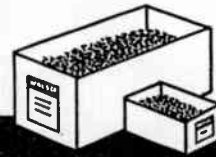


# WALSCO ELECTRONIC HARDWARE

The 99 Line

BULK PACK

IN PERMANENT TRANSPARENT PLASTIC STORAGE BOXES WITH SLIDING TOPS • PROMPT DELIVERY FOR INDUSTRIAL AND OTHER QUANTITY USERS



## INSULATING WASHERS

Phenolic Fibre



Description				THE "99 LINE"		BULK PACK	
				99c Net, Ea. Pkg.			
Fits Screw No.	Dimensions A	Dimensions B	Dimensions C	Part No.	Quantity per Package	Bulk Part No.	Net Prices, per Thousand
						1000 to 9999	10M and up
<b>EXTRUDED TYPE</b>							
6	1/8"	3/8"	.136"	8431-E-99	125	3432-6	\$4.70 \$3.60
8	3/16"	1/2"	.165"	3432-E-99	125	3432-8	4.70 3.60
10	1/4"	.308"	.195"	3438-E-99	100	3432-10	5.20 4.00
1/4"	1/2"	1 1/8"	.255"	3434-E-99	100	3432-1/4	5.55 4.25
3/8"	5/8"	1 1/2"	.380"	3435-E-99	85	3432-3/8	6.40 4.95
<b>FLAT TYPE</b>							
6	O.D. 1/8"	I.D. .136"	Thickness 3/32"	8431-F-99	250	3431-6	2.30 1.80
8	3/16"	.165"	3/32"	3432-F-99	250	3431-8	2.45 1.90
10	1/4"	.195"	3/32"	3438-F-99	250	3431-10	2.50 1.95
1/4"	1/2"	.255"	3/32"	3434-F-99	225	3431-1/4	2.65 2.05
3/8"	5/8"	.380"	3/32"	3435-F-99	175	3431-3/8	3.45 2.65

## MISC. WASHERS

### FLAT METAL WASHERS, Steel, Cadmium-Plated

Fits Screw No.	O.D.	Thickness			1000 to 9999	10M and up	
4	3/8"	3/32"		8511-4	\$ .90	\$ .70	
6	7/8"	3/32"		8512-99	500	8511-6	.95 .75
8	7/8"	3/32"		8513-99	500	8511-8	.95 .75
10	1 1/8"	3/32"		8514-99	800	8511-10	1.40 1.05
1/4"	1 1/2"	3/32"		8515-99	300	8511-1/4	1.65 1.25

### LOCK WASHERS, Int. Teeth, Steel, Cadmium-Plated

Fits Screw No.						
4				8591-4	2.05	1.60
6				8591-6	2.05	1.60
8				8591-8	2.20	1.70
10				8591-10	2.20	1.70
1/4"				8591-1/4	2.85	2.20
3/8"				8591-3/8	4.95	3.80

### SPRING (FRICTION) WASHERS

I.D.	O.D.	Thickness				
1/4"	1/8"	.010"		3425-1	7.00	5.50
3/8"	3/8"	.008"		3425-2	7.75	6.00
1/2"	1/2"	.012"		3425-3	8.75	6.75

### CUP WASHERS, Steel, Nickel-Plated

Fits Screw No.							
6				8544-99	275	8542-6	1.95 1.50
8				8545-99	250	8542-8	2.40 1.85
10				8546-99	200	8542-10	3.00 2.30
12						8542-12	4.30 3.30

### "C" WASHERS, Soft Steel, Cadmium-Plated

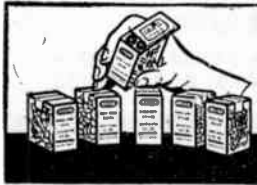
Fits Shaft	A	B	C	Thickness		
1/4"	.260	1/16"	1/8"	1/32"	8420-2	6.25 4.80
1/8"	3/8"	1/8"	1/8"	3/32"	8420-8	5.40 4.15

### KNOB FELT WASHERS, Brawn

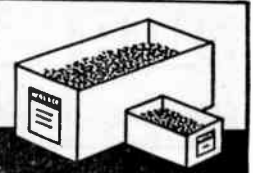
O.D.	I.D.	Thickness					
3/4"	1/4"	3/32"		8490-99	250	8490-1	1.75 1.10

## PHONE TIPS

1/8" O/L	2725-99	60	2725-1	250 to 4999	5M and up	\$9.05 \$6.95
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# WALSCO ELECTRONIC HARDWARE



The **99** Line

**BULK PACK**

IN PERMANENT *Transparent* PLASTIC STORAGE BOXES with SLIDING TOPS • PROMPT DELIVERY FOR INDUSTRIAL AND OTHER QUANTITY USERS

## MISC. CLIPS

### THE "99 LINE"

Description			99c Net, Ea. Pkg.	BULK PACK	
Length	Width	Mtg. Hole Size	Part No.	Quantity per Package	Bulk Part No. Net Prices, per Thousand
<b>SPRING CLIPS, Spring Brass, Nickel-Plated</b>					
1 1/8"	3/8"	4 and 5	2781-99	100	2730-1 ..... \$5.65 ..... \$4.35
1 1/8"	1/2"	6	2782-99	75	2730-2 ..... 7.65 ..... 5.90
<b>GRID CAPS</b>					
For Glass Tubes					
For Metal and "GT" Tubes					
For High Voltage TV Rectifier Tube					
<b>FUSE CLIPS</b>					
For 1/4" Fuses					
For 3/8" Fuses					
2800-1 ..... 250 to 4999 5M and up \$19.50 ..... \$15.00					
2600-4 ..... 6.30 ..... 4.85					
2600-6 ..... 29.90 ..... 23.00					
2720-1 ..... 8.00 ..... 5.75					
2720-2 ..... 14.00 ..... 10.80					

## FUSE INSULATORS

1 1/8" long, 1/4" I.D.	2690-1	1000 to 9999 10M and up	\$3.35	\$2.55
5/8" long, 1/4" I.D.	2690-2		2.95	2.30

## ANGLE BRACKETS

Material	Dimensions				
	A	B	C		
Brass, cadmium-plated	3/8"	1/4"	1/4"	2610-1	500 to 9999 10M and up \$6.85 ..... \$5.25
Steel, cadmium-plated	1/4"	5/8"	1/4"	2610-2	7.20 ..... 5.55
Brass (one hole tapped 6-32)	3/8"	1/2"	1/4"	2610-5	9.95 ..... 7.65

## INSULATING TUBING

### FLEXITUBE

Extruded vinyl tubing; dielectric strength: 15,000 v.  
Clear will be supplied unless order specifies color. Black, Green or Red available subject to stock on hand.

Part No.	Size, B & S Gauge No.	Approx. I.D. Inches	MM.	100 to 1999* ft.	2M* ft. and up
R 600	18	.042	1	\$15.00/M ft.	\$8.82/M ft.
R 601	16	.053	1.4	15.00/M ft.	8.82/M ft.
R 602	14	.066	1.6	15.60/M ft.	10.37/M ft.
R 603	12	.085	2	16.00/M ft.	11.91/M ft.
R 604	10	.106	2.7	18.00/M ft.	12.20/M ft.
R 605	8	.133	3.5	22.20/M ft.	13.30/M ft.
R 606	6	.166	4	26.00/M ft.	16.00/M ft.
R 607	4	.208	5	32.00/M ft.	23.00/M ft.
R 608	2	.268	6.5	45.00/M ft.	30.00/M ft.
R 609	....	.380		47.50/M ft.	37.90/M ft.

Flat to fit 300-ohm twin-lead. Clear color only.  
75 ft. hanks.

### RAYOFLEX

Lacquered-rayon tubing, radio grade. Meets A.S.T.M. Specifications B-2.  
Available in Black, Blue, Red, and Yellow. Please specify color.

Part No.	Size, B & S Gauge No.	Approx. I.D. Inches	MM.	100 to 1999* ft.	2M* ft. and up
(Following sizes supplied in continuous lengths.)					
R 830	18	.042	1	\$ 39.50/M ft.	\$ 30.40/M ft.
R 831	15	.059	1.5	43.70/M ft.	33.60/M ft.
R 832	12	.085	2	51.90/M ft.	39.90/M ft.
R 833	9	.118	3	60.00/M ft.	46.20/M ft.
R 834	6	.166	4	67.80/M ft.	52.20/M ft.
(Following sizes supplied in 30-inch lengths.)					
R 835	2	1/4"	6.5	106.80/M ft.	82.20/M ft.
R 836	0	3/8"	8.5	143.20/M ft.	110.20/M ft.
R 837	00	1/2"	9.5	171.80/M ft.	132.20/M ft.
R 838	0000	3/4"	18	236.80/M ft.	182.20/M ft.

\*Various sizes and colors, but not less than 100 ft. of any one size or color, may be combined in one order to take advantage of quantity discounts. Sizes other than listed above can be supplied. Prices quoted on request.



### DIAL CABLE AND CORDS



Part No.	Description	*3000 to 14,999 ft.	15M ft. and up
<b>METAL CABLES</b>			
R 30	Phosphor bronze cable, twisted, 42-strand, .032" diameter.....	\$20.00/M ft.	\$15.40/M ft.
R 31	Bronze cable, braided, 16-strand, .038" diameter.....	10.00/M ft.	8.00/M ft.
R 32	Bronze cable, braided, 8-strand, .026" diameter.....	11.00/M ft.	8.50/M ft.
<b>NYLON CORDS</b>			
Constructed with impregnated fiberglass core, and black nylon braid. Construction combines minimum stretch, high coefficient of friction, and maximum resistance to abrasion.			
R 35	"Special-Thin" Cord, approximately .026" diameter.....	9.00/M ft.	6.05/M ft.
R 39	Standard Cord, approximately .032" diameter.....	9.40/M ft.	6.20/M ft.
R 34	Medium Cord, approximately .040" diameter.....	10.80/M ft.	8.00/M ft.
R 33	Heavy-Duty Cord, approximately .060" diameter.....	17.50/M ft.	13.50/M ft.



### GRILLE CLOTH, SCREENING AND METAL GRILLE



Part No.	Description	5 to 49 yd.	50 yd. and up
<b>GRILLE CLOTH</b>			
R 362 BU	Standard Grille Cloth, 48-54" wide. (Available in Light, Walnut, and Mahogany).....	\$3.30/yd.	\$2.75/yd.
R 365 BU	Wrinkle- and Stain-Resistant, Highest Quality Material. Approx. 44" wide. (Available in 6 Standard Patterns).....	6.90/yd.	5.30/yd.
<b>FLOCKED GRILLE SCREENING</b>			
	Color	Width, inches	
R 374-1 BU	Brown	11	10 to 99 ft. \$ .45/lin. ft. 100 ft. and up \$ .35/lin. ft.
R 374-3 BU	Light Ivory	11	.45/lin. ft. .35/lin. ft.
R 376-1 BU	Brown	18	.65/lin. ft. .50/lin. ft.
R 376-3 BU	Light Ivory	18	.65/lin. ft. .50/lin. ft.
R 378-1 BU	Brown	36	1.30/lin. ft. 1.00/lin. ft.
R 378-3 BU	Light Ivory	36	1.30/lin. ft. 1.00/lin. ft.

Note: Grille Cloth and Flocked Grille Screening also available in "cut-to-order" sizes.....Prices Quoted on Request

### ORNAMENTAL METAL GRILLE

R 380 Available in a variety of finishes and in any size up to 48" width.....Prices Quoted on Request



### CHEMICALS AND FINISHES



Part No.	Description	1-gal. Cans	5-gal. Cans
<b>INDUSTRIAL ADHESIVES</b>			
R 21	WALSCO Fabric Cement .....	\$7.50/gal.	\$5.80/gal.
R 40	WALSCO Plastic Cement .....	7.50/gal.	5.80/gal.
R 50	WALSCO Radio Cement .....	5.50/gal.	4.30/gal.
R 110	WALSCO Rubber Cement .....	7.50/gal.	5.80/gal.
R 150	WALSCO Polystyrene Cement .....	5.90/gal.	4.50/gal.
<b>SOLVENTS &amp; THINNERS</b>			
R 1	For Lacquer No. 120.....	4.00/gal.	3.10/gal.
R 2	For Cement No. R 110 and Wrinkle Varnish No. R 145.....	1.25/gal.	.95/gal.
R 60	For Cements Nos. R 20, R 40, and R 50.....	3.50/gal.	2.70/gal.
R 160	For Cement No. R 150.....	2.50/gal.	1.95/gal.
R 214	Carbon-Tetrachloride .....	3.75/gal.	3.00/gal.
<b>SPECIAL CHEMICALS</b>			
R 22	WALSCOLUB-B .....	1-lb. Cans \$1.50/lb.	5-lb. Cans \$1.20/lb.
R 23A	Lubriplate .....	1.20/lb.	0.80/lb.
R 80	Contactene .....	1-gal. Cans \$5.00/gal.	5-gal. Cans \$3.90/gal.
R 100	No-Ox .....	26.00/gal.	20.00/gal.
R 190	Insulating Varnish .....	6.50/gal.	5.10/gal.
<b>POLISHES</b>			
R 410	WALSCO Super Polish.....	3.50/gal.	2.70/gal.
R 414	Scratch-Removing Polish, Dark.....	2.50/gal.	1.95/gal.
R 430	Scratch-Removing Polish, Light.....	2.50/gal.	1.95/gal.
<b>LACQUERS AND FINISHES</b>			
R 120	Crystallizing Lacquer: Black, Green, Grey, Clear, Brown.....	10.00/gal.	8.15/gal.
R 145	Wrinkle Varnish — Air-Dry: Grey or Black .....	9.90/gal.	8.05/gal.

# ICA INSULINE RADIO PRODUCTS ICA

## ICA Bakelite Double Phone Plug



No. Dealer Cost  
 24B—Black ..... \$ .30  
 Display Cord of 24 above  
 D-70024B ..... 7.20  
 24R—Red ..... 30  
 Display Cord of 24 above  
 D-70024R ..... 7.20  
 34B—Black barrel only ..... 12  
 34R—Red barrel only ..... 12  
 34P—Plug only ..... 24

## ICA Midget Phone Plug

Overall length—  
 2 1/4". Diameter  
 of barrel 3/8".



No. Dealer Cost  
 29B—Black ..... \$ .30  
 Display Card of 24 above  
 D-70029B ..... 7.20  
 29R—Red ..... 30  
 Display Card of 24 above  
 D-70029R ..... 7.20  
 29P—Plug only ..... 24  
 39B—Black barrel only ..... 12  
 39R—Red barrel only ..... 12

## ICA Stubby Shielded Phone Plug

Barrel Measures  
 1 1/4" diameter x  
 1" long.  
 No. 27

Dir. Cost \$.48  
 No. 37—Barrel only Dir. Cost .27

## ICA Midget Shielded Phone Plug

Diameter of Bar-  
 rel 3/8". Overall  
 size of Plug 2 1/4"

No. 30 ..... Dir. Cost \$.42  
 No. 40—Barrel only Dir. Cost .24

## ICA 3-Wire Microphone Plug



Has solder connections for cable or  
 microphone use. Barrel molded of  
 bakelite; brass parts, nickel plated.  
 No. 1901 ..... Dealer Cost \$.59

## ICA Shielded Double Phone Plug

Nickel Barrel  
 Brass Shell  
 Nickel Plated

Supplied with fibre insulating tube.  
 No. 25 ..... Dir. Cost \$.54  
 No. 35—Barrel only Dir. Cost .30

## ICA Shielded 3-Wire Microphone Plug



Shielded Nickel Barrel  
 No. 1900 ..... Dealer Cost \$.87

## ICA Shielded 3-Way Portable Microphone Jack

For all types of microphones. Stur-  
 dily constructed of brass parts with  
 phosphor bronze springs. Nickel  
 plated and thoroughly insulated.  
 No. 1904 ..... Dealer Cost \$.90

## ICA Bakelite Portable Jacks

Single Open  
 Circuit  
 No. 1911—Overall Size 1 1/2"  
 Diameter 3/8" ..... Dir. Cost \$.42  
 Display Card of 16 above  
 No. D-71911 ..... Dir. Cost 6.72  
 No. 1903—Portable Jack, black  
 Bakelite barrel ..... Dir. Cost \$.66

## ICA Shielded Portable Jack

Single Open  
 Circuit  
 No. 1913—2 1/8" Long, 1/8"  
 Diameter ..... Dealer Cost \$.75

## Phone Plug Adapter



Soldering or wiring  
 not necessary.  
 No. 33  
 Dealer Cost \$.27

## ICA De Luxe Phone Jacks

### New Design

### Greater Efficiency



New design. Ten-  
 sion fatigue min-  
 imized. — Spring  
 members made of  
 phosphor bronze. Hooked type  
 soldering lugs—Cannot turn or  
 short. For standard 3/8" plug.

No. Dealer Cost  
 1920—Single Open Circuit ..... \$.45  
 1921—Single Closed Circuit ..... 51  
 1922—Three-Way Microphone  
 Jack ..... .66

## ICA Phone Jacks



Smaller type pre-  
 cision made jacks  
 for limited space.  
 Complete with nut  
 and metal washer.

No. Dealer Cost  
 1870—Single open circuit ..... \$.30  
 1871—Single closed circuit ..... 33  
 1872—3-way mike jack ..... 36

## ICA Panel Mounting Jacks



Small  
 and  
 Compact

No. Dealer Cost  
 325—Single Open Circuit ..... \$.30  
 1905—3-Way Microphone Jack ..... 66

## ICA Insulated Tip Jacks



With receptacle for  
 standard phone tips.  
 No. Dir. Cost  
 889B—Black ..... \$.09  
 889R—Red ..... .09

## Insulated Banana Jacks

With receptacle for banana plugs.  
 No. 888B—Black ..... Dir. Cost \$.09  
 No. 888R—Red ..... Dir. Cost .09

## ICA Bakelite Insulated Tip Jacks

Moulded of Low-Loss  
 Bakelite  
 No. Dealer Cost  
 1889—Black ..... \$.12  
 Display Card of 40 above  
 D-71889 ..... 4.80  
 1890—Red ..... 12  
 Display Card of 40 above  
 D-71890 ..... 4.80

Bakelite Banana Type Jacks  
 No. 1891—Black ..... Dir. Cost \$.12  
 Display Card of 40 above  
 No. D-71891 ..... Dir. Cost 4.80  
 No. 1892—Red ..... Dir. Cost .12  
 Display Card of 40 above  
 No. D-71892 ..... Dir. Cost 4.80

## ICA Combination Banana Plug or Phone Tip Jack

Made to take banana plug  
 or standard phone tips  
 interchangeably. Insulated  
 cap in black and red —  
 With washers and nuts.



No. 528R—Red ..... Dir. Cost \$.12  
 Display Card of 48 above  
 No. D-70528R ..... Dir. Cost 5.76  
 No. 528B—Black ..... Dir. Cost .12  
 Display Card of 48 above  
 No. D-70528B ..... Dir. Cost 5.76

## Microphone Connectors



No. 1929—For use on chassis  
 unit or in microphone.  
 Single Contact Dir. Cost \$.18  
 No. 1930—Closed circuit con-  
 nector. With spring ac-  
 tuated contact Dir. Cost .24

## Microphone Connectors



NEW Universal shielded cable sin-  
 gle contact microphone connector.  
 Newly designed non-fixed coupling  
 ring permits easy cable connection.  
 Male-female connector in one. Elim-  
 inates necessity for mating con-  
 nectors.

No. 1931 ..... Dealer Cost \$.30

## Microphone Connector



Shielded cable type. Single contact  
 male microphone connector.  
 Chrome-plated brass.  
 No. 1932 ..... Dealer Cost \$.24

## ICA Insulated Binding Posts with Jack for Banana Type Plug



Length 1 3/8" overall  
 when top is up. Extends  
 3/8" above panel when  
 top is screwed down. Fitted  
 with 8/32 screw 1/8"  
 long, and two hex nuts.  
 No. Dir. Cost  
 622—Red ..... \$.18  
 623—Black ..... 18  
 Display Card, 16 each  
 above  
 D-70622-3 Dir. Cost 5.76

## ICA All Metal Binding Post

Designed for high am-  
 perage use and where  
 low resistance connec-  
 tions are necessary on  
 test equipment, etc.  
 Nickel plated brass. Di-  
 mensions same as No.  
 617 below.



No. 620 ..... Dir. Cost \$.15

## ICA Bakelite Binding Posts

3/8" Diameter Head  
 with Brass Threaded  
 insert, Nickel Plated  
 Screw; Knurled nut.  
 No. Dir. Cost  
 617—Red ..... \$.11  
 618—Black ..... 11

## ICA Vise-Grip Binding Post



Engineered on prin-  
 ciple of a vise. Can  
 cause no damage to  
 even finest wire  
 strands. Wire hole  
 and designating sym-  
 bol always in align-  
 ment. Two styles.

No. 630 Series—Has 8/32 Male  
 Threaded Shank ..... Dir. Cost \$.30  
 No. 690 Series—Has 8/32 Female  
 Thread ..... Dir. Cost \$.30

No.	Marking	No.	Marking
630	ANT	690	ANT
631	GND	691	GND
632	A	692	A
633	G	693	G
634	+	694	+
635	—	695	—
636	Rec.	696	Rec.
637 PLAIN (No Marking)		697 PLAIN (No Marking)	

## Bakelite Binding Post Heads

Bakelite Heads  
 only with Brass  
 Threaded Insert  
 for 8/32 Screw.



No. 628—Red ..... Dir. Cost \$.09  
 No. 629—Black ..... Dir. Cost \$.09

## Insulated Midget Phone Tip Plug

Fits all standard jacks.  
 Tip is threaded. Over-  
 all length 1 3/4".



No. Dir. Cost  
 876R—Red ..... \$.09  
 876B—Black ..... .09

## ICA Midget Sharp Point Threaded Phone Tip Non-Insulated

No. 365 ..... Dir. Cost \$.09

## U. S. Army-Navy Specification Plug

Manufactured to  
 meet latest JAN  
 specification P-642.  
 Fits all standard jacks.

No. PJ-055B ..... Dealer Cost \$.75  
 Display Card of 24 above  
 No. D-70055B ..... Dealer Cost \$18.40  
 No. D-70055B ..... Dealer Cost \$14.00  
 No. PL-68—3-conductor micro-  
 phone Plug ..... Dealer Cost \$1.35  
 Display Card of 16 above  
 No. D-70068 ..... Dealer Cost \$21.60

## ICA Insulated Solderless Plug



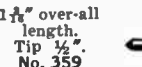
2" long — fits all standard  
 phone tip jacks.  
 No. 885B—Black ..... Dir. Cost \$.11  
 No. 885R—Red ..... Dir. Cost .11

## ICA Sr. Solderless Plugs



1 1/8" over-all  
 length.  
 No. 358  
 Dir. Cost \$.08

## ICA Jr. Solderless Plugs



1 1/8" over-all  
 length.  
 Tip 1/2".  
 No. 359  
 Dir. Cost \$.07

# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA Brass Tip Jacks

Nickel Plated  
No. 357  
Dir. Cost \$.05



### ICA Transmitting Banana Jacks No. 402

Nickel Plated Brass  
Dealer Cost \$.05



### ICA Insulated Solderless Split Banana Plugs



Set screw provided at side of barrel to fasten screw without soldering.

#### 1 1/2" Long

No. 883B—Black ..... Dir. Cost \$.12  
No. 883R—Red ..... Dir. Cost .12  
Display Card of 20 each above  
No. D-70883B-R ..... Dir. Cost \$4.80

#### 2 1/2" Long

With sleeve covering set screws.  
No. 882B—Black ..... Dir. Cost \$.24  
No. 882R—Red ..... Dir. Cost .24  
Display Card of 10 each above  
No. D-70882B-R ..... Dir. Cost \$4.80

4" Long  
With sleeve covering set screws.  
No. 881B—Black ..... Dir. Cost \$.30  
No. 881R—Red ..... Dir. Cost .30  
Display Card of 8 each above  
No. D-70881B-R ..... Dir. Cost \$4.80

### ICA Insulated Solderless Split Banana Plugs



With Solderless Wire Nut  
No. 434B—Black ..... Dir. Cost \$.15  
No. 434R—Red ..... Dir. Cost .15

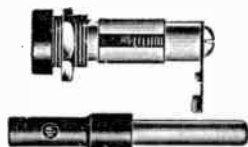
### Wire Connector with Banana Plug Receptacle

Ideal for quick  
splicing for test-  
ing point.



No. 1933 ..... Dealer Cost \$.22

### Plugs and Jacks



A new line of heavy duty transmitting plugs and jacks. Plug-in type with positive grip contacts. Equipped with heavy insulated threaded heads and handles for safe handling on high R.F. currents. Supplied with large hex nuts for panel mounting.

Handle 1,000 Volts at  
10 Amps

No.	Dealer Cost
450—Medium Plug-RED	\$.36
451—Medium Plug-BLACK	.36
452—Medium Jack-RED	.66
453—Medium Jack-BLACK	.66
454—Giant Plug-RED	.54
455—Giant Plug-BLACK	.54
456—Giant Jack-RED	.75
457—Giant Jack-BLACK	.75

### ICA Split Banana Plugs



For positive and durable spring action. Allows spring to fit into jack, cannot bend out of shape — Complete with two nuts.  
No. 403 ..... Dir. Cost \$.09

### Insulated Spade Lug

Insulated Spade Lug with banana plug receptacle on lead end.

No. 887B—Black ..... Dir. Cost \$.10  
No. 887R—Red ..... Dir. Cost .10  
10 in Standard Carton



### Beryllium Banana Plugs

Approved by the Signal Corps and other government agencies. These plugs are used in all government equipment. Made of Beryllium copper and guaranteed for its spring and durability. Threaded plug accommodates 6/32 nuts.



No. 419—Overall size 1 1/8" long. Shank length 1/4" long. Diameter of shank 1/8".

Dir. Cost  
419—Rivet type ..... \$1.2



No. 421—Overall size 1 3/8" long. Threaded shank length 1 1/8" long threaded for 6/32 nuts.

Dir. Cost  
421—Threaded shank 1 1/8" ..... \$ .18

### ICA Spade Lug



Can be used on any size screw or terminal up to size 10. Receptacle fits all I.C.A. and other make Banana Plugs.

No. 879 ..... Dealer Cost \$3.30 C  
100 in Standard Package

### ICA Insulated Needle Point Tip Plug

886B — Black  
Dir. Cost \$.11  
886R — Red  
Dir. Cost \$.11



Above with Insulating Sleeve  
No. 341B—Black ..... Dir. Cost \$.08  
No. 341R—Red ..... Dir. Cost .08

### ICA Alligator Clips

Good firm grip. Ideal for work in tight places. Overall length 2".



No. 364 ..... Dealer Cost \$.06  
Display Card of 40 above  
No. D-70364 ..... Dealer Cost 2.40

### ICA Alligator Clip with Screw Connection



Good firm bite. Convenient screw connection eliminates the necessity for soldering. Overall length 2"  
No. 376 ..... Dealer Cost \$.07

### ICA Insulated Alligator Clips



No. 884B—Black ..... Dir. Cost \$.12  
No. 884R—Red ..... Dir. Cost .12  
Display Card of 20 each above  
No. D-70884B-R ..... Dir. Cost 4.80

### ICA Insulated Alligator Clip with Phone Tip Jack



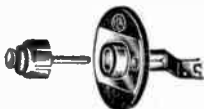
Has standard phone tip jack in insulated sleeve. Will accommodate phone tip or solderless plug tips.  
No. 525R—Red ..... Dir. Cost \$.30  
No. 525B—Black ..... Dir. Cost .30  
Display Card of 12 each above  
No. D-70525R-B ..... Dir. Cost \$7.20

### ICA Insulated Combination Jack Alligator Clip



An insulated alligator clip with a dual purpose Jack in catalin sleeve — Equipped with the new combination Jack which takes either solderless phone tip or Banana plug. Overall length—3 1/4".  
No. 520R—Red ..... Dir. Cost \$.36  
No. 520B—Black ..... Dir. Cost .36

### ICA PLUG AND JACK



Used on RCA recording units, receivers and auto sets.

No. Dealer Cost  
2383—Pin Plug ..... \$.06  
2385—Socket and Shield ..... .09

### REPLACEMENT ELEMENTS FOR ICA SOLDERING IRONS

Due to the construction of the ICA Soldering Irons, burnt out elements can be easily removed and replaced by anyone.



105-120 Volts			220 Volts		
No.	Watts	Dir. Cost	No.	Watts	Dir. Cost
1985	60	\$1.80	1990	60	\$1.80
1986	85	2.10	1991	85	2.10
1987	115	2.10	1992	115	2.10

### REPLACEMENT TIPS For ICA Soldering Irons



Available in All Sizes

Made of a special copper alloy. Electrolytically pure. For replacement in ICA Soldering Irons. Can also be used in American Beauty and irons of similar construction.

No.	Watts	Tips	Dia.	Length	Dealer Cost
1970	60	Flat	3/8"	3"	\$.36
1972	85	Point	3/8"	3 1/2"	.48
1971	115	Point	3/8"	3 1/2"	.60

### ICA SOLDERING IRONS



ICA Highest Quality Soldering Irons are "Best By Test". Each model is submitted to the most severe tests and results prove conclusively that ICA irons are equal, if not superior, to any soldering iron on the market today.

#### 60 WATT IRON

No. 1960-A—105-120 Volts ..... Dir. Cost \$3.00  
No. 1963—220 Volts ..... Dir. Cost 3.00

#### 85 WATT IRON

No. 1962-A—105-120 Volts ..... Dir. Cost \$3.90  
No. 1964—220 Volts ..... Dir. Cost 3.90

#### 115 WATT IRON

No. 1961-A—105-120 Volts ..... Dir. Cost \$4.50  
No. 1965—220 Volts ..... Dir. Cost 4.50

# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA SHEARING PUNCHES

Now! No Hammering Necessary to Punch Chassis Holes  
Shearing is accomplished with a wrench which forces shear punch into die. Made of High Grade Steel.



No.	Size of Hole	Dealer Cost
723	5/8"	\$2.55
725	3/4"	2.55
724	1"	2.85
726	1 1/8"	3.00
727	1 3/8"	3.00
728	1 1/2"	3.00
729	1 3/4"	3.00
730	1 7/8"	3.30

### ICA SQUARE HOLE SHEARING PUNCH

This new punch permits the cutting of any size odd-shape hole (square rectangular, hexagon, oblong, etc.) on any size panel or chassis. Good for Enlarging or punching TRANSFORMER Holes.



No. 790.....Dealer Cost \$12.00

### ICA IMPROVED ALL-PURPOSE CIRCLE CUTTER

Will Cut Holes from 1/2 to 8 Inches  
Cutting bar holder is 3/8" in diameter and also accommodates a centering drill or any size pilot pin. Cutting bar is 3/8" square and is arranged to hold a 1/8" high speed cutting bit.



No. 775.....Dealer Cost \$3.96

### ICA UNIVERSAL MULTI-PURPOSE CUTTING TOOL



This handy tool can be used for counter-sinking, beading, drilling or cutting holes. Equipped with 1/8" drill for holes from 1/8" diameter up to 8" diameter. Can be used either in drill press or hand brace. Also acts as a boring tool when used in a lathe.

No. 780.....Dealer Cost \$2.80

### REPLACEMENT DRILLS AND CUTTERS

Used as replacement on ICA No. 775 and No. 780 circle cutters as well as on other make cutters.



- No. 776—Replacement drill for No. 775 Circle Cutter Dealer Cost \$ .40
- No. 777—Replacement cutter for No. 775 Circle Cutter Dealer Cost .56
- No. 781—Replacement drill for No. 780 Circle Cutter Dealer Cost .40
- No. 782—Replacement cutter for No. 780 Circle Cutter Dealer Cost .59

### ICA RIVET AND EYELET PUNCH SET



A Universal Tool that can be used for either riveting or eyeletting. Holder is made of cast iron with hexagonal sides, thus permitting the tool to be placed in a vise without slipping.

No. 785—Complete with ample assortment of eyelets and rivets.

Dealer Cost \$3.00

### RIVET AND EYELET ASSORTMENT

Additional eyelets and rivets can be purchased separately.  
No. 5265—(Asstmt. of 100)....Dir. Cost \$ .48

### RIVET & EYELET SETTING TOOL



No. 786.....Dealer Cost \$ .54

### ICA "TURN-TITE" SOCKET WRENCHES

#### HOLLOW SHAFTS



Made of hardened steel, cadmium plated, with sturdy Black japanned wooden handles.

6 Inches Long			9 Inches Long		
No.	Dir. Cost		No.	Dir. Cost	
898	1/8"	\$.40	900	3/8"	\$.48
890	1/4"	.40	894	1/2"	.48
891	3/8"	.40	895	5/8"	.48
892	1/2"	.40	896	3/4"	.48
893	5/8"	.40	897	7/8"	.48
899	1"	.40	901	1 1/8"	.48
910	Set of 6		911	Set of 6	

Wrenches 2.40      Wrenches 2.88

### ICA UNBREAKABLE "TURN-TITE" SOCKET WRENCHES



7" long. Handle is of ribbed shockproof unbreakable material.

No.	Socket	Dir. Cost	No.	Socket	Dir. Cost
940	1/4"	\$.66	944	3/8"	\$.66
941	1/2"	.66	945	1/2"	.66
942	3/4"	.66	946	5/8"	.66
943	7/8"	.66	949	Set of 7 wrenches as above	4.62

### ICA UNBREAKABLE VOLUME CONTROL WRENCH



Socket is 1/4" diameter.

No. 937.....Dealer Cost \$1.25

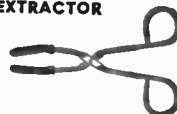
### ICA FLEXIBLE SOCKET WRENCH



Especially designed for hard-to-reach spots. Can actually be used around corners or under obstructing objects.

- No. 913—1/4" Hex .....Dealer Cost \$ .90  
Display Card of 6 above
- No. D-70913 .....Dealer Cost \$5.40
- No. 914—3/8" Hex .....Dealer Cost \$ .90  
Display Card of 6 above
- No. D-70914 .....Dealer Cost \$5.40

### TUBE EXTRACTOR



For removing all makes and sizes of tubes. Molded rubber cushion over claws offers full tube protection. Sturdy Cadmium plated steel.

No. 1001 .....Dealer Cost \$1.05  
Display Card of 3 above  
No. D-71001 .....Dealer Cost \$3.15

### ICA LOCK SOCKET WRENCH AND SCREW DRIVER SET



The all-purpose socket wrench, packed in neat, enameled steel case. Includes sturdy 6 1/2" Wood Grip Screw Driver—4" L Handle—3 1/2" Extension Adaptor, 1/4", 3/8", 1/2" and 5/8" Hex—3/8" Round Knurled Socket—1/4" and 3/8" Square Sockets.

No. 999 .....Dealer Cost \$2.10

### ICA AMBER COLORED UNBREAKABLE MIDGET SCREW DRIVER



Particularly shaped to fit into set screws of knobs. No. 1013 has convenient pocket clip.

No. 1013—3 1/4" length Dealer Cost \$ .15  
Display Card of 32 above  
No. D-71013 .....Dealer Cost \$4.80  
No. 1017—7" length .....Dealer Cost \$ .18  
Display Card of 16 above  
No. D-71017 .....Dealer Cost \$2.88

### ICA FLEXIBLE SCREW DRIVER

For the Hard to Reach Spots



Allows access to screws in hard to reach and out of the way places. Can go under objects or around corners.

No. 935 .....Dealer Cost \$1.20  
Display Card of 6 above  
No. D-70935 .....Dealer Cost \$7.20

### ICA COMPLETE NEUTRALIZING TOOL KIT



The kit consists of one of each of the following ICA tools, described herein:—Nos. 382, 1008, 987, 1015, 977, 996, 992, 985, 990, 1024, 1019, 1026, 1022, 1002, 1013, 1028, 1039, 1029, 1088, 985, 937.

No. 995—Kit, Complete with Carrying Case  
Dealer Cost \$13.20

### ICA UTILITY NEUTRALIZING AND ALIGNING TOOL KIT



A handy Service Man's Kit containing carefully selected tools suitable for varied uses. Packed in vest pocket leatherette case.

No. 997.....Dealer Cost \$1.98

### ICA NEUTRALIZING AND ALIGNING TOOL KIT

The Kit consists of twelve separate and distinct parts, some of which can be employed for several operations. These units telescope into each other, forming four separate tools when assembled.

No. 998.....Dealer Cost \$4.29  
Complete with Carrying Case





# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA DE LUXE NEUTRALIZING AND ALIGNING TOOL KIT



Complete for Every Service Need

Consists of fourteen tools, most of which telescope into one another, forming six units when assembled into the attractive black leatherette case. The complete kit in carrying case can be kept in the pocket. Tools complete with carrying case.

No. 994 ..... Dealer Cost \$4.95

### ICA NEUTRALIZING AND ALIGNMENT TOOL KIT — SIGNAL CORPS NO. TE45-A



ICA Catalog No. 993  
This versatile kit, designed for and used by the Signal Corps, is also strongly recommended for general service use. Compact, and contained in a handsome leatherette case, this kit consists of the following:

- |                                  |   |
|----------------------------------|---|
| 1—No. 985 Screw Driver           | 1—Bone Fibre No. 1015 Neutralizing Tool |
| 1—5" Screw Driver                | 2—No. 980—Hex Tools, 1/4" I.D.          |
| 1—Insulated Screw Driver         | 2—No. 981—Hex Tools, 3/8" I.D.          |
| No. 993 ..... Dealer Cost \$4.45 |   |

### ICA DIAL CABLE ADJUSTER



Handy aid to replacing slipped-off dial cable over drive drum. Permits easy manipulation in cramped places.

No. 437 ..... Dealer Cost \$ .50  
Display Card of 12 above  
No. D-70437 ..... Dealer Cost \$6.00

### ICA 4-in-1 NEUTRALIZING TOOLS.

#### SCREW DRIVER AND WRENCH

Made of Fenoline Fully Insulated



No. 1019—Complete ..... Dealer Cost \$ .56  
Display Card of 12 above  
No. D-71019 ..... Dealer Cost \$6.72

#### ICA 5-IN-1 NEUTRALIZING AND COMPENSATING TOOL

Same features as the 4-in-1 tool described above with an additional all metal screw driver.



No. 1022 ..... Dealer Cost \$ .90  
Display Card of 12 above  
No. D-71022 ..... Dealer Cost \$10.80

#### ICA BALANCING TOOL



Fits into No. 1019 Neutralizing Tool.  
No. 1026 ..... Dealer Cost \$ .33  
Display Card of 16 above  
No. D-71026 ..... Dealer Cost \$5.28

#### ICA ALL PURPOSE ALIGNING TOOL



Handle is of 3/8" Fenoline. End has Socket Screw Driver for neutralizing all iron core tuning systems.

No. 1002 ..... Dealer Cost \$ .50  
Display Card of 16 above  
No. D-71002 ..... Dealer Cost \$8.00

### ICA ALIGNMENT WRENCH

For RCA, Philco, etc.



Used on all makes Air Trimmer. Made of 1/2" Fenoline Rod—8 1/2" long—one end has hollow shaft hexagon wrench—other end has an especially shaped hook.

No. 1008 ..... Dealer Cost \$ .99  
Display Card of 12 above  
No. D-71008 ..... Dealer Cost \$11.88

### INSULATED NEUTRALIZING WRENCHES



Hexed—Full Length

For Philco, Majestic and Other Receivers

3/8" Diameter  
No. 985—6" long ..... Dealer Cost \$ .17  
No. 986—8" long ..... Dealer Cost .23  
No. 980—5" long ..... Dealer Cost .17  
No. 981—5" long, 1/8" dia..... Dealer Cost .20

### ICA Alignment Tool for Philco Receivers For Air Trimmer Sets



Has specially designed metal clip for air trimmers. Made of narrow fibre rod, 3/32" diam. by 6" long.

No. 1033 ..... Dealer Cost \$4.40

### ICA Insulated Adjustable Neutralizing Tools



Absolutely no metal parts. Screw driver slides into inside of neutralizing wrench.  
No. 990—Ext. from 6" to 10" Dir. Cost \$6.60  
No. 991—Ext. from 12" to 16" Dir. Cost .66

### ICA NEUTRALIZING AND ALIGNING TOOL



U. S. Army No. TL138A — ICA No. 1011  
Used for general radio tuning and aligning. Approved by U. S. Army and Navy.  
No. 1011 ..... Dealer Cost \$6.66

### BAKELITE NEUTRALIZING TOOL



Neutralizing tool used by U. S. Army Signal Corps (U. S. Army No. TL-13811).  
No. 1010 ..... Dealer Cost \$ .33  
Display Card of 12 above  
No. D-71010 ..... Dealer Cost \$3.96

### ICA Neutralizing Tools with Metal Nibs

Patent No. U.S. 88,321.  
Sturdy, unbreakable, will outlast all other type neutralizing tools.

No. 996 ..... Dealer Cost \$ .99

### ICA BONE FIBRE SCREW DRIVER



Of 1/8" bone fibre rod with a sturdy blade.  
No. 1029 ..... Dealer Cost \$ .46  
Display Card of 16 above  
No. D-71029 ..... Dealer Cost \$7.36

### ICA BONE FIBRE SCREW DRIVER



Double Edged—No Metal—Fully Insulated  
Made of 1/4" Bone Fibre Rod  
No. 1039 ..... Dealer Cost \$ .26  
Display Card of 16 above  
No. D-71039 ..... Dealer Cost \$4.16

### ICA NEUTRALIZING TOOL

For Push Button Tuners



The Socket is 3/8" in diameter, and contains a screw driver blade.

No. 1003 ..... Dealer Cost \$ .50

### ICA SET TRIMMER NEUTRALIZING TOOLS

For Philco, Zenith, RCA, etc.



Fits the smallest size trimmer condensers. Trimmer end is 3/32" diam. to fit 1/4" hole.

No. 992—6" long ..... Dealer Cost \$ .66  
Display Card of 12 above

No. D-70992 ..... Dealer Cost \$7.92  
No. 933—10" long ..... Dealer Cost \$ .83

### ICA NARROW SHAFT ALIGNMENT TOOL



RCA—Zenith—etc. 3/32" Bakelite Shaft

No. 987 ..... Dealer Cost \$ .56  
Display Card of 16 above

No. D-70987 ..... Dealer Cost \$8.96

### ICA ALIGNMENT TOOLS

For RCA Receivers



Narrow shaft Neutralizing Tools made of Bone Fibre—3/32" wide. Has screw nib inserted in Brass Collar on end.

No. 1015 ..... Dealer Cost \$ .50

Display Card of 16 above  
No. D-71015 ..... Dealer Cost \$8.00

### ICA MAGIC TUNING ALIGNMENT TOOL



Consists of a Bakelite rod with a Brass cylinder at one end, and a special finely divided iron core at the other end.

No. 977 ..... Dealer Cost \$ .66  
Display Card of 12 above

No. D-70977 ..... Dealer Cost 7.92

### ICA FORK TYPE NEUTRALIZING WRENCH and SCREW DRIVER For RCA and Other Sets



No. 1024 ..... Dealer Cost \$ .33  
Display Card of 16 above

No. D-71024 ..... Dealer Cost \$5.28

### ICA Fenoline Neutralizing Screw Drivers



Made of Fenoline. Strong and sturdy, completely insulated for neutralizing and aligning coils, condensers, receivers, etc.

No. 1028 ..... Dealer Cost \$ .26

Display Card of 16 above  
No. D-71028 ..... Dealer Cost \$4.16

### ICA NEUTRALIZING AND ALIGNING TOOL



Machined of bakelite rod 9/32 inch diameter. Designed for Western Electric Co. Approved by U. S. Army and Navy.

No. 1006 ..... Dealer Cost \$ .83

Display Card of 10 above  
No. D-71006 ..... Dealer Cost \$8.30

# ICA INSULINE ICA

## RADIO PRODUCTS

### LATEST TELEVISION TOOLS—ACCESSORIES

#### DEEP-NIB ALIGNER



Tough fibre. Metal nib entirely insulated and set within barrel end. For tuning IF and RF shielded coils and trimmers. Small enough to fit under television tubes without removing. Length: 2 1/2" x 1/8" diameter.

No. 6156 ..... Dealer Cost \$ .33  
**Display Card of 16 above**  
 No. D-76156 ..... Dealer Cost \$5.28

#### TELEVISION "CHANNEL TUNER"



A narrow all-insulated screw driver of machined fibre. Ideal for deep, inaccessible tuning. Overall: 7" Length. 1/8" blade on 4 1/2" shaft.

No. 6157 ..... Dealer Cost \$ .50  
**Display Card of 12 above**  
 No. D-76157 ..... Dealer Cost \$5.95

#### "BIG STRETCH" ALIGNER



Extra thin, extra long (9"), bone fibre aligning tool, 6 1/2" blade. Specially designed for adjustment of nested iron cores of "Admiral," "Zenith" and similar make TV sets. Permits use on RCA front ends and normally inaccessible areas.

No. 6162 ..... Dealer Cost \$ .66  
**Display Card of 12 above**  
 No. D-76162 ..... Dealer Cost \$7.92

#### TUNING WRENCH



Insulated fibre tuning wrench with extra thin recessed blade. Extra thin screw driver blade on other end (4 3/4" L.). Tenite handle. Especially designed for "Zenith" TV sets, etc.

No. 6164 ..... Dealer Cost \$5.50  
**Display Card of 16 above**  
 No. D-76164 ..... Dealer Cost 7.92

#### CORE ALIGNER



For Stewart-Warner, Belmont and other television receivers employing Stackpole adjustable cores. The 6" insulated fibre shaft has brass insert at one end for milled end cores; recessed screw driver blade at other end for standard slotted cores. Inserts are "pinned-in" and flush with shaft end for durability and ease of use.

No. 6170 ..... Dealer Cost \$ .48  
**Display Card of 16 above**  
 No. D-76170 ..... Dealer Cost \$7.74

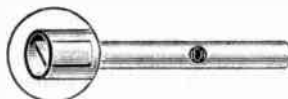
#### DURA-DUAL FIBRE TV ALIGNER



A double bladed aligning tool, measuring 7 inches in length. Made of durable fibre for complete insulation and sturdiness. Narrow shaft is 1/8" in diameter. Serves many TV servicing requirements.

No. 6158 ..... Dealer Cost \$ .20  
**Display Card of 16 above**  
 No. D-76158 ..... Dealer Cost \$3.20

#### DOUBLE END "KLEER ALIGNER"



Low-loss CLEAR PLASTIC all-insulated shaft. Has two recessed blades set within rod ends, completely insulated. One blade suitable for No. 6 screw and smaller; other blade for No. 4 screw and smaller. Shaft is 7" long x 3/32" diameter.

No. 6193 ..... Dealer Cost \$ .56  
**Display Card of 12 above**  
 No. D-76193 ..... Dealer Cost \$6.72

#### "KLEER-ALIGNER"



A low-loss CLEAR PLASTIC all-insulated aligning tool. Narrow shaft. Has recessed insulated blade on one end; extended blade on other end. Designed for many aligning uses. For trimmers, IF transformers, etc. Measures 7" in length x 3/32" diameter.

No. 6192 ..... Dealer Cost \$ .56  
**Display Card of 12 above**  
 No. D-76192 ..... Dealer Cost \$6.72

#### "SUPER STRETCH KLEER ALIGNER"



All insulated extra long TV aligner for inaccessible areas. The low-loss CLEAR PLASTIC Rod is 12" long x 3/32" diam. Carries an extended blade at one end; brass slotted insert at other end. A handy tool for those hard-to-reach spots.

No. 6194 ..... Dealer Cost \$ .75  
**Display Card of 12 above**  
 No. D-76194 ..... Dealer Cost \$9.00

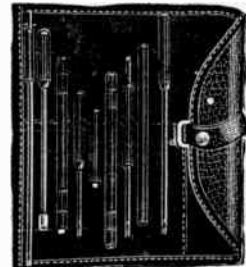
#### DUAL ALIGNER



Dual purpose narrow shaft, fibre alignment tool for trimmers, IF transformers, etc. Recessed screw nib on one end; metal screw driver on other end.

No. 6166 ..... Dealer Cost \$ .50  
**Display Card of 16 above**  
 No. D-76166 ..... Dealer Cost \$8.00

#### TELEVISION HANDI-KIT



For Television servicing. Contains nine (9) latest tools especially designed for television needs. Includes aligner for IF and RF and "K-Tran" Transformers (No. 978); slim aligning tool for cramped spaces (No. 6161); Extra thin long (9") aligner (No. 6162); thin diameter tuning wand (No. 6163); tuning wrench (No. 6164); dual aligner, narrow shaft (No. 6166); Stackpole core aligner (No. 6170); deep nib aligner (No. 6156); narrow insulated screw driver for deep tuning (No. 6157). Packed in attractive leatherette case for easy carrying. A real combination value.

No. 6165 ..... Dealer Cost \$4.50

#### TRAN-ALIGNER



Newly designed all-insulated aligning tool for standard IF and RF and "K-Tran" midjet transformers. Trim fiber; milled at one end, screw driver at other end. 2 1/2" length blade; 6" overall.

No. 978 ..... Dealer Cost \$ .50  
**Display Card of 16 above**  
 No. D-70978 ..... Dealer Cost \$8.00

#### SLIM-ALIGNER



Alignment tool with extra thin recessed blade and slim metal shaft for cramped probing in television receivers. Fiber handle. Especially suitable for "Admiral" and similar make television sets.

No. 6161 ..... Dealer Cost \$ .66  
**Display Card of 12 above**  
 No. D-76161 ..... Dealer Cost \$7.92

#### STUB ALIGNER



Ideal when cramped space demands short insulated tuning tool. Exposed nib for screw driver type controls not carrying high voltages. Tough fibre. Length: 2 1/2" x 1/8" diameter.

No. 6155 ..... Dealer Cost \$ .27  
**Display Card of 16 above**  
 No. D-76155 ..... Dealer Cost \$4.30

# ICA INSULINE ICA

## RADIO PRODUCTS

### TUNING WAND



Extra thin diameter to fit small coil openings in television sets. Flexible vinylite. Brass insert in one end; molded powdered iron core in other end. Lowers or increases inductance. Suitable for "Zenith," etc., TV sets.

No. 6163 ..... Dealer Cost \$ .66

Display Card of 12 above

No. D-76163 ..... Dealer Cost \$7.92

### RF AND SIGNAL TRACER PROBE

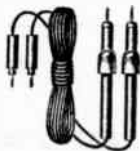
Germanium Crystal Circuit. Assures accurate analysis of circuit defects. May be used with audio amplifier for audible tracing or with V.T.V.M. for RF and AF measurements. Low input capacitance. The ideal probe for the audio section of television circuits. The sturdy bakelite barrel has sealed tenite ends with solderless phone tip and includes 48" RG59/U coaxial cable with phone plug and 18" rubber covered ground lead with alligator clip.



No. 4310 ..... Dealer Cost \$7.50

### HEAVY DUTY TEST LEADS

Engineered for TV's high voltage measurements. Insulated to withstand 15,000 volts D.C. Thick-walled bakelite handles with finger guards. 48" heavy duty cable.



No. 4317 ..... Dealer Cost \$3 per pair

Display Card of 3 above

No. D-74317 ..... Dealer Cost \$9.00

### ICA SAFE-T-TESTER

A new, unique, non-short-circuiting prod that makes contact only when pressure is applied to barrel. Ideal for cramped spaces where probing is necessary. Specially applicable to television needs.



No. 446 ..... Dealer Cost \$9.00

Display Card of 6 above

No. D-70446 ..... Dealer Cost \$5.40

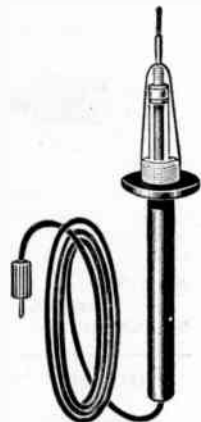
### "KILOVOLTER" MULTIPLIER PROBE

A skilfully-made probe that combines the finest high voltage design principles with precision fabricating—a superb multiplier probe whose efficiency . . . sturdiness . . . popular price, is beyond compare.

Equipped with 15 K.V. range multiplier that provides full range PLUS existing meter voltage. For example, use of the ICA probe will increase the range of a 5,000-volt range voltmeter to 20,000 volts full scale.

The three (3) built-in 1% resistors (totaling 6 watts dissipation) are coaxially mounted, providing air-spacing to further assure heat dissipation and a completely insulated probe.

Highest grade components include sturdy thermo-plastic barrel with safety finger guard and sealed ends. Over-all length: 8½". Supplied with 5-ft. heavy duty lead with insulated phone tip.



No.	Dealer Cost
6167—20,000 ohms per volt (50 micro amps. meter movement).....	\$6.95
6168—10,000 ohms per volt (100 micro amps. meter movement).....	6.95
6169—5,000 ohms per volt (200 micro amps. meter movement).....	6.95

NOTE: Probes of special resistance values up to 2000 megohms are available on order to quantity users.

### NEW 30-KV PROBE

Similar to the Insuline "Kilovolt" No. 6167 above, for 20,000 ohm per volt, 50 micro amp. meters only. A precision instrument . . . 600 megohms 2% high voltage multiplier  
No. 6220 ..... Dealer Cost \$7.95

### THE INSULINE "100 X" MULTIPLIER PROBE

A new 30KV to 50KV VTVM Multiplier Probe (Internal resistance 1090 megohms). For ALL 10 to 11 megohm input instruments.

This VTVM probe will multiply existing meter ranges by a factor of 100; thus, if the top range of the instrument is 300 volts, meter will read 30,000 volts with probe. If top range is 500 volts, meter with probe will read 50,000 volts.

A few of the most popular VTVM's with which this probe may be used follows:

#### 30-KV TOP RANGE

RCA No. WV65A; WV75A; 105A Electronic Design  
Heath No. V1; V2; V2A; V4 Radio City 464; Reiner  
661; Triplett 2541

#### 50-KV TOP RANGE

RCA No. WV95A; 102A; 102B; 102C  
No. 6222—With microphone type connector and ground lead  
Dealer Cost \$7.95



For phone plug instruments, the Insuline No. 33 Adapter is required.

No. 33—Phone Plug Adapter  
Dealer Cost \$ .27



6222

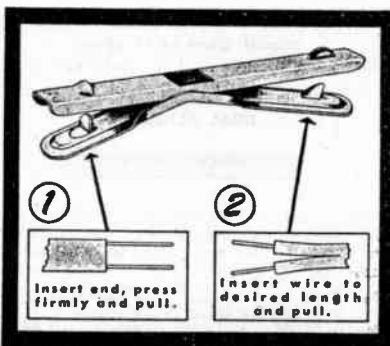
### THE "QUIK-STRIP" 300-OHM WIRE STRIPPER

A NEW, unique stripper for quick and easy stripping and skinning of any 300-ohm wire. Cadmium plated. Should be included among every television-radio serviceman's tools.

No. 6285 ..... Dealer Cost \$ .65

Display Card of 12 Strippers

No. D-76285 ..... Dealer Cost \$7.80



# ICA INSULINE RADIO PRODUCTS ICA

## ICA ALL-PURPOSE TEST LEAD KIT

Complete For Every Testing Need

Equipped with one pair of test leads which have 48" of red and black kinkless live rubber wire. One end has insulated removable banana-type plugs. Included in this test kit:

- 1 pr. test leads.
- 1 pr. insulated alligator clips—red and black.
- 1 pr. insulated spade lugs—red and black.
- 1 pr. insulated needle points—red and black.

No. 1005—Kit, complete  
Dealer Cost \$2.31

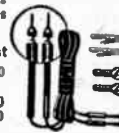


## ICA PHONO-NEEDLE POINT TEST LEADS

With Slim Handles and Flexible Wire

Flexible rubber-covered, kinkless wire, 48" long. Tenite handles 4" long.

- |                                |           |
|--------------------------------|-----------|
| No.                            | Dir. Cost |
| 382—With Phone Tips            | \$.60     |
| <b>Display Card of 6 above</b> |           |
| D-70382                        | 3.60      |
| 381—With Spade Terminals       | .60       |
| <b>Display Card of 6 above</b> |           |
| D-70381                        | 3.60      |
| 378—With alligator Clips       | .73       |



## ICA DE LUXE EXTRA-FLEXIBLE TEST LEADS

Slim Handles and Solderless Plugs

48" Extra-Flexible Test Leads with 4" Tenite handles. Non-kinking, rubber insulated wire.

- |                                |           |
|--------------------------------|-----------|
| No.                            | Dir. Cost |
| 355—With Phone Tips            | \$.60     |
| <b>Display Card of 6 above</b> |           |
| D-70355                        | 3.60      |
| 356—With Spade Terminals       | .60       |
| <b>Display Card of 6 above</b> |           |
| D-70356                        | 3.60      |



## ICA PENCIL TYPE TEST LEADS

Finger-Grip Molded Tips

All connections are properly soldered providing low resistance connections vital in all precision tests. The Molded Finger Grip Tips are provided with rivets for easy removal of wire. Length of test leads is 48". Handles are 5" long.

- |                                |                    |
|--------------------------------|--------------------|
| No. 373                        | Dealer Cost \$1.15 |
| <b>Display Card of 6 above</b> |                    |
| No. D-70373                    | Dealer Cost \$6.90 |



## NEW ICA SLIM-LINE TEST LEADS

Long vinyl-insulated shaft permits probing in closely wired circuits without fear of shorting. Black and red Tenite handles, 48" wire lead. With molded phone tip plug.

- |                                |            |
|--------------------------------|------------|
| No.                            | Dir. Cost  |
| 430                            | \$1.05 pr. |
| <b>Display Card of 6 above</b> |            |
| D-70436                        | 6.30       |

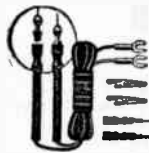


## ICA HEAVY DUTY LABORATORY TEST LEADS

Long Slim Handles and Removable Phone Needle Chuck

Extra long slim red and black handles knurled at end for finger grip ease. Handles 6" long. 50" of heavy duty kinkless, flexible rubber wire.

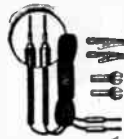
- |   |           |
|---|-----------|
| No.   | Dir. Cost |
| 400—With knurled grip handle. Insulated solderless plug | \$1.09    |
| 388—With alligator clip                                 | .69       |
| 391—With spade lugs                                     | .82       |
| 382—With non insulated phone tips                       | .92       |



## ICA SLIM HANDLE TEST LEADS

Made of sturdy Tenite Handles. 50" of Kinkless Live Rubber wire. Handles 6" Long—Overall Length 7". Prods have pointed large phone tip plugs.

- |                                |           |
|--------------------------------|-----------|
| No.                            | Dir. Cost |
| 313—Phone Tips on end          | \$.83     |
| <b>Display Card of 6 above</b> |           |
| D-70313                        | 5.00      |
| 314—Spade Lugs on end          | .83       |
| 315—Alligator Clips on end     | .92       |
| <b>Display Card of 6 above</b> |           |
| D-70315                        | 5.52      |



## ICA UNBREAKABLE TEST PRODS

Long Metal Prod with Shock-proof Rubber Handles. One end has standard needle point tips. Other end has Insulated Solderless Plugs. Supplied with 50" Kinkless Rubber Wire.

- |  |                                |
|--|--------------------------------|
| No. 332—With Phone Tips                | Non Insulated Dir. Cost \$5.66 |
| No. 331—Insulated Solderless Plug Ends | Dir. Cost \$7.76               |



## ICA TEST-LITE



Provides a steady, bright light—without annoying flickering—for dark, narrow spaces around chassis, cabinets, etc. Plugs into any AC-DC socket, 105-125 volt., 4 1/2 ft. cord. Includes standard 6 volt lamp, No. 47, .15 amp., and plug complete.

No. 938.....Dealer Cost \$9.99

## ICA ALL PURPOSE TEST LEADS

Made of sturdy Tenite Tubing. Slim handles, 6" long. Overall length 7 1/4". Rubber covered wire 50" long.

- |                  |           |
|------------------|-----------|
| No.              | Dir. Cost |
| 312—Complete Kit | \$1.65    |



## NON-KINK FLEXIBLE TEST LEAD WIRE

Flexible rubber covered wire that will not kink or wear down in service. Consists of very fine tinned stranded copper wire with a heavy wall of live rubber insulation.

- |                              |                  |
|------------------------------|------------------|
| No. 307—100 ft. spool, Black | Dir. Cost \$2.76 |
| No. 309—100 ft. spool, Red   | Dir. Cost, 2.76  |



## HIGH VOLTAGE HEAVY-DUTY BAKELITE TEST PRODS

Measures 2" overall

- |                    |           |
|--------------------|-----------|
| No.                | Dir. Cost |
| 485—Black Bakelite | \$3.36    |



## ICA HEAVY-DUTY TEST PRODS

Slim tapped Tenite handle fitted with threaded, heavy-duty phone tip. Length 5".

- |                |                    |
|----------------|--------------------|
| No. 387R—Red   | Dealer Cost \$3.33 |
| No. 387B—Black | Dealer Cost .33    |



## HIGH VOLTAGE ICA HEAVY-DUTY BAKELITE TEST PROD HANDLES

- |                        |                  |
|------------------------|------------------|
| No. 480—Black Bakelite | Dir. Cost \$7.76 |
|------------------------|------------------|



## ICA SOLDERLESS PLUG TEST PRODS

With Solderless Plug Chuck



5 1/4 Inch Long Prods

- |                                 |                    |
|---------------------------------|--------------------|
| No. 390R—Red                    | Dealer Cost \$ .26 |
| <b>Display Card of 16 above</b> |                    |
| No. D-70390R                    | Dealer Cost 4.16   |
| No. 390B—Black                  | Dealer Cost .26    |
| <b>Display Card of 16 above</b> |                    |
| No. D-70390B                    | Dealer Cost 4.16   |

7 1/4 Inch Long Prods

- |                                 |                  |
|---------------------------------|------------------|
| No. 335R—Red                    | Dealer Cost .33  |
| <b>Display Card of 16 above</b> |                  |
| No. D-70335R                    | Dealer Cost 5.28 |
| No. 335B—Black                  | Dealer Cost .33  |
| <b>Display Card of 16 above</b> |                  |
| No. D-70335B                    | Dealer Cost 5.28 |

## ICA FENOLINE PHONO. NEEDLE POINT TEST PRODS

With Removable Chuck



5 Inch Test Prod

- |                                 |                    |
|---------------------------------|--------------------|
| No. 389R—Red                    | Dealer Cost \$ .26 |
| <b>Display Card of 16 above</b> |                    |
| No. D-70389R                    | Dealer Cost 4.16   |
| No. 389B—Black                  | Dealer Cost .26    |
| <b>Display Card of 16 above</b> |                    |
| No. D-70389B                    | Dealer Cost 4.16   |

7 Inch Test Prod

- |                                 |                  |
|---------------------------------|------------------|
| No. 334R—Red                    | Dealer Cost .33  |
| <b>Display Card of 16 above</b> |                  |
| No. D-70334R                    | Dealer Cost 5.28 |
| No. 334B—Black                  | Dealer Cost .33  |
| <b>Display Card of 16 above</b> |                  |
| No. D-70334B                    | Dealer Cost 5.28 |

## ICA GRIP-RITE MOLDED PHONE TIP PLUG

Replacement for ICA and Weston — as well as other make Test Leads.



- |                                      |                    |
|--------------------------------------|--------------------|
| No.                                  | Dir. Cost          |
| 868—Red                              | \$.30              |
| 869—Black                            | .30                |
| <b>Display Card of 12 each above</b> |                    |
| No. 70868-9                          | Dealer Cost \$7.20 |

## ICA PHONO NEEDLE CHUCKS

Push on type can be forced into handles — Threaded type can be screwed into handles. Machined of brass, nickel plated with needle point.

- |                                    |           |
|------------------------------------|-----------|
| No.                                | Dir. Cost |
| 508—Push-on Type, Overall size 1"  | \$1.10    |
| 509—Threaded Type, Overall size 1" | .13       |

## STANDARD PHONE TIPS

Overall Length 1"

- |         |                         |
|---------|-------------------------|
| No. 360 | Dealer Cost.....\$1.20C |
|---------|-------------------------|



## HEAVY DUTY PHONE TIPS

Overall Length 1 1/4"

- |         |                    |
|---------|--------------------|
| No. 361 | Dealer Cost \$0.14 |
|---------|--------------------|



# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA CHROME SILVER DIAL PLATES

2 1/2" and 4" diameter. Two types, calibrated 180 degrees 0-100 and 325 degrees, 0-100.



No.	Degrees	Dia.	Calib.	Dir. Cost
2196	325	2 1/2"	0-100	\$ .76
2197	180	2 1/2"	0-100	.76
2194	325	4"	0-100	.95
2195	180	4"	0-100	.95

### ICA BRASS BLACK SATIN FINISH DIAL PLATES

With Etched Silver Numerals



No.	Degrees	Dia.	Calib.	Dir. Cost
2230	325	3 1/2"	0-100	\$.42
2232	180	3 1/2"	0-100	.42
2233	180	2"	100-0	.32
2234	325	2"	0-100	.32
2236	180	2"	0-100	.32

### ICA CHROME SILVER DIALS

With Finger Grip Flange Knobs

Beautiful dial plates accurately Etcho-engraved with black numerals and calibrations.



No.	Size	Degrees	Calib.	Dir. Cost
2170	2 1/2"	325	0-100	\$1.39
2171	2 1/2"	180	0-100	1.39
2168	4"	325	0-100	1.82
2169	4"	180	0-100	1.82

### ICA MINIATURE DIALS

Beautiful Chrome Silver dials with black etched numerals. Finger grip black knob. Only 1 1/2" diameter. Fit 1/8" shafts.



No.	Dir. Cost
2164-10-0-180	\$.76
2165-10-0-270	.56

### ICA CHROME SILVER DIAL PLATES

Attractive grain satin finish. Black Etcho Engraving on Chrome Silver Background Plates.

No.	Degrees	Dia.	Calib.	Dir. Cost
2294	180	2"	0-100	\$.53
2295	325	2"	0-100	.53
2296	180	3 1/4"	0-100	.83
2297	325	3 1/4"	0-100	.83
2298	180	4"	0-100	.93
2299	325	4"	0-100	.93



### ICA ETCHED DIAL PLATES

#### RECTANGULAR TYPES

Made of brass—finished in black with etched silver markings. Calibrated for 300 degree rotation. Marked 0 to 10. Will fit on 3/8" bushing. Size 2 1/2" x 1-11/16".

No.	Marking	Dir. Cost
2244	—Record	\$.20
2245	—Microphone	.20
2246	—Gain	.20
2247	—Tone	.20



#### ICA INDICATING PLATES

Made of heavy brass with black satin background. Silvered "Etcho Gravured" numerals and lettering. 3/8" center mounting hole. 1 1/8" Diameter.

No.	Degrees	Dir. Cost
2259	—Marked 1 to 6	\$.23
2450	—Marked 1 to 5 (Volume)	.23
2451	—Marked 1 to 5 (Tone)	.23
2452	—Marked 1 to 10	.23
2453	—Marked Off-On—with arrow	.23



### ICA NAME PLATES

#### 1-INCH ROUND

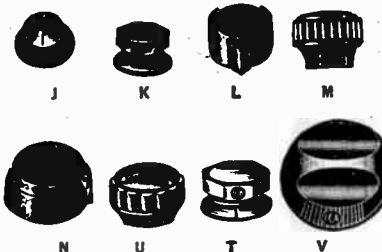
No. 2237	—For "Microphone"	Dealer Cost \$1.14
No. 2238	—For "Phono"	
No. 2239	—For "On Off"	



### RADIO REPLACEMENT AND INSTRUMENT KNOBS



No.	Type	Color	Size	Dir. Cost
1125	A	Black	1 1/2"	\$.11
1127	A	Red	1 1/2"	.15
1126	B	Black	2"	.15
1128	B	Red	2"	.16
1153	E	Black	1 1/2"	.20
1154	E	Walnut	1 1/2"	.20



No.	Type	Color	Size	Dir. Cost
248	J	Black	1 1/2"	\$.18
249	J	Black	1 1/2"	.19
1076	K	Walnut	3/4"	.13
1049	L	Walnut	3/8"	.11
1050	L	Walnut	1"	.13
1174	M	Black	3/8"	.15
1089	N	Walnut	3/8"	.13
1147	U	Black	3/4"	.13
1148	U	Walnut	3/4"	.13
1077	T	Walnut	3/4"	.11
1078	T	Walnut	3/4"	.13
1272	V	Black	3/4"	.15
1273	V	Walnut	3/4"	.15

### ICA FINGER-GRIP POINTER KNOBS



Moulded of black bakelite with 1/4" hole. Pointer type knobs have white indicators, flange type knobs have white indicating line.

With 1/4" Brass Inserts

#### TYPE A—WITH POINTER

No. 1166	—1 1/2"	Dealer Cost	\$.22
No. 1168	—1"	Dealer Cost	.52
No. 1170	—2"	Dealer Cost	.65

#### TYPE A—LESS POINTER

No. 1165	—1 1/2"	Dealer Cost	\$.31
No. 1167	—1"	Dealer Cost	.37
No. 1169	—2"	Dealer Cost	.51

#### TYPE B—WITH FLANGE

No. 1171	—2 1/2"	Dealer Cost	\$.51
No. 1172	—3"	Dealer Cost	.60

NOTE: Above Knobs also furnished with 2 set screws. Order by adding "B" to each number.

### ICA VERNIER DIAL MARKER



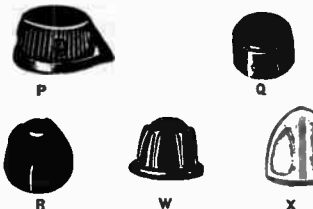
Complete with self-tapping screws for mounting on metal, wood, bakelite or brass panels.

No. 2185	—For 2 1/2"	—325° Dials.	Dealer Cost	\$.33
No. 2180	—For 2 1/2"	—180° Dials.	Dealer Cost	.33
No. 2191	—For 4"	—325° Dials.	Dealer Cost	.33
No. 2182	—For 4"	—180° Dials.	Dealer Cost	.33



No.	Type	Color	Size	Dir. Cost
1270	F	Black	1 1/2"	\$.18
1271	F	Black	2 1/2"	.21
1137	G	Walnut	3/4" x 3/4"	.13
1138	G	Walnut	3/4" x 1/2"	.12
1139	G	Walnut	1" x 1/2"	.13
1087	H	Walnut	1"	.15
1088	H	Black	1"	.15
1133	I	Walnut	3/4" x 3/4"	.12
1134	I	Walnut	1" x 1/2"	.13
1274	S	Black	1 1/4" x 1/2"	.18
1274-B	S	Black	1 1/4" x 1/2"	.25
1275	S	Black	2" x 1/2"	.20

\*With 2 Set Screws.



No.	Type	Color	Size	Dir. Cost
1081	P	Black	3/4"	\$.09
1082	P	Red	3/4"	.09
1084	P	Brown	3/4"	.09
1085	P	White	3/4"	.10
1116	Q	Walnut	1"	.11
1117	Q	Walnut	1"	.14
1135	R	Walnut	3/4"	.09
1136	B	Walnut	3/4"	.11
1310	W	Black	3/4"	.08
1311	W	Walnut	3/4"	.08
1312	W	Ivory	3/4"	.08
1320	W	Black	3/8"	.08
1321	W	Walnut	3/8"	.09
1322	W	Ivory	3/8"	.10
1331	X	Walnut	3/4"	.09
1332	X	Ivory	3/4"	.10

### ICA KNOB ASSORTMENTS

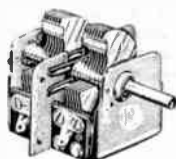


Walnut Bakelite JUNIOR ASSORTMENT  
No. 1048—50 Knobs. Contains 5 each of 10 popular type knobs listed above.  
Dealer Cost \$5.90

MASTER ASSORTMENT  
No. 1043—100 Knobs. Contains 12 different type popular knobs including pointer knobs.  
Dealer Cost \$11.50

# ICA INSULINE RADIO PRODUCTS ICA

## ICA MIDGET PRECISION CONDENSERS



Better mechanical design insures constancy of calibration and uniformity between units. Ball bearings on both ends of shaft insure long life without wear or side play. Heavy brass springs make direct contact with rotor shaft, insuring a clean wiping contact at all times.

No.	Single Gang Condenser	Dealer Cost
533	185 mmfd.	\$1.98
<b>Two Gang Condenser</b>		
538	185 mmfd.	2.31
534	365 mmfd.	2.31
<b>Three Gang Condenser</b>		
532	185 mmfd.	2.97
531	365 mmfd.	2.97

## SUPERHETERODYNE TYPE

Designed for 455KC IF. RF section is 27 plates; 435 Mmfd. Oscillator Section is 19 plates; 173 Mmfd. Measurements similar to two gang condensers shown above.

Overall Width: 1 1/8" Overall Height: 2" Overall Length: 3 1/8"

No. 545.....Dealer Cost \$2.31

## ICA CERAMIC PADDING CONDENSERS



Compact, yet rugged Padding Condensers. Designed for aligning tandem condensers, short wave band switch coils, antenna trimmers, etc. Uses high grade Mica and Phosphor Bronze Spring contacts.

No.	Min. Cap.	Max Cap.	Dir. Cost
611	4.0 mmfd.	40 mmfd.	\$.33
612	12.0 mmfd.	100 mmfd.	.33
613	70.0 mmfd.	350 mmfd.	.37
614	160.0 mmfd.	500 mmfd.	.37

## CERAMIC RODS

Made of Alsimag. Suitable for mounting insulators, condensers, coils, etc.

Available in two lengths.

No.	Lgth.	Dir.	Tap.	Cost
2310	1 1/4"	1/8"	6-82	\$.17
2311	3 1/4"	1/8"	6-82	.24



## CERAMIC BEAD INSULATORS



3/8" Diam.

Used for construction of short concentric link lines.

No 2315—(100 beads) ..... Dealer Cost \$7.75

## INSULEX INSULATORS



Made of WHITE Glazed Insulex. This new line of insulators meets the demand for a perfect, non-porous low loss product. Used by broadcasters, amateurs, experimenters and set-builders. All feed-thru have cork washers.



## STAND OFF INSULATORS

No.	Description	Height	Base Size	Dir. Cost
2300	Little Pete	1"	1/2" x 3/4"	\$.08
2301	Junior Pete	1 1/8"	3/4" x 1 1/4"	.10
2302	Big Pete	1 1/2"	1" x 1 1/2"	.13
2303	Beehive	2 3/8"	2" Diam.	.17
2304	Jack Type	1 1/2"	1" x 1 1/4"	.17

## FEED-THRU INSULATORS

No.	Description	Ht.	Base Diam.	Mtg. Hole	Dir. Cost
2305	Sub-Panel	1 3/8"	3/8"	1/8"	\$.14
2306	Sub-Panel	2"	3/4"	3/8"	.17
2307	Sub-Panel	2 3/8"	7/8"	1/2"	.19
2334	Large				
	Sub-Panel	4"	1 1/2"	5/8"	.46
2320	Jack Type	1 1/8"	3/4"	1/8"	.23
2321	Jack Type	2 3/8"	7/8"	1/2"	.27

## GIANT INSULEX INSULATORS

Heavy Duty—Will Withstand 10,000 Volts

No.	Description	Ht.	Base Diam.	Mtg. Hole	Dir. Cost
*2330	Stand Off	4 1/2"	3 1/4"	1/4"	\$.63
**2331	Stand Off	4 1/2"	3 1/2"	1/4"	.60
*2332	Feed thru	4"	2"	7/8"	.63
**2333	Feed thru	4"	2"	7/8"	.60

\*With Wing Nuts \*\*With Screws and Nuts

## ICA BASE-MOUNTING BAKELITE SOCKETS



No.	Prong	Dealer Cost
2480	4 Prong	\$.30
2481	5 Prong	.33
2482	6 Prong	.37
2483	7 Prong comb. large and small	.40
2489	8 Prong OCTAL	.43
2490	Contact for above Sockets	\$.165C



## ICA "INSULEX" BASE MOUNTING SOCKETS

Especially adapted for ultra short-wave work and transmitters.

No.	Prong	Dealer Cost
290	4 Prong	\$.60
291	5 Prong	.60
292	6 Prong	.66
294	Comb. 7 Prong, large and small	.66
300	8 Prong OCTAL	.66

## BAKELITE WAFER SOCKETS



Wafer socket of punched bakelite for miniature seven pin button base tubes. Phosphor bronze contacts. Standard mounting centers.

No. 1122 ..... Dealer Cost \$.09

## BAKELITE WAFER SOCKET

Similar to No. 1122 above but with grounding strap.

No. 1124 ..... Dealer Cost \$.10

## ICA "INSULEX" WAFER SOCKETS

An ideal low loss socket designed for ultra high frequency reception.



No.	Prong	Dealer Cost
2600	4 Prong	\$.30
2601	5 Prong	.30
2602	6 Prong	.33
2603	7 Prong, large	.36
2604	7 Prong, small	.36
2605	8 Prong OCTAL for new metal tubes	.39
2636	Contact for above Sockets	\$.300C

## ICA BAKELITE WAFER SOCKETS



No.	Prong	Dealer Cost
1118	4 Prong	\$.08
1096	5 Prong	.08
1095	6 Prong	.08
1119	7 Prong, small	.09
1120	7 Prong, large	.09
1121	8 Prong OCTAL	.10
1123	Loktal Wafer	.10

## ACORN TUBE WAFER SOCKET



Of Navy approved ceramic with silver plated contacts. Can be easily inserted and removed and no amount of vibration will cause the tube to become loose.

No. 961..... Dealer Cost \$ .60  
No. 2466—Contact only..... Dealer Cost 1.50C

## MOLDED BAKELITE SOCKET

For Miniature Tubes Black molded general purpose bakelite with mounting saddle.



Standard mounting centers. Phosphor bronze contacts.

No. 2475 ..... Dealer Cost \$.14  
Same as above but mica filled.  
No. 2476 ..... Dealer Cost \$.17

## ICA MOLDED BAKELITE SNAP-ON SOCKETS



Octal—Loktal

Mounted in cadmium plated steel "Saddle." Equipped with 4 grounding lugs on saddle—Positive grip contacts.

No. 2470—Octal Socket ..... Dealer Cost \$.10  
Mtg Center 1 1/2"—Chassis Hole 1 1/8"  
No. 2471—Loktal Socket ..... Dealer Cost \$.14  
Mtg Center 1 1/8"—Chassis Hole 1"

# ICA INSULINE RADIO PRODUCTS ICA

## ICA TOGGLE SWITCHES

Furnished in Nickel or Antique Bronze. Capacity 1 Amp. 250 Volts. 3 Amps. 125 Volts. Mfd. by H & H for ICA.

No.	Shank Length	Description	Finish	Dr. Cost
1230	3/8"	S.P.S.T.	Nickel	\$.45
1232	3/8"	S.P.S.T.	Bronze	.50
1233	3/8"	S.P.S.T.	Bronze	.55
1235	3/8"	S.P.S.T.	Nickel	.60
1236	3/8"	S.P.D.T.	Nickel	.60
1237	3/8"	S.P.D.T.	Nickel	.72
1238	3/8"	D.P.S.T.	Nickel	.84
1365	3/8"	D.P.D.T.	Nickel	.96
1366	3/8"	D.P.D.T.	Nickel	1.11



## BAT-HANDLE TOGGLE SWITCH

Made by H & H. Identical to toggle switches listed at left, except that handle is longer and shaped like a baseball bat.

Leads on and off plate.

Nickel plated only— $\frac{1}{8}$ " shank.



No.	Description	Dealer Cost
1296	S.P.S.T.	\$.45
1297	S.P.D.T.	.60
1298	D.P.S.T.	.84
1299	D.P.D.T.	.96

## BAT HANDLE DOUBLE THROW SWITCH

A sturdy double throw bat handle toggle switch featuring center "OFF" position. Made by H. & H. Has many uses: Television Antenna installations; for reversing motor direction; model railroads, etc.

Case Measurements: 1 1/8" L., 1 1/4" W., 1" H., 3/8" Shank.



No.	Description	Dealer Cost
1386	Single Pole Double Throw	\$.99
1387	Double Pole Double Throw	1.65

## ICA BAKELITE KNIFE SWITCHES

Hardware of brass, heavily nickel-plated. Mounted on highly polished bases of black BAKELITE. Firm contact assured.



No.	Description	Dir. Cost	No.	Description	Dir. Cost
1216	S.P.S.T.	\$.51	1220	8 P.D.T.	\$1.20
1217	S.P.D.T.	.60	1221	4 P.S.T.	1.50
1218	D.P.S.T.	.69	1222	4 P.D.T.	1.80
1219	D.P.D.T.	.81	1364	5 P.D.T.	2.10
1360	8 P.S.T.	1.11			

## ICA PORCELAIN KNIFE SWITCHES

Moisture-proof base. Recommended for outdoor use. Hardware of brass, heavily nickel plated.



No.	Description	Base Size	Dir. Cost
235	S.P.S.T.	1 1/2" x 1"	\$.24
236	S.P.D.T.	2 1/2" x 1"	.30
237	D.P.S.T.	1 1/2" x 1 1/2"	.42
238	D.P.D.T.	2 1/2" x 1 1/2"	.54

## ICA SLIDER SWITCHES

SMALL . . . COMPACT. Switch dimensions: 1 1/2" x 1/2" x 1/4". S.P.S.T. includes chrome mounting plate.



No.	Description	Dealer Cost
1255	S.P.S.T.	\$.18
1259	S.P.D.T.	.18
1260	D.P.D.T.	.24
1264	D.P.S.T.	.24

## MINIATURE BAKELITE SWITCHES

Can be mounted on panel or base. Black Bakelite base—highly nickel-plated brass parts with insulated handles.

No.	Description	Base Size	Dir. Cost
2223	S.P.S.T.	1 1/4" x 1/2"	\$.21
2224	S.P.D.T.	1 1/4" x 3/8"	.36
2225	D.P.D.T.	1 1/4" x 1"	.45
2226	D.P.S.T.	1 1/4" x 1"	.42



## ICA ROTARY SWITCHES

Rated 3 Amps. at 125 Volts. Over-all Length of shafts 1 1/2". Made by H & H for ICA. Underwriters Approved.



No.	Threaded Shank	Description	Dealer Cost
1228*	3/8"	S.P.S.T.	\$.60
1229*	1"	S.P.S.T.	.81
1286	3/8"	S.P.D.T.	.72
1287	1"	S.P.D.T.	.96
1288	3/8"	D.P.D.T.	1.11
1289	1"	D.P.D.T.	1.35

\*Rated 3 Amps. at 250 V.

## ICA HI-POWER SWITCH

Push Button Type



Designed to break primary circuit when rack door is open. D.P.S.T. Made by H & H for ICA. Capacity 12 Amp. 125 Volt. Overall size 1 1/2" long, 3/4" wide, 3/8" high, 7/16" shank.

No. 1280 Dealer Cost \$1.59

## ICA PUSH-BUTTON SWITCH

Single pole 2 circuit momentary switch. One circuit is "ON"; other normally "OFF." One Amp., 125 Volt, made by H & H for ICA. Shank 3/8" long.



No. 1282 Dealer Cost \$1.05

## ICA EXTRA HEAVY DUTY SWITCH

D.P.D.T. With Neutral Center



An extra large heavy duty, Double Pole, Double Throw Switch with neutral position in the center for use in heavy current circuits such as transmitters, power amplifiers, motors, etc. Contacts have fast "break" which reduces the tendency to arc. Rated at 10 Amps., 125 Volts. Size of switch case, 2 1/2" long, 1" high, 1 1/4" wide. Mounting sleeve diameter 3/4".

No. 1283 Dealer Cost \$3.75

## "ON-OFF" PLATE

For Toggle Switch



Nickel Plated  
No. Dir. Cost  
1300 \$.02  
Antique Bronze  
1300BR .03

## ICA POWER SWITCH

(Toggle Type)

Characteristics and dimensions same as No. 1280 described above.



No. 1281  
Dealer Cost \$1.08

## ICA ROTARY CANOPY SWITCH

Single pole switch 1/4" shank with brown bakelite knob and 6" leads—1 ampere—250 volts.



No. 1257 Dealer Cost \$4.1

## GT AND GT/G TYPE TUBE SHIELDS

Latest type seamless, drawn shell type. Length 2 1/4".



No.	For Tube	Dir. Cost
1744	Open top*	1.218" \$.09
1745	Closed top*	1.218" .09
1746	Open top**	1.165" .09
1747	Closed top**†	1.165" .09

\*For GT and GT/G tubes with large metal base.

\*\*For GT tubes with small metal base.

†For Loktal tubes.

## ICA 807 TUBE SHIELD

For use with Transmitter Pentodes, and Tetrodes, to prevent oscillation. Can also be used on RK 20, RK 80 and 804 tubes.



No.	Dealer Cost
1545	\$.36

## FORM FIT TUBE SHIELDS

A tube shield that assures a snug, positive fit. Vertical grooves provide flexibility. Includes ground clip as illustrated. Protects tubes against excessive vibration.



No. 1727B—For GT; GT/G and Loktal tubes. Length 2 1/4" Dealer Cost \$0.09

No. 1729B—For GT and GT/G tubes. Length 2 3/4" Dealer Cost .09

## ICA ALUMINUM TUBE SHIELD

For 55, 57, 68, etc. type tubes



No.	Dealer Cost
1708	1 1/4" mounting centers \$.24

## ICA GRID CAP SHIELDS

(For Metal Tubes)

Fits firmly over grid cap, affording complete shielding. Slotted cap permits passage of grid wire.



No.	Dealer Cost
1552	\$.09
1558	With Bakelite Insert. .15

## ICA COIL SHIELDS

With Detachable Base

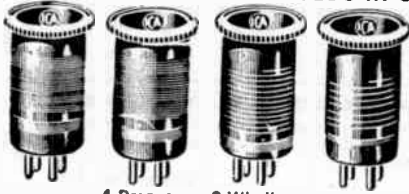
A sturdy coil shield made of aluminum with a detachable base.



No.	Dealer Cost
1539	2 1/2" x 3" High \$.36
1540	2 1/2" x 3 1/2" High \$.42
1549	3" x 3 1/2" High \$.45

# ICA INSULINE RADIO PRODUCTS ICA

## SHORT-WAVE AND BROADCAST PLUG-IN COILS

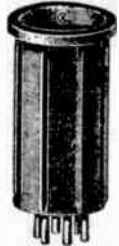


4 Prongs ... 2 Windings

Wound on Low-Loss Bakelite Forms. Diam. 1 1/4"; height 2 1/4". Rim handle for easy changing. Uniformly spaced winding. Used with either 140 or 150 mfd. tuning condenser.

No.	Dealer Cost
1471—Set of 4 short wave coils—from 9 1/2 to 217 Meters...	\$2.08
1473—Set of 2 Broadcast coils—190 to 550 Meters .....	1.65

## ICA LARGE LOW-LOSS "RIBBED" COIL FORMS



For use in 4, 5, and 6-prong sockets. Designed for easy grooving or threading. Size 3 1/2" x 1 1/2".

No.	Dealer Cost
1051—4-Prong .....	\$.36
1052—5-Prong .....	.36
1053—6-Prong .....	.39

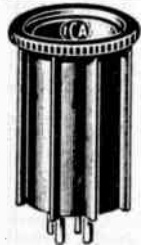
## ICA SMALL BAKELITE COIL FORMS



Equipped with special rim on top making it easy to insert and pull out of socket. Black Bakelite. Ridge is grooved for color coding.

No.	Dealer Cost
1108B—4-Prong.....	\$.27
1113B—5-Prong.....	.27
1114B—6-Prong .....	.27

## ICA TRANSMITTING COIL FORMS



Made of Low-Loss RX-47 Di-electric. Coil forms ribbed for air space winding. Knurled flange for easy handling. Supplied in standard bases, either 4, 5, or 6 prongs to fit standard sockets. Eight 1/4" ribs insure low-loss winding.

No.	Dealer Cost
2670—4-Prong .....	\$.60
2671—5-Prong .....	.63
2672—6-Prong .....	.66

## ICA SMALL RIBBED BAKELITE COIL FORMS

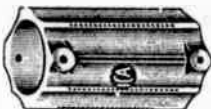


Rugged and durable, these coil forms are designed for long service. Measures 1 3/8" diameter, 2 1/4" high with molded ribs for low-loss winding and special rim on top. There is a recess in the rim to insert the ICA Round Labels to signify wave lengths.

No.	Dealer Cost
2158—4-Prong .....	\$.27
2159—5-Prong .....	.30
2160—6-Prong .....	.30

## ICA GROOVED INSULEX TRANSMITTING COIL FORMS

Particularly suited for winding low-loss inductors for Oscillators, R.F. Amplifiers, Short Wave Diathermy machines, etc. The forms are grooved to hold the turns in place and holes are provided for tapping at every other turn if desired. Raised bosses are provided for mounting supports. Grooved for 25 and 28 turns respectively with .148" spacing.



No.	Dealer Cost
2650—Without supporting legs .....	\$1.05
2651—Complete with mounting legs and hardware .....	1.44
For 80 and 160 Meters	
No.	Dealer Cost
2652—Without supporting legs .....	\$1.80
2653—With supporting legs .....	2.04

## INSULEX R.F. CHOKE COIL

HIGH FREQUENCY. Consists of four narrow sections each universally wound spaced on an Insulex form. Designed especially for high frequency receivers.

Low distributed capacity. Supplied with wire leads for mounting. May be mounted in grid leak clips.



No. 277  
Inductance  
2.5 M.H.  
D.C. Resist.  
32 ohms  
Current Cap.  
150 ma.  
Dir. Cost \$.33

## ICA INSULEX R.F. CHOKES

Can be used in any circuit or position. Designed particularly for short wave but equally effective over the broadcast band. Insulex forms are used with a special Radio Frequency Lacquer for impregnation and ample moisture proofing. Solder lugs for firm electrical and mechanical contacts.



No.	Inductance	D.C. Resis.	Current Cap.	Dealer Cost
1777	2.5	30	150	\$.40
1775	5.5	57	150	.50
1774	10	73	150	.53
1772	80	136	125	.60
1773	60	196	125	.76
1771	80	222	125	.83

## IRON CORE HIGH "Q" R.F. CHOKES



A high impedance choke coil with low distributed capacity winding on magnetic core, specially impregnated for high frequency purposes. Designed for minimum loss with smallest diameter and space requirements, and minimum D.C. resistance. Ideal for detector plate circuits and R.F. filtering systems in general.

No.	Ind. M.H.	D.C. Res. Ohms	Dealer Cost
6200	2.5	17	\$.79
6201	3.5	22	.86
6202	5.5	28	.89
6203	10	55	.89
6204	30	83	1.05
6205	60	142	1.29
6206	80	168	1.39
6207	125	214	1.72

## ICA TRANSMITTING R.F. CHOKES

Tapered Sections



Wound on Insulex low-loss core. Has a continuous universal winding in five tapered sections. Designed for maximum impedance in amateur bands from 160 meters downward.

No.	Ind. M.H.	Cur. Ma.	Res. Ohms	Dealer Cost
266	2.8	1000	5	1.82
267	5.3	600	12.5	1.65

## HEAVY DUTY TRANSMITTING CHOKES

Heavy duty transmitting chokes designed for durable service. Extremely low power loss and distributed capacity. Coils securely fastened.



No.	Ind. M.H.	Cur. Cap. Ma.	D.C. Res. Ohms	Dealer Cost
280	2.5	1000	5	\$1.65
278	5.6	600	12	1.49



# ICA INSULINE RADIO PRODUCTS ICA

## ICA SHAFT COUPLINGS AND EXTENSION RODS



### Brass Couplings and Reducers

No.	Length	Hole	O.D.	Dir. Cost
2105	3/4"	1/4" coupler	1/2"	\$.12
2106	3/4"	3/8" coupler	5/8"	.12
2107	3/4"	3/8" to 1/4" coupler	5/8"	.12
2111	1 1/4"	1/4" to 1/4" shaft	1/2"	.12
2112	1 1/4"	1/4" to 3/8" shaft	5/8"	.12
2113	1 1/4"	3/8" to 1/4" shaft	1/2"	.12

### ICA Fenoline Couplings and Reducers

No.	Length	Hole	O.D.	Dir. Cost
2116	3/4"	1/4" coupler	1/2"	\$.12
2109	3/4"	3/8" to 1/4" coupler	5/8"	.12
2110	1 1/4"	1/4" to 1/4" shaft	1/2"	.12

### Long Extension Couplings

Made of Brass with extra long extension.

No.	Length	I.D.	O.D.	Dir. Cost
2123	1 3/4"	1/4"	1/2"	\$.15

## ICA INSULATED BUSHINGS



Equipped with knurled nut that can be tightened easily. Used as insulated grommet on condenser shafts, panel bearing, etc.

No.	Color	Hole	Dir. Cost
670	Black	1/8" Hole, 3/8" Diam., 3/8" Long	\$.12
671	Red	1/8" Hole, 3/8" Diam., 3/8" Long	.12
672	Black	1/4" Hole, 1/2" Diam., 7/8" Long	.15
673	Red	1/4" Hole, 1/2" Diam., 7/8" Long	.15

## ICA BRASS EXTENSION RODS

No.	Length	O.D.	Dir. Cost
2117	6"	1/4"	\$.15
2118	12"	1/4"	.30

## FENOLINE EXTENSION RODS

No.	Length	O.D.	Dir. Cost
2120	6"	1/4"	\$.22

## ICA BAKELITE FLEXIBLE SHAFT COUPLING

Flexible phosphor bronze spring contact mounted on a round bakelite disc. 1 1/2" diam. Has 1/4" bushing.

No. 2142	Dealer Cost	\$.45
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## ICA INSULEX FLEXIBLE SHAFT COUPLING

Flexible phosphor bronze spring contact. Mounted on Insulex disc for efficient low-loss coupling. 1 1/2" diam. 1/4" bushing.

No. 2143	Dealer Cost	\$.54
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## ICA PANEL BEARING ASSEMBLY

Will fit on panels up to 1/8" thickness.

No. 1248	Overall length 8"	Dealer Cost	\$.24
No. 1249	Overall length 6"	Dealer Cost	.30
No. 1250	Bearings only	Dealer Cost	.12
No. D-71250	Display Card of 60 No. 1250	Dealer Cost	\$.60



## BAKELITE BUSHINGS

Molded bakelite bushings for complete insulation. Strong seamless threads. Heat resisting to 300°F. Complete with stamped lock nuts.

No.	Hole Size	Dealer Cost	No.	Hole Size	Dealer Cost
606	1/8"	\$.08	609	1/8"	\$.10
607	3/16"	.09	610 (2 holes)	3/16"	.11
608	1/4"	.10			



## ALUMINUM IDLER PULLEYS

Precision made. Distortion free. Non-warping. Permits closer tolerances. Supplied in any quantity in any type — with or without shoulders. Listed here are typical sizes without shoulders, hole diam. 12S".

No.	O.D.	Cord Diam.	Dir. Cost
601	3/8"	1/4"	\$3.00C
602	1/2"	1/4"	3.30C
603	3/4"	3/8"	3.60C
604	1"	1/2"	3.90C
605	3/4"	5/8"	4.20C



## BAKELITE AND FENOLINE TUBING

ICA tubing is strong mechanically, has extremely low electrical absorption and is highly resistant to moisture. Absolute perfection in winding of coils is assured by the use of ICA tubing—thus affording relief from complaints or failure in performance.

Finished in Natural and Black Colors  
Small sizes up to one inch in Black only.  
☆ Wall Thickness, Full Lengths.  
Approximately 36 to 48"



BAKELITE			FENOLINE		
No.	Dir. Cost Per Ft.	Size O.D.	No.	Dir. Cost Per Ft.	Size O.D.
100	\$.57	1/4"	161	\$.51	1/4"
101	.69	3/8"	162	.54	3/8"
102	.72	1/2"	163	.60	1/2"
103	.78	5/8"	164	.63	5/8"
104	.84	3/4"	165	.66	3/4"
105	.93	7/8"	166	.69	7/8"
106	.99	1"	167	.75	1"
147	1.05	1 1/8"	134	.69	1 1/8"
148	1.17	1 1/4"	135	.81	1 1/4"
149	1.23	1 1/2"	136	.84	1 1/2"
150	1.35	1 3/4"	137	.93	1 3/4"
151	1.50	2"	138	1.02	2"
152	1.62	2 1/4"	139	1.11	2 1/4"
153	1.89	2 1/2"	140	1.23	2 1/2"
154	2.10	2 3/4"	141	1.47	2 3/4"
155	2.40	3"	142	1.59	3"
156	2.52	3 1/4"	143	1.71	3 1/4"
157	2.70	3 1/2"	144	2.01	3 1/2"
158	2.70	3 3/4"			
159	3.30	4"			

## STOCK SIZES OF BLACK AND BROWN FENOLINE TUBING

Individual lengths tubing in following diam.: 1"; 1 1/4"; 1 1/2"; 1 3/4"; 2"; 2 1/4"; 2 3/4"; 3"; Wall thickness 1/16".

No.	Dealer Cost
2131—3" long—1" O.D. to 3" O.D.	\$.39
2132—4" long—1" O.D. to 3" O.D.	.48
2133—6" long—1" O.D. to 3" O.D.	.69

When ordering, specify exact diameter.

## SPECIAL LENGTH BAKELITE TUBING

Cut to Order — Wall Thickness to 1/16"  
Outside diameters range from 1" to 4". Prices on request. Other diameters and thicknesses quoted on request.

## ICA "INSULOID" RODS



Made of phenolic material of high electrical insulating properties and great tensile strength.

No.	Color	Size	Dir. Cost
2175	Black	12" x 1/4"	\$.27
2176	Black	24" x 1/4"	.48
2179	Black	12" x 3/8"	.35
2180	Black	24" x 3/8"	.72
2183	Black	12" x 1/2"	.48
2184	Black	24" x 1/2"	.96

## BAKELITE RODS FENOLINE RODS

Lengths of 18" to 24"

No.	Diam.	Dir. Cost Per Ft.	No.	Diam.	Dir. Cost Per Ft.
175	1/4"	\$.78	168	1/4"	\$.48
178	3/8"	.90	169	3/8"	.66
176	1/2"	1.08	170	1/2"	.84
177	3/4"	1.50			

## ICA SPAGHETTI TUBING

For No. 10 to No. 18 gauge wire. Guaranteed not to crack. Furnished in 30" lengths.

No.	Color	Dealer Cost per length
182	Red	\$.09
183	Yellow	.09
184	Brown	.09
185	Green	.09
186	Black	.09



## SMALL SIZE SPAGHETTI TUBING

200—Red	\$.09
201—Yellow	.09
202—Black	.09

## LARGE SIZE SPAGHETTI TUBING

Supplied in 36" lengths. Diameter 9/64" I.D. x 3/16" O.D.

No. 196—Supplied in black only	Dealer Cost—per length	\$.30
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## ICA GIANT SLEEVING

Made of high voltage insulation saturated cambric material. Inside diameter 3/8". For Insulating Resistors, Small Condensers, Wire Cables, Leads, etc. 36" lengths.

No. 198	Dealer Cost	\$.30
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## ICA FLEXIBLE SPAGHETTI TUBING

20 Foot Lengths



A flexible tubing, heavily varnished, in attractive colors. Average dielectric strength, 5000 volts. Will accommodate from No. 10 to No. 18 wires. Furnished in one length — 20 feet long on handy spools.

No.	Color	Dealer Cost
210	Red	Per Spool \$.75
211	Yellow	Per Spool .75
212	Brown	Per Spool .75
213	Green	Per Spool .75
214	Black	Per Spool .75

500 Foot Spools, spaghetti tubing, same grade and colors as above. Specify color per spool.  
No. 197.....Dealer Cost \$17.10

## RUBBER INSULATED GRID CAPS

For Transmitting Tubes

New improved type. Insulation made of special soft rubber over spring bronze.

For 866 Type Tubes

No. 870—With Leads	Dealer Cost	\$.22
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For Receiving Tubes

872—With 12" Lead	\$.15
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For New Metal Tubes

874—With 12" Lead	\$.15
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## FENOLINE INSULATED GRID CAPS

Improved type for standard and transmitting tubes. Sturdy cadmium plated brass clip. Furnished with 12" wire.

For 866 Transmitting Tubes	
No. 683—Black	Dealer Cost \$3.36

For Standard Glass Receiving Tubes with small caps

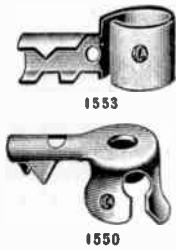
No. 680—Red	Dealer Cost	\$.15
No. 681—Black	Dealer Cost	.18



# ICA INSULINE ICA

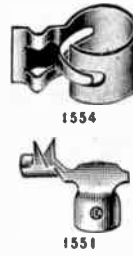
## RADIO PRODUCTS

### SPRING ACTION GRID CAPS



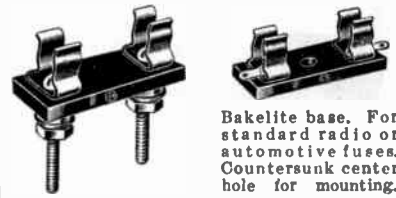
For all types of tubes. Positive contact. All grid caps are hot tinned ready for soldering.

No.	Dealer Cost
1550—For standard glass receiving tubes with small caps (.360 dia.)	\$7.50M
1551—For tubes with miniature caps (.250 dia.)	7.50M
1553—For glass tubes	.90C
1554—For glass tubes	.90C



### FUSE MOUNTINGS

Flush Type Mounting



Bakelite base. For standard radio or automotive fuses. Countersunk center hole for mounting.

Equipped with two soldering lugs.

No. 2340—Single pole	Dealer Cost \$ .12
No. 7201—Double pole	Dealer Cost .21

### Panel Type

Takes standard type radio—automotive fuse. Equipped with 6/32 screws for mounting on panels.

No. 2341—Single pole	Dealer Cost \$ .15
No. 7203—Double pole	Dealer Cost .24

### For AG 1" Long Type Fuse

No.	Dealer Cost
7202—For smaller type fuse. Bakelite base. 1 1/8" x 1/2" x 1/8" Flush Mount	\$ .12
7204—Double pole. 1 1/8" x 1" x 1/8" Flush Mount	.21
7205—Same as 7202, Panel Mount	.15
7206—Same as 7204, Panel Mount	.15

### ICA TERMINAL STRIPS



Made of 3/32" heavy black Bakelite, engraved in white. Terminals are brass cadmium plated.

No.	Terminals	Marking	Mtg. Ctrs.	Size	Dealer Cost
2420	2	Plain	1 1/2	7/8 x 2 1/4	\$.11
2419	2	A & G	1 1/2		.11
2418	2	Output	1 1/2		.11
2417	2	Input	1 1/2		.11
2414	8	Plain	2	7/8 x 2 3/4	.16
2415	8	1, 2, 3	2		.18
2413	4	Plain	2 1/2	7/8 x 3 3/4	.22
2408	4	1, 2, 3, 4	2 1/2		.24
2405	5	Plain	3	7/8 x 4	.27
2406	5	1, 2, 3, 4, 5	3		.30
2404	6	Plain	3 1/2	7/8 x 4 3/4	.32
2402	6	1, 2, 3, 4, 5, 6	3 1/2		.36
2412	7	Plain	4	7/8 x 5 1/4	.38
2411	7	1, 2, 3, 4, 5, 6, 7	4		.42
2410	8	Plain	4 1/2	7/8 x 5 3/4	.43
2409	8	1, 2, 3, 4, 5, 6, 7, 8	4 1/2		.48
2424	9	Plain	5	7/8 x 6 3/4	.48
2423	9	1, 2, 3, 4, 5, 6, 7, 8, 9	5		.54
2422	10	Plain	5 1/2	7/8 x 7	.54
2421	10	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	5 1/2		.60

### BAKELITE TERMINAL MOUNTING STRIPS



Type A

Mounting tie strips for fastening Resistors, Condensers, etc. Mounting Lug hole diameter .140". Type A shows non-ground mounting lug. Type B shows combination grounding-mounting lug:



Type B

No.	Type	Terminals	Mtg. Centers	Mounting Lugs	Dealer Cost
2434	A	1	One Hole	1	\$2.00C
2455	B	1		1	2.00C
2435	A	2	1	2.70C	
2456	B	2	1	2.70C	
2436	A	3	1 1/2	2	4.75C
2457	B	3	1 1/2	2	4.75C
2437	A	4	1 3/4	2	5.75C
2458	B	4	1 3/4	2	5.75C
2438	A	5	2 1/4	2	6.75C
2459	B	5	2 1/4	2	6.75C
2439	A	6	1 7/8	2	8.50C
2460	B	6	1 7/8	2	8.50C
2440	A	7	1 1/2	2	9.25C
2461	B	7	1 1/2	2	9.25C
2441	A	8	1 3/8	2	10.50C
2462	B	8	1 3/8	2	10.50C



No. 2425—Terminal Lugs only (less screws)	Dealer Cost \$3.60C
No. 2426—Terminal Screws, 3/8" long	Dealer Cost .90C



### Terminal Strip Offset Mounting Bracket

For more rigid mounting of terminal strips. Mounting hole for No. 6 screw.

No. 2430...Dir. Cost \$1.50C

### Terminal Strip Offset Mounting Bracket and Lug Combination

For sturdy mounting of terminal strips. Affords solder connection for ground. Mounting hole for No. 6 screw.

No. 2431...Dir. Cost \$1.50C



### BAKELITE TERMINAL STRIPS

Brown bakelite 1/16" thick. Suitable light duty radio work, experimental purposes, etc.



No.	Terminals	Mtg. Ctrs.	Dir. Cost
2520	2	1 1/8	\$.08
2521	3	1 3/8	.10
2522	4	2 1/8	.13
2523	5	2 3/8	.15
2524	6	3 1/8	.18
2528	Terminal Lug & Screw only.....3.00C		



### TWIN JACK STRIP

With two terminals. Takes standard phone tips. Base width 1 1/8". 1 1/8" between mounting holes.

No. 2443	Dealer Cost \$ .15
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### TERMINAL LUGS



No.	Dir Cost
2444	\$.50C
2445 # 6 Hole	1.00C
2446	.65C
2447	1.00C
2463	1.45C
2448 # Hole—Combination	1.00C
2638 # 8 Hole—Combination	1.00C

### SPECIAL TERMINAL PANELS

Special type terminal strips with terminals in any required position including "Z" bracket type. Made to specifications. Send us your print.

# ICA INSULINE RADIO PRODUCTS

## FILTERVOLT NOISE FILTER

An efficient filter for disturbances caused by electrical appliances. For use with any all-wave or broadcast receiver.

Rated conservatively at 250 watts for 32, 110 and 220 volt AC or DC circuits. Can be installed either at the radio or at the source of disturbance.

Contains heavy duty R.F. chokes, large filter capacitor, and has a "PI" Filter circuit arrangement.

No. 338.....Dealer Cost \$4.50

## ICA FILTERVOLT

Improves extremely noisy radio reception due to inter-ruptions in power line caused by electrical appliances, lights, etc.

No. 394  
Dealer Cost \$2.70



## DUPLEX FILTERVOLT

Eliminates Radio Noises Caused By—

- Electric Shavers
- Refrigerators
- Fans ● Elevators
- Motors, etc.



Unit is equipped with Dual outlet, both sides being filtered for noise elimination. Packed 25 to a standard carton.

No. 90.....Dealer Cost \$1.05

## UNIVERSAL VOLTAGE REGULATOR

Voltage fluctuation often occurs not gradually but suddenly, thus bringing a tremendous strain on the tubes. This regulator protects tubes through scientific regulation of current fluctuations. Housing body and end rings are neatly constructed and of perforated japanned metal. For all Radio Sets, AC, DC.



No. 92.....Dealer Cost \$1.05

## ICA 3-IN-1 RADIO TUNER



Functions as either an Antenna Tuner, Wave Trap, or Aerial Eliminator. Operates on any make or model radio set.

As an Antenna Tuner, it will improve the reception of a weak station. As a Wave Trap, it will separate interfering stations and improve selectivity. As an Aerial Eliminator, it makes unnecessary the outdoor aerial. Easily installed within a few minutes.

No. 93.....Dealer Cost \$60  
Complete with Instructions.

## ICA DELUXE SIGNA-TONE

AUDIO OSCILLATOR — CODE PRACTICE SET — KEYING MONITOR

The ICA Signatone is a perfected Audio Oscillator, having 3 different output frequencies and a continuously variable volume control. The Audio notes are similar to those of high quality commercial CW stations.

1. CODE PRACTICE SET—A number of phones and keys may be connected for intercommunication or for classroom or radio club instruction in code.
2. KEYING MONITOR—An invaluable aid in improving any ham's "fist". Will follow the "bug" at all speeds. No well-equipped station should be without this keying monitor.



No. 4300



No. 4301

3. MODULATION SIGNAL—The steady note of the Signatone is ideal for adjusting both the Modulator and modulated stages of your transmitter for a maximum modulation percentage of not over 100.

4. SIGNAL TRACER—By feeding the output of the Signatone into each stage of your modulator and listening to the output of that stage, defects and "bugs" can easily be located. Complete with tube and self-contained speaker, for 110 V AC-DC.

No. 4300—\*Dealer Net Cost .....\$13.50

No. 4301—Classroom Model (No Speaker)—Dealer Net Cost..... 11.50

## ICA EAR PHONES

Complete With Head Bands

Made of molded Bakelite and light-weight nickel-plated metal. 2000 ohms.



No. 23—Double Head Phone..Dealer Cost \$2.70

## EAR CUSHIONS

Made of soft rubber. Ideal for the amateur wireless operator, etc. Used by all leading air lines.



No. 195.....Dealer Cost \$.75 pr.

## DOUBLE PHONE CORDS



No. Dealer Cost

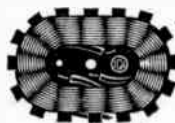
192—Tips on both ends.....\$.57

193—Spades on one end, tips on other.... .57

## ICA TENNA-SCOPE LOOP

For Midgets or Portables

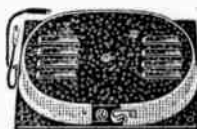
Eliminates necessity of outdoor or indoor antenna. Replaces the antenna coil in portable or midget sets. Easily assembled.



No. 4385.....Dealer Cost \$.75

## ICA TENNA-SCOPE

A new style built-in tuned radio antenna. Easily connected. Eliminates use of outside aerial and ground. Features: Better selectivity — Higher signal to noise ratio — Easily connected, no soldering.



No. 438D.....Dealer Cost \$1.80

## ICA UNBREAKABLE MORSE CODE RECORDS

Learn the International Morse Code Quickly, Easily — Uses EYE - EAR Method. The Complete Linguaphone Code Equipment consists of 5 Double-faced, electrically transcribed records in durable album. Contents: 3 Tables, 10 Lessons.



No. 1800—Complete .....Dir. Cost \$10.00

No. 1800R—Record only Dir. Cost ea. 1.95

No. 1800B—Booklet only Dir. Cost ea. .90

## ICA "TRIPLEX"

Radio & Telegraph Code Practice Set  
Blinker Light  
Radio Signal—Telegraph

No. Dir. Cost

70—Single Unit (less batteries) .....\$1.95

71—Double Unit (50 ft. wire) ..... 4.11



## ICA RECORD-PLAYER SWITCH

Replacement for RCA Switch 9824A



Recommended for quickly connecting Record Players, F.M. attachments, Television attachments, Microphones and similar devices into the audio amplifier of existing radio receivers.

No. 1740.....Dealer Cost \$1.35

## RESISTOR CORDS

A series of replacement resistor cords for practically all AC-DC requirements.



No.	Resistance-Ohms	Dir. Cost
513	185	\$.76
514	180	.76
515	190	.76
516	220	.76
517	290	.76
518	340	.76
519	640	.83

## UNIVERSAL RESISTOR CORD

Replacement Resistor Cord for all makes receivers. From 22 to 330 ohms on one cord. Instructions with each cord.

No. 205.....Dealer Cost \$1.13

# ICA INSULINE ICA

## RADIO PRODUCTS

### RADIO HARDWARE



ICA offers a wide variety of radio hardware items suitable for practically any use in the radio-electronic and allied fields. ICA hardware is offered in standard package quantities or in handsome glass display jars for convenient storing.



quantities or in handsome glass display jars for convenient storing.

#### ROUND HEAD MACHINE SCREWS NICKEL-PLATED

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
—	—	5504	1000	2-56 x 1/4" long	\$3.75M
5000	100	5500	1000	4-86 x 1/4" long	3.00M
5001	100	5501	1000	4-86 x 1/2" long	3.80M
5002	75	5502	1000	4-86 x 3/4" long	4.00M
5007	90	5507	1000	6-32 x 1/4" long	4.00M
—	—	5511	1000	6-32 x 1/2" long	4.00M
5008	80	5508	1000	6-32 x 3/4" long	4.25M
5009	70	5509	1000	6-32 x 1" long	4.80M
5010	60	5510	1000	6-82 x 1/4" long	5.75M
5014	75	5514	1000	8-82 x 1/8" long	4.35M
5015	70	5515	1000	8-82 x 1/4" long	5.00M
5017	40	5517	1000	8-82 x 1" long	6.50M
5022	60	5521	1000	10-82 x 1/2" long	6.50M

#### BINDING HEAD MACHINE SCREWS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
—	—	5546	100	6-82 x 1/4" long	\$.90C
5030	80	5547	100	6-82 x 3/4" long	.90C
5031	75	5548	100	6-82 x 1" long	.90C

#### OVAL HEAD MACHINE SCREWS NICKEL PLATED

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5042†	40	5710†	100	10-82 x 3/4" long	\$.80C-\$7.20M

†For Transmitting Racks.

#### PARKER-KALON SELF-TAPPING SCREWS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
—	—	5562	1000	No. 8 x 1/4" long	\$1.00C
5051	50	5555	1000	No. 4 x 1/2" long	1.10C
5052	50	5556	1000	No. 6 x 1/2" long	1.10C
5053	45	5557	1000	No. 6 x 3/4" long	1.50C
5054	40	5558	1000	No. 7 x 1/2" long	1.75C
5055	85	5559	1000	No. 10 x 3/4" long	2.00C

#### ESCUTCHEON PLATE SCREWS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5182	100	5677	1000	No. 1 x 1/4" long	\$10.00M

#### FLAT STEEL PLATED WASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5090	100	5595	1000	For No. 6 Screw	\$1.75M
5091	100	5596	1000	For No. 8 Screw	1.75M
5092	100	5597	1000	For No. 10 Screw	1.75M
5093	100	5603	1000	For 1/4" Screw	3.25M
—	—	5607	1000	For 3/8" Screw	3.75M

#### EVERLOCK LOCK WASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5085	100	5592	1000	For No. 6 Screw	\$.45C-3.00M
5086	90	5593	1000	For No. 8 Screw	.50C-3.50M
5087	80	5594	1000	For No. 10 Screw	.55C-3.75M

#### KANTLINK SPLIT TYPE LOCKWASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5080	125	5589	1000	For 6-82 Screw-1/4" thick	\$3.00M
5081	125	5590	1000	For 8-82 Screw-1/4" thick	3.00M
5082	100	5591	1000	For 10-82 Screw-1/4" thick	3.00M
5083	75	5602	1000	For 1/4-82 Screw-1/4" thick	4.00M

\*All JARS ARE \$.45 each, DEALER COST. BULK QUANTITIES AS SHOWN. ORDER BY Cat. No.

#### FLAT FIBRE WASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5100	125	5601	1000	Diam. 1/4" Thick. 3/8" Hole	\$3.75M
—	—	5612	1000	1/2" Thick. 1/2" Hole	4.35M
5102	90	5609	1000	3/8" Thick. 3/8" Hole	4.80M
—	—	5626	1000	1/2" Thick. 1/2" Hole	4.50M
5101	100	5605	1000	3/8" Thick. 3/8" Hole	4.50M
5104	50	5610	1000	1/2" Thick. 1/2" Hole	4.80M
5105	50	5611	1000	3/8" Thick. 3/8" Hole	5.85M

#### FIBRE SHOULDER WASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
—	—	5618	100	Overall Diam. 1/4" Shoulder Diam. 1/8" Overall Hgt. 1/8"	\$.75C-5.10M
5111	50	5620	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.75C-6.00M
5110	60	5615	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.75C-5.10M
5114	60	5619	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.75C-6.00M
5115	40	5616	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.81C-6.60M
5112	60	5624	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.81C-6.60M
5113	60	5628	100	1/4" Overall Diam. 1/8" Shoulder Diam. 1/8" Overall Hgt.	.96C-7.20M

#### CUP WASHERS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5212	45	5712	100	Hole Size No. 8	\$.45C-3.30M
5213	20	5713	100	Hole Size No. 10	.48C-3.30M

#### STEEL HEXAGON NUTS — NICKEL PLATED

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5070	100	5572	1000	4-86 x 1/4"	\$4.00M
—	—	5573	1000	4-86 x 1/2"	4.00M
5074	80	5577	1000	6-32 x 1/4"	4.85M
5071	90	5576	1000	6-32 x 1/2"	5.00M
5072	80	5580	1000	8-32 x 1/4"	5.00M
5073	50	5584	1000	10-82 x 3/8"	5.75M
5075	12	5583	1000	1/4-20 x 1/2"	\$.95C
—	—	5579	1000	1/4-82 x 3/8"	.80C
5076	10	5575	1000	3/8-82 x 1/2"	2.25C

#### BRASS HEXAGON NUTS — NICKEL PLATED

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
—	—	5564	100	4-86 x 1/4"	\$.60C-\$4.75M
—	—	5566	100	6-32 x 1/4"	.90C-7.50M
—	—	5567	100	6-32 x 1/2"	.90C-7.50M
—	—	5570	100	8-32 x 1/4"	1.05C-9.00M
—	—	5574	100	3/8-82 x 1/2"	1.50C-13.50M

#### RACK SCREW AND WASHER ASSORTMENT

Packed in ICA handy jars. Includes 20 Oval Head Screws (10-82 x 3/4") and 20 Cup Washers (10-82).

No. 5210.....Dealer Cost \$.39

#### BRASS EYELETS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Diam. Shank	Length	Bulk Dir. Cost
5172	80	5672	1000	.115	1/4"	\$6.00M
5171	90	5671	1000	.125	1/4"	5.70M
5170	100	5670	1000	.132	1/4"	5.10M

#### NICKEL PLATED TUBULAR STEEL RIVETS

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Diam. Shank	Length	Bulk Dir. Cost
—	—	5730	1000	1/8"	1/2"	\$4.80M
5160	100	5663	1000	1/8"	1/2"	4.80M
5161	80	5664	1000	1/8"	3/4"	6.00M
5162	70	5665	1000	1/8"	1/2"	6.30M

#### STEEL CABLE CLAMPS, PLATED

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5200	35	5697	1000	Length 3/4" Diam. Bend 1/8"	\$1.00C
5201	30	5698	1000	1/2" Length 1/8" Diam. Bend 1/8"	1.15C

#### NICKEL PLATED SPRING CLIP

Jar* Cat. No.	Qty.* Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Description	Bulk Dir. Cost
5190	40	5691	100	Width 1/8" Length 1 1/2"	\$1.25C
5191	40	5692	100	1/8" Width 1 1/2" Length 1 1/2"	1.35C
5192	80	5693	100	1/8" Width 1" Length 1 1/2"	1.60C

# ICA INSULINE ICA

## RADIO PRODUCTS

### ICA RADIO HARDWARE



#### ICA FLEXIBLE RUBBER GROMMETS

Jar* Cat. No.	Qty. Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	(3) Hole Size	(1) O.D.	(2) Thick-ness	(4) Slot	(5) Mtg. Width	Bulk Dir. Cost
5120	15	5633	100	1/8"	1/2"	3/16"	3/16"	1/2"	\$2.60C
5121	12	5634	100	3/16"	5/8"	1/4"	1/4"	3/4"	2.75C
5122	15	5635	100	1/4"	3/4"	1/4"	1/4"	3/4"	2.85C
5123	12	5639	100	3/8"	1"	1/4"	1/4"	3/4"	2.15C
5125	10	5637	100	1/2"	1 1/8"	1/4"	1/4"	3/4"	2.40C
—	—	5641	100	3/8"	1"	1/4"	1/4"	3/4"	5.90C
—	—	5642	100	1/2"	1 1/8"	1/4"	1/4"	3/4"	2.75C
5127	12	5687	100	3/8"	1"	1/4"	1/4"	3/4"	2.75C

### BRASS TINNED TERMINAL LUGS

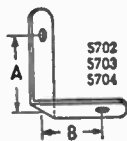


Jar* Cat. No.	Qty. Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Length	Hole Size	Bulk Dir. Cost
—	—	5645	100	1 1/2"	No. 8	\$ .60C-\$4.75M
—	—	5654	100	1 1/2"	No. 6	.70C- 5.75M
5135	125	5646	100	1 1/2"	No. 6	.55C- 5.00M
—	—	5656	100	1 1/2"	No. 6	.55C- 5.00M
5136	100	5647	100	1 1/2"	No. 10	.75C- 6.00M
5137	75	5649	100	1 1/2"	No. 8	.80C- 6.50M
5141	75	5648	100	1 1/2"	No. 8	.75C- 6.00M
—	—	5655	100	1 1/2"	No. 8	.80C- 6.50M
—	—	5653	100	1 1/2"	No. 6	.70C- 5.50M
5138	100	5650	100	1 1/2"	No. 8	.75C- 6.00M
5139	75	5651	100	1 1/2"	No. 10	.95C- 8.00M
5140	50	5652	100	1 1/2"	No. 8	1.25C-11.00M



#### ANGLE BRACKETS

†One Hole Tapped — One Plain.  
‡One Slot — One Hole.



5705

Jar* Cat. No.	Qty. Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	A	B	Width	Bulk Dir. Cost
5205	16	5702	100	1 1/2"	1 1/2"	1 1/2"	\$1.75C
5206	15	5703	100	1 1/2"	1 1/2"	1 1/2"	1.85C
5207	25	5704	100	1 1/2"	1 1/2"	1 1/2"	3.00C
—	—	5705	100	1 1/2"	1 1/2"	1 1/2"	3.25C
—	—	5706	100	1 1/2"	1 1/2"	1 1/2"	1.60C
—	—	5707	100	1 1/2"	1 1/2"	1 1/2"	2.25C

#### PILOT LIGHT CONTACT



For making center connection inside pilot light socket.

No. 2465  
Dealer Cost \$4.00M

#### ICA UTILITY GLASS JARS

For use on service bench to store hardware, etc. 2 1/2" high x 1 1/2" deep.  
No. 5400  
Dealer Cost \$.07



### EVERLOCK TERMINAL LUGS



Jar* Cat. No.	Qty. Each Jar	Bulk Cat. No.	Qty. Bulk Pkge.	Length	Hole Size	Bulk Dir. Cost
5483	—	5480	100	1 1/2"	No. 6	\$1.25C-11.00M
5484	50	5481	100	1 1/2"	No. 4	1.15C-10.00M
5482	60	5482	100	1 1/2"	No. 4	1.00C- 8.50M
5147	55	5483	100	1 1/2"	No. 6	1.00C- 8.50M
5148	50	5484	100	1 1/2"	No. 8	1.00C- 8.50M

### DISPLAY "SALESMAN" MERCHANDISING OF HARDWARE AND RADIO ESSENTIALS



With this ICA display assortment you can now sell hardware in a packaged form. This assortment includes — all sizes Round Head Machine Screws — Nickel plated nuts to match — Parker-Kalon self-tapping screws — Kant-Link lock washers — Shake-Proof washers — plain washers — flat fibre washers — flexible grommets — lugs — eyelets — rivets — escutcheon plate screws — midret fuse clips — spade bolts — spring clips — clamps — angles — rack screws — and washers, etc.  
EACH ITEM INDIVIDUALLY PACKED IN A GLASS DISPLAY JAR. Each jar contains an ample quantity of individual type and size hardware used by dealers, servicemen and amateurs. A complete radio hardware assortment, beautifully put up in these jars and stacked in a handsome durable metal rack which holds 86 jars.  
No. 5275—DISPLAY RACK—Contains 86 jars. A representative assortment of radio hardware, such as screws — nuts — bolts — washers — grommets, etc..... Dealer Cost \$14.04  
No. 5276—DISPLAY RACK—Contains 86 jars. A representative assortment of radio hardware and essentials such as fibre washers — lugs — metal washers — grommets — spring clips — fuse clips — angle brackets, etc..... Dealer Cost \$14.04  
No. 5405—METAL DISPLAY AND UTILITY RACK—Consists of 4 shelves for storing 86 hardware jars — small parts and miscellaneous items. Measures 12" high by 17 1/2" wide by 8" deep. Dealer Cost \$3.30

#### EVERYMAN'S 1000-PIECE RADIO HARDWARE ASSORTMENT

An assortment of hardware commonly used by dealers, servicemen, amateurs, experimenters, etc. Contains 1000 pieces of assorted machine screws — wood screws — nuts — bolts — rivets — eyelets — lugs — lock washers — rubber grommets, etc.

No. 5250...Dir. Cost \$1.80



#### ICA ALL-PURPOSE RADIO HARDWARE AND ESSENTIAL EQUIPMENT

Packed in a handy indestructible metal utility case.

This De Luxe assortment includes such items as knob set screws — escutcheon screws — Parker-Kalon self-tapping screws — rubber grommets — screws — nuts, etc.

No. 5251... Dealer Cost \$3.50



#### ICA ANGLE AND BRACKET ASSORTMENT

A complete assortment of 30 popular angles and brackets, nickel plated finish.

No. 5800..... Dealer Cost \$5.55

#### ICA RUBBER GROMMET ASSORTMENT

Assortment contains popular sizes used in Radio and Electrical Work.

No. 5810..... Dealer Cost \$5.55

Contains 28 Rubber Grommets

No. 5811..... Dealer Cost \$1.10

Contains 60 Rubber Grommets

#### ICA FIBRE WASHER ASSORTMENT

A representative assortment of fibre washers both plain and shoulder, to fit all popular size screws and bolts.

No. 5805..... Dealer Cost \$5.55

Contains 100 assorted washers

#### ICA MASTER SCREW AND NUT ASSORTMENT

Contains a substantial quantity of all the popular sizes machine screws, wood screws, Parker-Kalon self-tapping screws and nuts to match.

No. 5252..... Dealer Cost \$4.00

\*All JARS ARE \$.45 each, DEALER COST. BULK QUANTITIES AS SHOWN. ORDER BY Cat. No.

# ICA INSULINE RADIO PRODUCTS



## ICA INSULATED AND BRASS SPACERS AND BUSHINGS

Used for raising sub panels, chassis, condensers, etc. For manufacturers, experimenters and laboratory use.

### Made of High Quality Brass

No.	Diameter	Length	Dealer Cost per C
5760	1/8"	1"	\$4.00
5761	1/8"	1 1/2"	4.50
5762	1/8"	2"	4.90
5763	1/8"	2 1/2"	5.75
5767	1/8"	1"	7.50
5764	1/8"	1 1/2"	5.00
5765	1/8"	1 1/2"	5.50
5766	1/8"	1"	7.00
5768	1/8"	1"	9.00

### Made of Fenoline Insulation

5775	1/8"	1"	3.50
5776	1/8"	1 1/2"	4.00
5777	1/8"	1 1/2"	4.50
5778	1/8"	1 1/2"	5.50
5782	1/8"	1"	6.50
5779	1/8"	1"	4.00
5780	1/8"	1"	5.00
5781	1/8"	1"	6.00
5783	1/8"	1"	7.50

### Threaded Brass Bushings—1/4" Diameter

5785	for 6/32 screw	1/4"	4.25
5786	"	1/2"	5.00
5787	"	3/4"	5.75
5788	"	1"	6.50
5794	"	1"	8.25
5790	for 8/32 screw	1/4"	5.50
5791	"	3/4"	6.50
5792	"	1"	7.50
5795	"	1"	9.00



### Molded Bakelite Spacer Bushing

No.	Dealer Cost
2365—Suitable for either spacer or bushing. With brass eyelet.	\$2.50C
2366—Same as above, without eyelet.	1.75C

### SPACER AND BUSHING ASSORTMENTS Brass and Insulated



Assortment of 25 spacers and bushings in 1/4" & 3/8". Diameters from 1/8" to 3/8". Ideal for raising sub panels, chassis, etc.

No.	Dealer Cost
5260—Insulated Assortment	\$1.25
5261—Brass Assortment	1.25
<b>Threaded Brass Bushing Assortments</b>	
5262—16 Assorted Brass bushings. Threaded for 6/32 from 1/4" to 3/4" lengths	1.25
5263—16 Assorted Brass bushings. Threaded for 8/32 from 1/4" to 3/4" lengths	1.25

## MAST ANTENNAS FOR STANDARD RECEPTION

DE LUXE WINDOW ANTENNAS  
8 Feet—12 Feet



3 Section Telescopic Antenna Opens to 96"  
No. 4527B ..... Dir. Cost \$2.67  
No. 4529—3 sec., opens to 75" Dir. Cost 1.95  
10 to a Standard Carton—Weight 14 lbs.

### 4 Section Extra Long Window Antenna 12 Feet Long

Ideal for DX Reception and Rural Sections where extra length is needed for best results.  
No. 4513 ..... Dealer Cost \$4.05

## HOME ANTENNAS 12 Feet—4 Sections

Made of Admiralty Brass—Guaranteed Rust Proof



Ground Wire, Brackets, Lightning Arrestor, Screws, Insulators, etc.

No. 4516 ..... Dealer Cost \$4.17  
10 to a Standard Carton—Weight 33 lbs.

Made of Admiralty Brass with Beautiful Nickel-Plated Finish

- For Homes, Apartments, Hotels, Office Buildings, and places where it is inconvenient to install outdoor aerials or to improve reception on indoor installations.
- Quickly and easily installed.
- Adjustable Bracket at base, permits the antenna to be focused in any position for best reception.
- Furnished completely assembled with mounting flange, insulator and lead-in strip.

Individually boxed.

- The Latest Type Home Antenna suggested by leading Radio Set Manufacturers for best results.
- Eliminates unsightly and dangerous wires.
- Clear, noise-free reception with no power line interference.
- Very sturdy construction—made of Admiralty Brass with Beautiful Nickel-Plated Finish.
- Guaranteed Rust-proof for the Life of Antenna.
- Universal Bracket allows permanent and convenient installation on soil pipe, window pipe, chimney, roof, gables, cornices, wall copings, etc.
- Individually boxed.

Vertical Mast with all accessories for Universal Mounting— including Lead-in Wire.

## ANTENNAS Television • Auto Radio

Since 1927 Insuline Corporation of America has been pioneering in the development of antenna of all types. Consult other pages for ICA's complete line of TELEVISION and AUTO RADIO ANTENNAS, offering the maximum in reception performance.

## ICA AERIAL KITS



Carries all the essentials for complete antenna installation, packed in handsome 2-color box. Includes:

50 ft. heavy 7 strand copper aerial wire, 24 gauge—30 ft. stranded copper, insulated weatherproof, lead-in wire—10 ft. ground wire, 22 gauge—Ground Clamp—Lead-in Strip—Underwriters' Approved Lightning Arrestor—2 Porcelain Insulators—2 Nail-it Knobs.

No. 654 ..... Dealer Cost \$1.95

### SPECIAL KIT

Includes the following aerial kit elements:  
50 ft. heavy 7/24 copper aerial wire  
—30 ft. stranded copper insulated weatherproof lead-in wire—10 ft. No. 22 Ground wire. 2 Porcelain insulators—Ground Clamp—Lead-in strip—Lightning arrester.  
No. 653 ..... Dealer Cost \$1.70

### CAPITALIZER KIT

Includes the following components:  
100 ft. 7/26 aerial wire—30 ft. insulated lead-in wire—lightning arrester—2 Porcelain insulators—Ground Clamp—Lead-in strip.

No. 651 ..... Dealer Cost \$1.09

### JUNIOR KIT

A utility kit for high-grade performance. Includes:

100 ft. 7/26 aerial wire—30 ft. insulated lead-in wire—2 Porcelain insulators—Ground Clamp—Lead-in strip.

No. 649 ..... Dealer Cost \$0.90

### PORCELAIN INSULATOR



Glazed porcelain insulator that will not crack or absorb moisture. Offers highest measure of strain safety.

No. 227  
Dealer Cost \$0.07

### LIGHTNING ARRESTER



Black porcelain, measures 3 3/4" in length. Non-grounding and weather-proofed. Individually packed.

No. 336  
Dealer Cost \$0.24

### GROUND CLAMP

For a quick but firm connection to ground rod or pipe of varying diameters from 3/8" to 2 1/4". Equipped with adjustable screw and convenient clip for fast contact.



No. 223 ..... Dealer Cost \$0.08

### WINDOW LEAD-IN STRIP



Flexible metal strip, 1/2" wide, with Duco varnished covering. Fully insulated. Convenient clips soldered to ends.

No. 1504 ..... Dealer Cost \$1.12

# THE NEW IMPROVED JFD REMOTE-O-CABLE REPLACER

The Most Efficient Auto  
Radio Tuning Cable-  
Servicing Machine  
in Use Today!

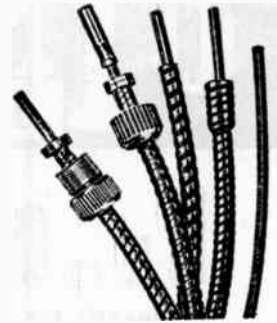
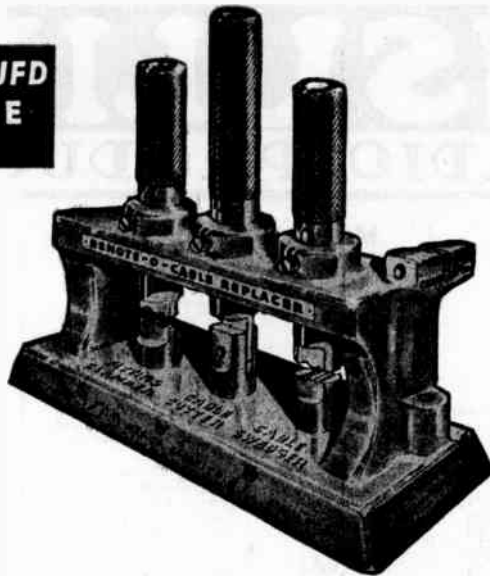
Completely redesigned to meet MOD-ERN Servicing requirements, the NEW JFD REMOTE-O-CABLE REPLACER is a vital necessity in the workshop of every auto-radio serviceman.

1. SWEDGES SHAFTING TO PREVENT UNRAVELLING.
2. CUTS SHAFTING TO EXACT LENGTH.
3. REPLACES OLD FITTINGS ON NEW SHAFTING.
4. CASING GROOVE MAKES CUTTING EASY.

ANY JOB PROMPTLY DONE AND DELIVERED—The Remote-O-Cable Replacer + 50 feet of shafting and casing + an assortment of fittings and you are fully equipped.

USE OLD FITTINGS ON NEW SHAFTING—No need to wait for special lengths or odd fittings.

NO DELAY—Shafting of any length immediately available.



**SERVICEMEN'S  
NET COST  
\$67.52**

Size: Length, 10½". Width, 4¼". Height, 13". Weight, 29¼ lbs.

NO LOSS OF HEADS OR SHAFTING—Shafting of any make radio immediately changed to fit any dashboard head.

FRONT—REAR—ANYWHERE—Radio control in any part of the car.

EXACT LENGTH OF SHAFTING DOES IT—Maximum tuning efficiency.

## AUTO RADIO CONTROL SHAFTING AND CASING

### UNSWEDGED "LIVE" SHAFTING

Type CB  
.130 gauge  
\$0.20 per ft. List  
Type CA  
.150 gauge  
\$0.23 per ft. List

### NON-RAVELLING DEAD SHAFTING

Type CD  
.130 gauge  
\$0.20 per ft. List  
Type CC  
.150 gauge  
\$0.26 per ft. List

### CASING FOR ALL SHAFTINGS

Type HB  
.130 gauge  
\$0.18 per ft. List  
Type HA  
.150 gauge  
\$0.23 per ft. List

## AUTO RADIO CONTROL SHAFTING AND CASING CUT TO LENGTH

.130 CABLE AND CASING — List Prices

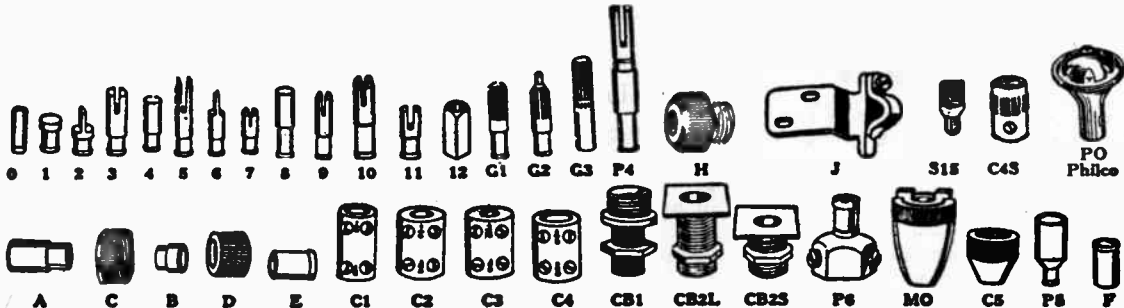
	18"	24"	30"	36"	42"	48"
Shafting only CB .130 Gauge	\$0.50	\$0.60	\$0.71	\$0.81	\$0.92	\$1.02
Casing only HB for .130 Gauge	.50	.60	.71	.81	.92	1.02
Shafting & Casing Complete CB HB .130	1.00	1.20	1.42	1.62	1.84	2.04

.150 CABLE AND CASING — List Prices

	18"	24"	30"	36"	42"	48"
Shafting only CA .150 gauge	\$0.67	\$0.70	\$0.84	\$0.96	\$1.10	\$1.22
Casing only HA for .150 gauge	.67	.70	.84	.96	1.10	1.22
Shafting & Casing Complete CA HA .150	1.14	1.40	1.68	1.92	2.20	2.44



## Auto Radio Tuning Cable Fittings Gear & Couplers



Nos. 0, 1, 7, B, E.....Lots of 20 @ \$0.10 ea. List  
Nos. C, D .....Lots of 20 @ .10 ea. List  
Nos. 2, 4, 8, 11, F.....Lots of 20 @ .10 ea. List  
Nos. 3, 5, A .....Lots of 20 @ .13 ea. List

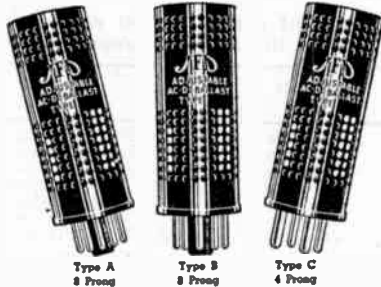
Nos. 6, 9, 10, 12, C1, C2, C3, C4, C5, J, S15  
Lots of 10 @ \$0.20 ea. List  
Nos. C4S, CB1, CB2L, CB2S, P5, P6.....Lots of 5 @ .33 ea. List  
Nos. M0130, M0150.....Lots of 10 @ .30 ea. List  
Nos. G1, G2, G3, P4, H, PO.....Lots of 5 @ .25 ea. List



# Improved • Air-Cooled AC-DC Adjustable Ballasts



**Just**  
**3 Adjustable Ballasts**  
Replace Over **3000**  
Exact Duplicate AC-DC Resistance Tubes!

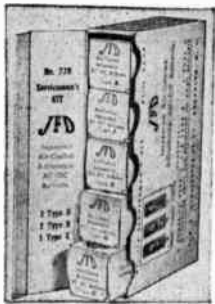


**JFD IMPROVED AIR-COOLED ADJUSTABLE AC-DC BALLASTS HAVE THESE IMPROVEMENTS:**

1. Air-Cooled Perforated Shell
2. Larger Insulating Surface
3. Longer Life, Heavier Resistance Wire
4. Exact Adjustments made

**LIST PRICE \$1.50 ea.**

Over 3,000,000 JFD Adjustable Ballasts have been sold since 1934 — practically every one still in use, giving service and satisfaction.



**Dealer's and Serviceman's Kit**  
Improved • Air-Cooled  
**AC-DC Adjustable Ballasts**

**No. 770—SERVICEMEN'S KIT**  
contains 5 Ballasts: 2 Type A, 2 Type B, 1 Type C Ballasts together with listing of over 2500 replacements and complete instructions.....List Price \$7.50

**GET THIS FREE AC-DC BALLAST TUBE MANUAL!**

Contains valuable information on how to adapt adjustable ballasts to all service jobs. Simply send 12 flaps from JFD Dial Belt envelopes and 10c in stamps (to cover mailing) to JFD MANUFACTURING CO. INC., 4117 Ft. Hamilton Parkway, Brooklyn 19, New York, U. S. A.



USE JFD BALLASTS	TO REPLACE AC-DC RESISTANCE TUBES		
	Beginning with Letter	With Numbers Including	Ending with letter
"A" Ballasts	K, L, M, BK, BL, or BM	6 through 42	A, B, C, D, F, G, or H
"B" Ballasts	K, L, M, BK, BL, or BM	45 through 105	A, B, C, D, F, G, H, S1, S2, S3
"C" Ballasts	All 4 prongs	80 through 350	R, R4, R8, L, L4, L8

## AC-DC STANDARD TUBES—RMA STANDARD CODING

Type No.	List Price	Type No.	List Price	Type No.	List Price	Type No.	List Price	Type No.	List Price	Type No.	List Price
10A Addison	\$.100	M36B	1.00	M42D	1.00	L49B	1.00	BK55D	1.00	M73B	1.00
17A	1.00	M36C	1.00	M42E	1.00	L49BJ	1.25	K55F	1.00	K74B	1.00
K17B	1.00	M36D	1.00	M42F	1.00	L49C	1.00	K55H	1.00	K74C	1.00
K17C	1.00	42A	1.00	M42H	1.00	L49CJ	1.25	KX55A	1.25	K74D	1.00
L17B	1.00	42B2	1.25	49A	1.00	L49D	1.00	KX55B	1.25	80A	1.00
L17C	1.00	K42B	1.00	K49B	1.00	L49DJ	1.25	KX55C	1.25	K80B	1.00
K22B	1.00	K42BJ	1.25	K49BJ	1.25	L49E	1.00	L55B	1.00	K80C	1.00
K23B	1.00	BK42B	1.00	BK49B	1.00	L49F	1.00	L55C	1.00	K80D	1.00
L23B	1.00	BL42B	1.00	K49C	1.00	LX49B	1.25	L55CP	1.25	K80F	1.00
L23C	1.00	K42C	1.00	BK49C	1.00	LX49C	1.25	L55D	1.00	K80H	1.00
33A	1.00	BK42C	1.00	K49CJ	1.25	LX49D	1.25	L55F	1.00	L80B	1.00
33AG	1.00	BL42C	1.00	K49D	1.00	M49B	1.00	L55H	1.00	L80B	1.00
36A	1.00	K42D	1.00	BK49D	1.00	M49C	1.00	M55B	1.00	L80C	1.00
K36B	1.00	BK42D	1.00	K49E	1.00	M49D	1.00	M55C	1.00	M80B	1.00
BK36B	1.00	KX42A	1.25	K49F	1.00	M49H	1.00	M55D	1.00	M80C	1.00
K36BJ	1.25	KX42B	1.25	K49G	1.00	50	1.00	M55F	1.00	K87B	1.00
K36C	1.00	KX42C	1.25	KX49A	1.00	K52H	1.00	M55H	1.00	90A	1.00
K36D	1.00	L42B	1.00	KX49B	1.25	55A	1.00	60R30	1.25	K90B	1.00
K36H	1.00	L42BJ	1.25	KX49C	1.25	K55A	1.00	G2A	1.00	K90C	1.00
KX36A	1.25	L42C	1.00	KX49D	1.25	K55B	1.00	K67B	1.00	92A	1.00
KX36B	1.25	L42CJ	1.25	KY49A	1.25	BK55B	1.00	K67BJ	1.25	K92B	1.00
KX36C	1.25	L42D	1.00	KY49B	1.25	BL55B	1.00	K67C	1.00	K92C	1.00
L36B	1.00	L42DJ	1.25	KY49C	1.25	BM55B	1.00	K67D	1.00	K92D	1.00
L36C	1.00	L42E	1.00	KZ49A	1.25	K55C	1.00	L67C	1.00	K92F	1.00
L36D	1.00	M42B	1.00	KZ49B	1.25	BK55C	1.00	K72B	1.00	K92H	1.00
L36DJ	1.25	M42C	1.00	KZ49C	1.25	K55D	1.00	K73C	1.00		



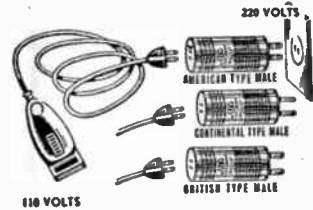
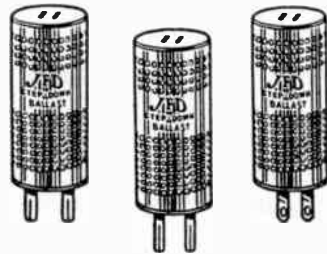
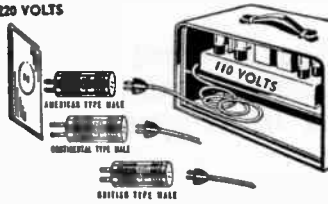


Plug-in type

# RESISTOR BALLASTS

STEP-DOWN FROM 220 VOLTS TO 110 VOLTS

220 VOLTS



JFD STEP-DOWN BALLAST

Use JFD voltage reducing ballasts on 220 volt current supply if you want to operate 110 volt appliances. Excellent for radios, floor lamps, clocks, therapeutic lamps, electric blankets, etc.

Catalog No.	Resist.	Current	Voltage Drop	Watts	Male End	Female End	Load	List Price
450	97	1.13	220-110	125	American	American	125 W Infra Red Therapeutic Lamp	\$2.40
451B	97	1.13	220-110	125	British	American	125 W Infra Red Therapeutic Lamp	2.40
451C	97	1.13	220-110	125	Continental	American	125 W Infra Red Therapeutic Lamp	2.40
456	250	.44	220-110	65	American	American	35-65 W Radio Heating Pads	2.40
457B	250	.44	220-110	65	British	American	35-65 W Radio Heating Pads	2.40
457C	250	.44	220-110	65	Continental	American	35-65 W Radio Heating Pads	2.40
458	300	.35	220-110	38	American	American	4-5 Tube AC-DC Radio, .3 Amp tubes	2.40
459B	300	.35	220-110	38	British	American	4-5 Tube AC-DC Radio, .3 Amp tubes	2.40
459C	300	.35	220-110	38	Continental	American	4-5 Tube AC-DC Radio, .3 Amp tubes	2.40
462	500	.22	220-110	25	American	American	General Use	2.40
463B	500	.22	220-110	25	British	American	General Use	2.40
463C	500	.22	220-110	25	Continental	American	General Use	2.40
464	560	.20	220-110	25	American	American	5 Tube AC-DC Radio Using .15 Amp tubes	2.40
465B	560	.20	220-110	25	British	American	5 Tube AC-DC Radio Using .15 Amp tubes	2.40
465C	560	.20	220-110	25	Continental	American	5 Tube AC-DC Radio Using .15 Amp tubes	2.40
466	660	.167	220-110	8	American	American	General Use	2.40
467B	660	.167	220-110	8	British	American	General Use	2.40
467C	660	.167	220-110	8	Continental	American	General Use	2.40
468	1345	.082	220-110	9	American	American	Electric Razor	2.40
469B	1345	.082	220-110	9	British	American	Electric Razor	2.40
469C	1345	.082	220-110	9	Continental	American	Electric Razor	2.40
470	6000	.018	220-110	2	American	American	Electric Clock	2.40
471B	6000	.018	220-110	2	British	American	Electric Clock	2.40
471C	6000	.018	220-110	2	Continental	American	Electric Clock	2.40
472	110	.950	220-110	105	American	American	15-7 Watt Xmas lights in parallel	2.40
473B	110	.950	220-110	105	British	American	15-7 Watt Xmas lights in parallel	2.40
473C	110	.950	220-110	105	Continental	American	15-7 Watt Xmas lights in parallel	2.40
474	960	.115	220-110	13	American	American	Schick Razor	2.40
475B	960	.115	220-110	13	British	American	Schick Razor	2.40
475C	960	.115	220-110	13	Continental	American	Schick Razor	2.40
476	1100	.1	220-110	11	American	American	Packard Razor	2.40
477B	1100	.1	220-110	11	British	American	Packard Razor	2.40
477C	1100	.1	220-110	11	Continental	American	Packard Razor	2.40
478	475	.230	220-110	26	American	American	6 tube AC-DC Radio Using .15 Amp tubes	2.40
479B	475	.230	220-110	26	British	American	6 tube AC-DC Radio Using .15 Amp tubes	2.40
479C	475	.230	220-110	26	Continental	American	6 tube AC-DC Radio Using .15 Amp tubes	2.40
480	300	.300	220-110	33	American	American	Remington Razor	2.40
481B	300	.300	220-110	33	British	American	Remington Razor	2.40
481C	300	.300	220-110	33	Continental	American	Remington Razor	2.40
482	785	.140	220-110	16	American	American	Portable Radio Total Current drain .140 Amp.	2.40
483B	785	.140	220-110	16	British	American	Portable Radio Total Current drain .140 Amp.	2.40
483C	785	.140	220-110	16	Continental	American	Portable Radio Total Current drain .140 Amp.	2.40
484	430	.255	220-110	28	American	American	Detrola Automatic Phono Turntable	2.40
485B	430	.255	220-110	28	British	American	Detrola Automatic Phono Turntable	2.40
485C	430	.255	220-110	28	Continental	American	Detrola Automatic Phono Turntable	2.40
488	2000	.055	220-110	6	American	American	General Use	2.40
489B	2000	.055	220-110	6	British	American	General Use	2.40
489C	2000	.055	220-110	6	Continental	American	General Use	2.40
490	143	.87	220-110	96	American	American	65-130 Watt 110 Volt Radio	2.40
491B	143	.87	220-110	96	British	American	65-130 Watt 110 Volt Radio	2.40
491C	143	.87	220-110	96	Continental	American	65-130 Watt 110 Volt Radio	2.40

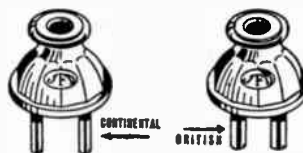
## JFD FOREIGN ADAPTER

Converts American Male Plug to Continental and British Male Plugs  
Converts Foreign receptacles into the standard American type—in a jiffy!



No. 2-449—with Continental type prongs. List Price .....\$0.33  
No. 2-450—with British type prongs. List Price .....\$0.33

## JFD Bakelite Handle Cap for Use in Foreign Countries



Comes with Continental or British Prongs

No. 2-451—Cap with Continental type prongs .....\$0.25  
2-452—Cap with English type prongs. . .30

## JFD Wire Measuring Outfit (COUNTER MODEL)



Here is a compact, sturdy wire measuring outfit that can be set up easily on counter, bench or table. More than pays for itself in time saved and exact wire measurements. Measures up to 1000 feet. Very simple to set up and operate—it works silently. Take-up reel is adjustable.

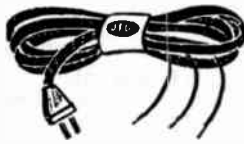
Cat. No. 66-C Complete Outfit

**JFD PRECISION MADE**

# New Enlarged Line of AC-DC RESISTANCE LINE CORDS

## STANDARD 3 TERMINALS AC-DC RESISTANCE CORDS

FLEXIBLE, STURDY CORDS, 3-TERMINAL TYPE, WITH COLOR-CODED, TINNED LEADS



Attractive individual Cartons

No.	Ohms	List
*2180	135	\$1.17
*2181	160	1.17
*2182	180	1.17
*2183	200	1.17
2184	220	1.17
2185	250	1.17
2186	290	1.17
2187	300	1.17
2188	330	1.17
2189	350	1.17
2190	390	1.17
2450	450 (High Resist.)	1.72

\*Note: 135, 160, 180, and 200 ohm cords can also be used for single light 20 and 15 watt fluorescent fixtures.

## TAPPED 4 TERMINAL AC-DC RESISTANCE CORDS

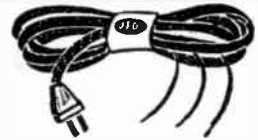
Pilot light resistor shunt built into the line cord. Used on Emerson, Zenith, Sparton, R. C. A., General Electric, Wells-Gardner, Sears Roebuck, Fada, Admiral, Air King, Detrola, Crosley, Garod, and others.



No.	List, Ea.
2176—160 OHMS—TAPPED AT 24 OHMS	
For sets using tubes having a voltage drop of approximately 69 volts as 2-25 volt tubes and 3-6.3 volt tubes plus single pilot light or similar combination .....	\$1.38
2195—165 OHMS—TAPPED AT 30 OHMS	
There is a large demand for this tapped line cord .....	1.38
2177—180 OHMS—TAPPED AT 25 OHMS	
For sets using tubes having a voltage drop of approximately 63 volts as 2-25 volt tubes and 2-6.3 volt tubes plus a single pilot light or similar combination .....	1.38
2178—200 OHMS—TAPPED AT 25 OHMS	
For sets using tubes having a voltage drop of approximately 57 volts as 1-25 volt tube, 1-12 volt tube and 3-6.3 volt tubes and a single pilot light. May also be used for sets using tubes having a voltage drop of 63 volts, (2-25 volt and 2-6.3 volt tubes) if high line voltage (125 volts) is encountered....	1.38
2179—200 OHMS—TAPPED AT 40 OHMS	
For sets using tubes having a voltage drop of approximately 57 volts as 1-25 volt tube, 1-12 volt tube and 3-6.3 volt tubes and two pilot lights in series .....	1.38

No.	List, Ea.
2174—280 OHMS—TAPPED AT 40 OHMS	
For sets using tubes having a voltage drop of approximately 32 volts as 2-12 volt tubes and 1-6.3 volt tube or 5-6.3 volt tubes or similar combinations using 2 pilot light in series .....	\$1.38
2164—360 OHMS—TAPPED AT 80 OHMS	
Used in Garod Model BP-20. See No. 2196 for specifications .....	1.72
2166—430 OHMS—TAPPED AT 80 OHMS	
For Farnsworth Model CD59. See No. 2196 for specifications .....	1.72
2156—510 OHMS—TAPPED AT 80 OHMS	
For Fada. See No. 2196 for specifications .....	1.72
2196—560 OHMS—TAPPED AT 80 OHMS	
Tapped at 80 ohms for plate of rectifier. Designed with voltage dropping resistor to plate of rectifier. Avoids necessity of using B+ resistor. This cord used extensively .....	1.72
2158—960 OHMS—TAPPED AT 80 OHMS	
For G. E. Model L622. See No. 2196 for specifications .....	1.72
2165—1950 OHMS—TAPPED AT 360 OHMS	
Used extensively in sets such as Crosley Model 27BD, Admiral Model 28-G-5, and other sets with similar circuits .....	2.06

## HIGH RESISTANCE CORDS



No.	List Price
2197 For 3-way portable radio. AC-DO battery. New high resistance type cord, has 560 ohms resistance. Many thousands of sets using this identical cord are now in use. This popular replacement cord should be stocked by every serviceman! Individually packaged .....	\$1.72

### 2157—For AC-DC Sets.

This cord has 960 ohms resistance, and is used wherever 45Z3 rectifier tube is employed. (For pocket type radios, such as: Admiral, Fada Sentinel, Sonora, Motorola, Detrola, Farnsworth, etc.) Individually packaged .....

## REPLACEMENT LINE CORD FOR MOTOROLA SETS



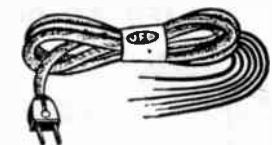
No.	List Price
2198—8 ft. cord containing 2 resistance elements—1100 and 280 ohms. Has 4 terminals. Essential replacement for all Motorola portables. Nos. 41D, 51D, 52D, 41H. ....	\$2.06

## COMBINATION ANTENNA WIRE and STRAIGHT AC CORD



No.	List Price
2168—3-wire cord with special female socket to fit sets which have three prong male plug, used in Sentinel, Admiral, Belmont, Sonora, etc. Individually packaged .....	\$1.72

## UNIVERSAL AC-DC RESISTANCE LINE CORDS

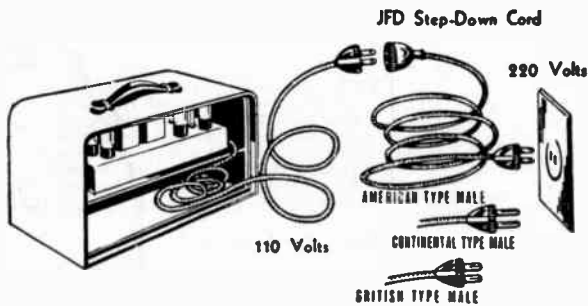


No.	List Price
2175—This line cord replaces AC-DC cords from 220 ohms to 800 ohms. Can be used for either standard three terminal or tapped cord.....	\$1.72



# STEP-DOWN — AC-DC RESISTOR LINE CORDS

(Step-Down from 220 V. to 110 V.)  
JFD STEP-DOWN LINE CORDS FOR RADIOS

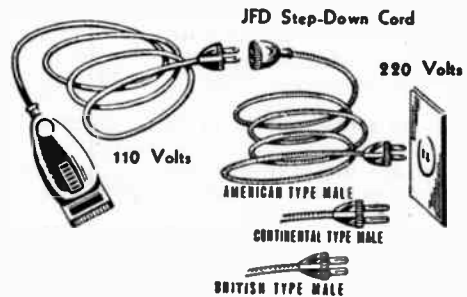


Cat. No.	Description	List Price
2191	220V-110V Stepdown for 4, 5, 6 tube sets drawing .3 amps. American Male Plug	\$2.40
2193C	220V-110V Stepdown for 4, 5, 6 tube sets drawing .3 amps. Continental Male Plug	2.40
2193B	220V-110V Stepdown for 4, 5, 6 tube sets drawing .3 amps. British Male Plug	2.40
2192	220V-110V Stepdown for 5 tube sets drawing .15 amps. American Male Plug	2.40
2194C	220V-110V Stepdown for 5 tube sets drawing .15 amps. Continental Male Plug	2.40
2194B	220V-110V Stepdown for 5 tube sets drawing .15 amps. British Male Plug	2.40
2430A	220V-110V Stepdown for 6 tube sets drawing .150 amps. American Male and Female Plugs	2.40
2431B	220V-110V Stepdown for 6 tube sets drawing .150 amps. British Male and American Female Plugs	2.40

Cat. No.	Description	List Price
2432C	220V-110V Stepdown for 6 tube sets drawing .150 amps. Continental Male and American Female Plugs	\$2.40

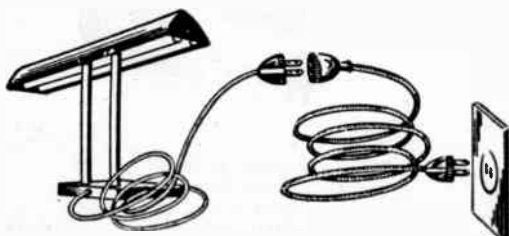
## JFD STEP-DOWN LINE CORDS FOR ELECTRIC RAZORS

Cat. No.	Description	List Price
2203	220V-110V Stepdown for Remington Rand Razor 15W. American Female and American Male	\$2.60
2208B	220V-110V Stepdown for Remington Rand Razor 15W. American Female and British Male	2.60
2203C	220V-110V Stepdown for Remington Rand Razor 15W. American Female and Continental Male	2.60
2204	220V-110V Stepdown for Schick Razor 9W, Sunbeam Shavemaster 15W, Williams Roto-Shaver, Gillette, Gem 10W with American Female and American Male	2.60
2204B	220-110V Stepdown for Schick Razor 9W, Sunbeam Shavemaster 15W, Williams Roto-Shaver, Gillette, Gem 10W with American Female and British Male	2.60
2204C	220V-110V Stepdown for Schick Razor 9W, Sunbeam Shavemaster 15W, Williams Roto-Shaver, Gillette, Gem 10W with American Female and Continental Male	2.60
2205	220V-110V Stepdown for Packard Razor 6W with American Female and American Male	2.60
2205B	220V-110V Stepdown for Packard Razor 6W with American Female and British Male	2.60



Cat. No.	Description	List Price
2205C	220V-110V Stepdown for Packard Razor 6W with American Female and Continental Male	\$2.60

## JFD AC-DC LINE CORDS FOR FLUORESCENT FIXTURES



Cat. No.	Description	List Price
2181FL	165 ohm, for 20 watt bulb, 117 volts, 6 feet long	\$1.17
2181FL-2	Two 165 ohm windings, for two 20 watt bulbs, 117 volts, 6 feet long	2.00
2182FL	180 ohm, for 15 watt bulb, 117 volts, 6 feet long	1.17
2200FL	Two 180 ohm windings, for two 15 watt bulbs, 117 volts, 6 feet long	2.00

### INSULATED PHONE TIP JACK



Will accommodate all standard phone tip plugs, of the insulated and non-insulated types. Recommended for use with our Nos. 200 and 201 phone tip plugs. Insulated head  $\frac{3}{8}$ " dia. available in Black, Red, Yellow and Green. Mounts in a  $\frac{1}{4}$ " hole. Supplied complete with insulating shoulder washer and nut. Specify color.

No. 202.....\$15.00 per C

### INSULATED BANANA JACK



Will accommodate all standard banana type plugs. Mounts in a  $\frac{1}{4}$ " hole in panels up to  $\frac{3}{8}$ " thick. Insulated head  $\frac{3}{8}$ " dia. available in Black, Red, Yellow and Green. Supplied complete with insulating shoulder washer, soldering lug, and nut. Specify color.

No. 205.....\$15.00 per C

### INSTRUMENT BANANA JACK



Made of brass, nickel plated. Jack receptacle is counter-sunk and will accept all standard Banana type plugs for a snug and positive contact. Insulated head is  $\frac{1}{2}$ " diameter and supplied complete with insulating washer, lock washer, heavy duty soldering lug and nut. Available in Black, Red, Yellow and Green. Specify color.

No. 219.....\$19.00 per C

### INSULATED COMBINATION JACK



This combination jack will accommodate all standard plugs, of the phone tip type or banana type construction. Mounts in a  $\frac{1}{4}$ " hole in panels up to  $\frac{1}{2}$ " thick. Over-all length 1  $\frac{3}{8}$ ". Supplied complete with insulating shoulder washer and nut. Insulated head available in Black, Red, Yellow and Green. Specify color.

No. 206.....\$20.00 per C

### INSULATED SOLDERLESS BANANA PLUGS



Spring type construction, and will fit all standard banana jacks. Tapped hole is provided in rear of plug and small screw machine stud is provided so that wire can be wrapped around and tightened without the need of soldering. Insulated handle is  $\frac{3}{8}$ " long and available in Black, Red, Yellow and Green. Specify color.

No. 211.....\$20.00 per C



This plug constructed the same as No. 211 described above, but the plug portion is made of hexagon brass. Plug is also supplied with screw machine stud. Insulated handle 1" long and available in Black, Red, Yellow and Green colors. Specify color.

No. 212.....\$25.00 per C

### INSULATED SOLDERLESS PHONE TIP PLUGS



Insulated sleeve  $\frac{3}{8}$ " long, and available in Black, Red, Yellow and Green. Will fit all standard phone tip jacks and specially recommended for use with our No. 202 insulated jack. The wire fits through the sleeve of plug, and is wrapped around the screw portion, and then tightened with the knurled nut provided, making soldering unnecessary. Specify color.

No.	Type	Per C
200	Plug with No. 105 Tip	\$18.00
201	Plug with No. 106 Tip	17.00

### INSULATED PHONE TIP PLUG



Insulated sleeve  $\frac{3}{8}$ " long, available in Black, Red, Yellow and Green. The phone tip will plug into all standard phone tip jacks, and the insulated sleeve is so designed to accommodate all standard banana type plugs.

No. 215.....\$15.00 per C

Phone tip only — less insulated sleeve.  
No. 125.....\$8.00 per C

### INSULATED PHONO NEEDLE TIP PLUG



Insulated sleeve  $\frac{3}{8}$ " long, available in Black, Red, Yellow and Green. The body of the plug will accommodate all standard banana type plugs. The sharp needle point phone tip will pierce through corrosion for positive contact.

No. 216.....\$20.00 per C

Needle tip only — less insulated sleeve.  
No. 217.....\$12.00 per C

### INSULATED SHORT PHONE TIP



Will fit all standard phone tip jacks of the insulated or non-insulated types. Insulated sleeve  $\frac{3}{8}$ " long, and available in Black, Red, Yellow and Green. Specify colors.

No. 203.....\$15.00 per C

### INSULATED BANANA PLUG Spring Type



Will fit all standard banana type jacks. A set screw is provided in the side of the plug to secure the wire to the plug without soldering. Insulated sleeves  $\frac{3}{8}$ " long available in Black, Red, Yellow and Green colors. Over-all length 1  $\frac{3}{8}$ ". Specify color.

No. 204.....\$20.00 per C

### INSULATED BANANA PLUG Split Type



The banana plug is of the split type construction. Insulated handle  $\frac{3}{8}$ " long. A set screw is provided in the side of the plug, to secure the wire to the plug without soldering. Available in Black, Red, Yellow and Green colors. Specify colors.

No. 213.....\$20.00 per C

### BANANA PLUG AND PHONE TIP JACK COMBINATION



Insulated banana type plug of the spring type construction will fit all standard banana type jacks, and the top of the insulated sleeve of the plug will accommodate all standard phone tips. Insulated handle 1" long. Available in Black, Red, Yellow and Green. Specify color.

No. 214.....\$45.00 per C

### INSULATED BINDING POSTS



Knurled Insulated Head threaded eliminating the necessity for using a brass bushing. Each Binding Post complete with 6-32 x  $\frac{3}{8}$ " screw and lockwasher. Available in Black and Red Colors. Specify Colors.

No.	Head Diameter	Per C
207	$\frac{3}{8}$ "	\$15.00
208	$\frac{1}{2}$ "	15.00
Head Only		
209	$\frac{3}{8}$ "	\$ 6.50
210	$\frac{1}{2}$ "	7.00

### INSULATED SPADE LUG



Insulated sleeve  $\frac{3}{8}$ " diameter,  $\frac{3}{8}$ " long and available in Red and Black colors. The barrel of the insulated sleeve will accommodate all standard type banana plugs.

No.	Type	Per C
215	Insulated Lug	\$15.00
129	Lug only	2.00

### ALLIGATOR CLIP



Clips are made so that the jaws match accurately, permitting them to grip all sizes wire accurately. The barrel of clip will accommodate all standard banana type plugs. Made of steel, cadmium plated. Over-all length 2".

No. 300.....\$10.00 per C

### INSULATED ALLIGATOR TIP



Embodies our No. 300 Alligator Clip. Insulated handle  $\frac{3}{8}$ " long and will accommodate all standard banana type plugs. Insulated handle available in Black and Red colors. Specify color required.

No. 301.....\$20.00 per C

### ALLIGATOR CLIP PHONE TIP JACK



Insulated phone tip jack with No. 300 Alligator Clip. The jack portion will accommodate all standard phone tip plugs. Insulated handle 1" long available in Black and Red colors. Over-all length 2  $\frac{3}{8}$ ". Specify color.

No. 304.....\$45.00 per C

### ALLIGATOR CLIP COMBINATION JACK



The insulated jack portion will accommodate all standard phone tip or banana type plugs. Insulated handle 1  $\frac{1}{4}$ " long available in Black and Red colors. Over-all length 8". Specify color.

No. 305.....\$50.00 per C

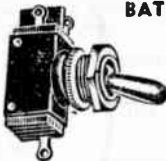
## H AND H TOGGLE SWITCHES

Rated 1 Amp. 250 Volts, 3 Amps. 125 Volts. Switches are nickel plated and supplied with mounting nut.



No.	Type	Shaft	Each
500	SPST	1 3/8"	\$0.60
501	SPST	1 3/8"	.70
502	SPDT	1 3/8"	.75
503	SPDT	1 3/8"	.85
504	DPST	1 3/8"	1.15
505	DPST	1 3/8"	1.25
506	DPDT	1 3/8"	1.30
507	DPDT	1 3/8"	1.40
508	On & Off Name Plate		.05

## BAT HANDLE TOGGLE SWITCHES



These switches are the same as described above with bat shaped handle. Shaft length 1 3/8".

No.	Type	Each
510	SPST	\$0.60
511	SPDT	.75
512	DPST	1.15
513	DPDT	1.30

## ROTARY TOGGLE SWITCHES



Made by H & H, rated at 1 Amp. 250 Volts, 3 Amps. 125 Volts. Switches are nickel plated and supplied with mounting nut.

No.	Type	Threaded Shank	Over-all Length	Each
570	SPST	3/8"	1 1/2"	\$0.85
571	SPDT	3/8"	1 1/2"	.95
572	DPST	3/8"	1 1/2"	1.30
573	DPDT	3/8"	1 1/2"	1.60

## SLIDE LEVER SWITCHES



Rated 1 1/2 Amps. 110 Volts. Size 1 3/8" x 1/2". Mounting centers 1 1/2".

No.	Type	Each
515	SPST	\$0.30
516	SPDT	.35
517	DPST	.45
518	DPDT	.50

## HEAVY DUTY POWER SWITCHES



These Heavy Duty Power Switches are made by H & H and are specially recommended for use in amplifiers, transmitters, motors and all heavy current circuits where heavy current is carried. Available in 3 types with neutral off in center position.

Rated at 10 Amps. 125 Volts. Measures 2" long, 1" high, 1 1/4" wide, mounting sleeve diameter 3/4".

No.	Type	Each
574	DPDT	\$5.50
575	TPDT	8.25
576	4 P D T	12.00

## PUSH BUTTON MOMENTARY SWITCH



Two-circuit slow make and break Momentary Switch made by H & H. Solder lug, one circuit normally "ON", one circuit normally "OFF". 3/8" slotted sleeve, rated at 75 Watts, 125 Volts.

No. 580.....\$1.05 each  
Casein buttons in Black and Red colors can be obtained for the above switch.....\$.35 each

## BANANA TYPE PLUG



This plug is hexed brass, nickel plated. The spring is made of phosphor bronze assuring positive and lasting contact. Plug is constructed with a 6-32 female thread inside and is supplied with a 6-32 screw and soldering lug.

No. 100 .....\$15.00 per C

## SPLIT TYPE BANANA PLUG



Made of hexed brass, heavily nickel plated over-all. Will fit all standard banana type jacks. Over-all length 1 1/4". Threaded portion 6-32 x 1/2" long. Supplied with two 6-32 hexagon nuts.

No. 104.....\$12.00 per C

## BANANA TYPE PLUG Spring Type



Plug and spring are made of brass, nickel plated. The spring type of construction assures positive and lasting contact. Plug is threaded 6-32 and the threaded portion is 1/2" long. Supplied with two 6-32 hexagon nuts.

No. 103.....\$12.00 per C

## MIDGET PLUGS AND JACKS Banana Type



Midget banana type plugs and jacks, for use where a minimum amount of space is available. Both plugs and jacks made of brass, nickel plated. A hexagon nut is provided with each plug and jack.

No.	Item	Per C
111	Plug	\$10.00
112	Jack	9.00

## PHONE TIP JACK



Will accommodate all standard phone tip plugs of insulated and non-insulated types. Made of brass, nickel plated. Mounts in a 1/4" dia. hole in panels up to 3/8" thick, and is supplied with hexagon nut.

No. 107.....\$10.00 per C

## METAL BINDING POST



Made of brass, heavily nickel plated over-all. Supplied complete with screw and washer.

No. 110.....\$25.00 per C

## MOLDED BAKELITE SWITCHES



Made by H & H, rated at 3 Amps. 250 Volts. 6 Amps. 125 Volts. Bat Lever type with silver plated contacts. 3/8" slotted sleeve.

No.	Type	Shaft	Each
520	SPST	1 3/8"	\$0.95
521	SPDT	1 3/8"	1.10
522	DPST	1 3/8"	1.50
523	DPDT	1 3/8"	1.70

## BANANA PLUG JACK



Recommended as the mate for the No. 100 Banana type plug, but will accommodate all standard banana type plugs. Jack is made of brass, heavily nickel plated over-all. Mounts in a 1/4" hole and will fit in panels up to 3/8" thick. Jack is furnished with 1/4-32 nut and soldering lug.

No. 101.....\$12.00 per C

## BANANA PLUG JACK



Will accommodate all standard banana type plugs and specially recommended as the mate for Nos. 103 and 104 banana plugs. Made of brass, nickel plated, and mounts in 1/4" hole in panels up to 3/8" thick. Supplied with nut and soldering lug.

No. 109 .....\$10.00 per C

## MIDGET PHONE JACK



Signal Corps type J 670 — Single open circuit midget phone jack. It mounts in 3/8" hole in panels up to 1/4" thick. Bushing is brass, nickel plated. Springs made of phosphor bronze, and the springs are insulated from the frame by heavy

duty bakelite washers.  
No. 122 .....\$35.00 per C

## SOLDERLESS PHONE TIPS



These tips are constructed so that the wire fits through the body of the tip, and is wrapped around the screw portion, and tightened with the knurled nut provided, making soldering unnecessary.

No.	Length	Per C
105	1 3/8"	\$10.00
106	1 1/8"	10.00

## SOLDER TYPE PHONE TIPS



Made of brass, nickel plated. Over-all length 1". Dia. of tip will fit all standard phone tip jacks.

No. 108 .....\$20.00 per M

## LARGE DIAMETER PHONE TIP

Material of Brass and Nickel plated finish. The barrel is drilled extra large to accommodate heavy wire. Diameter of hole 1/4" — length of barrel 1/2" and over-all length 1".

No. 123.....\$30.00 per M

## THREADED PHONE TIPS



Available in either the Solderless Phone Tip type, or the Phono Needle Point type. The chuck is threaded 1/4-32.

No.	Type	Per C
124	Solderless Tip	\$15.00
128	Needle Point	15.00

## MINI-MAX CONNECTING STRIP



This fastening connecting strip is spaced so that it will snap into all 67 1/2-Volt Mini-Max "B" batteries such as Eveready Nos. 455, 466 and Burgess Nos. XX30, XX45.

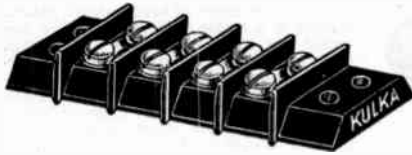
No. 1205.....\$25.00 per C

# SMITH

# Electronic Components

HERMAN H. SMITH, INC.

## HEAVY DUTY BAKELITE BARRIER TERMINAL STRIPS



This latest type of construction of bakelite strip is made of molded bakelite of very high tensile strength. The barriers between each terminal prevent any possibility of short circuits and leakage between terminals. The terminals and screws are brass, nickel plated. The strips are manufactured by the KULKA ELECTRIC MFG. CO. INC., Design Patent No. 136, 762 and are exclusively distributed by us to the Radio Parts Distributors.

### No. 600 SERIES

Height  $\frac{1}{2}$ ", Width  $\frac{3}{8}$ ", Thickness  $\frac{1}{8}$ ". Terminals are  $\frac{1}{8}$ " on centers. Screws 5-40x $\frac{1}{4}$ " long, Binding Head.

#### COLUMN A

All the Barrier Terminal Strips enumerated in this column for the 600, 601, 602 and 603 series are made with the screw type terminals exactly as shown in the illustration at top of the page.

No.	Col. A Terminals Each	No.	Col. B Terminals Each	No.	Col. C Terminals Each	No.	Col. D Terminals Each				
600-1	1	\$0.14	600-ST-1	1	\$0.17	600%ST-1	1	\$0.17	600-Y-1	1	\$0.17
600-2	2	.22	600-ST-2	2	.29	600%ST-2	2	.29	600-Y-2	2	.29
600-3	3	.30	600-ST-3	3	.40	600%ST-3	3	.40	600-Y-3	3	.40
600-4	4	.38	600-ST-4	4	.52	600%ST-4	4	.52	600-Y-4	4	.52
600-5	5	.46	600-ST-5	5	.63	600%ST-5	5	.63	600-Y-5	5	.63
600-6	6	.54	600-ST-6	6	.75	600%ST-6	6	.75	600-Y-6	6	.75
600-7	7	.62	600-ST-7	7	.86	600%ST-7	7	.86	600-Y-7	7	.86
600-8	8	.70	600-ST-8	8	.98	600%ST-8	8	.98	600-Y-8	8	.98
600-9	9	.78	600-ST-9	9	1.09	600%ST-9	9	1.09	600-Y-9	9	1.09
600-10	10	.86	600-ST-10	10	1.21	600%ST-10	10	1.21	600-Y-10	10	1.21
600-11	11	.94	600-ST-11	11	1.32	600%ST-11	11	1.32	600-Y-11	11	1.32
600-12	12	1.02	600-ST-12	12	1.44	600%ST-12	12	1.44	600-Y-12	12	1.44
600-13	13	1.10	600-ST-13	13	1.55	600%ST-13	13	1.55	600-Y-13	13	1.55
600-14	14	1.18	600-ST-14	14	1.67	600%ST-14	14	1.67	600-Y-14	14	1.67
600-15	15	1.26	600-ST-15	15	1.78	600%ST-15	15	1.78	600-Y-15	15	1.78
600-16	16	1.34	600-ST-16	16	1.90	600%ST-16	16	1.90	600-Y-16	16	1.90
600-17	17	1.42	600-ST-17	17	2.01	600%ST-17	17	2.01	600-Y-17	17	2.01
600-18	18	1.50	600-ST-18	18	2.13	600%ST-18	18	2.13	600-Y-18	18	2.13
600-19	19	1.58	600-ST-19	19	2.24	600%ST-19	19	2.24	600-Y-19	19	2.24
600-20	20	1.66	600-ST-20	20	2.36	600%ST-20	20	2.36	600-Y-20	20	2.36
600-21	21	1.74	600-ST-21	21	2.47	600%ST-21	21	2.47	600-Y-21	21	2.47
600-22	22	1.82	600-ST-22	22	2.59	600%ST-22	22	2.59	600-Y-22	22	2.58

#### COLUMN B



All the Barrier Strips enumerated in this column 600, 601, 602 and 603 series are supplied with the two-solder connection lug illustrated above.

### No. 601 SERIES

Height  $\frac{1}{2}$ ", Width  $1\frac{1}{8}$ ", Thickness  $\frac{1}{8}$ ". Terminals are  $\frac{1}{8}$ " on centers. Screws 6-32x $\frac{1}{4}$ " long, Binding Head.

#### COLUMN C



All the Barrier Strips enumerated in this column 600, 601, 602 and 603 series are supplied with the one-solder connection lug illustrated above.

No.	Terminals Each	No.	Terminals Each	No.	Terminals Each	No.	Terminals Each				
601-1	1	\$0.18	601-ST-1	1	\$0.22	601%ST-1	1	\$0.22	601-Y-1	1	\$0.22
601-2	2	.28	601-ST-2	2	.37	601%ST-2	2	.37	601-Y-2	2	.37
601-3	3	.38	601-ST-3	3	.52	601%ST-3	3	.52	601-Y-3	3	.52
601-4	4	.49	601-ST-4	4	.67	601%ST-4	4	.67	601-Y-4	4	.67
601-5	5	.59	601-ST-5	5	.82	601%ST-5	5	.82	601-Y-5	5	.82
601-6	6	.69	601-ST-6	6	.97	601%ST-6	6	.97	601-Y-6	6	.97
601-7	7	.80	601-ST-7	7	1.12	601%ST-7	7	1.12	601-Y-7	7	1.12
601-8	8	.90	601-ST-8	8	1.27	601%ST-8	8	1.27	601-Y-8	8	1.27
601-9	9	1.00	601-ST-9	9	1.42	601%ST-9	9	1.42	601-Y-9	9	1.42
601-10	10	1.11	601-ST-10	10	1.57	601%ST-10	10	1.57	601-Y-10	10	1.57
601-11	11	1.21	601-ST-11	11	1.72	601%ST-11	11	1.72	601-Y-11	11	1.72
601-12	12	1.31	601-ST-12	12	1.87	601%ST-12	12	1.87	601-Y-12	12	1.87
601-13	13	1.42	601-ST-13	13	2.02	601%ST-13	13	2.02	601-Y-13	13	2.02
601-14	14	1.52	601-ST-14	14	2.17	601%ST-14	14	2.17	601-Y-14	14	2.17
601-15	15	1.62	601-ST-15	15	2.32	601%ST-15	15	2.32	601-Y-15	15	2.32
601-16	16	1.73	601-ST-16	16	2.47	601%ST-16	16	2.47	601-Y-16	16	2.47
601-17	17	1.83	601-ST-17	17	2.62	601%ST-17	17	2.62	601-Y-17	17	2.62
601-18	18	1.93	601-ST-18	18	2.77	601%ST-18	18	2.77	601-Y-18	18	2.77
601-19	19	2.04	601-ST-19	19	2.92	601%ST-19	19	2.92	601-Y-19	19	2.92
601-20	20	2.14	601-ST-20	20	3.07	601%ST-20	20	3.07	601-Y-20	20	3.07
601-21	21	2.24	601-ST-21	21	3.22	601%ST-21	21	3.22	601-Y-21	21	3.22
601-22	22	2.34	601-ST-22	22	3.37	601%ST-22	22	3.37	601-Y-22	22	3.37
601-23	23	2.44	601-ST-23	23	3.52	601%ST-23	23	3.52	601-Y-23	23	3.52

#### COLUMN D



All the Barrier Strips enumerated in this column for the 600, 601 and 602 series are supplied with the bottom type connection lug illustrated above.

### No. 602 SERIES

Height  $\frac{3}{8}$ ", Width  $1\frac{1}{8}$ ", Thickness  $\frac{1}{8}$ ". Terminals are  $\frac{1}{8}$ " on centers. Screws 8-32x $\frac{1}{4}$ " long, Binding Head.

The 603 series of Barrier Strips are heavy duty strips with thick barriers and cross sections. They will take up to 85 amps of current and are ideal for heavy duty electrical control units such as spot welding machines, molding equipment, etc., or any place where a rugged heavy duty terminal block is needed for heavy amperage.

No.	Terminals Each	No.	Terminals Each	No.	Terminals Each	No.	Terminals Each				
602-1	1	\$0.21	602-ST-1	1	\$0.27	602%ST-1	1	\$0.27	602-Y-1	1	\$0.27
602-2	2	.33	602-ST-2	2	.45	602%ST-2	2	.45	602-Y-2	2	.45
602-3	3	.46	602-ST-3	3	.64	602%ST-3	3	.64	602-Y-3	3	.64
602-4	4	.59	602-ST-4	4	.82	602%ST-4	4	.82	602-Y-4	4	.82
602-5	5	.71	602-ST-5	5	1.01	602%ST-5	5	1.01	602-Y-5	5	1.01
602-6	6	.84	602-ST-6	6	1.19	602%ST-6	6	1.19	602-Y-6	6	1.19
602-7	7	.97	602-ST-7	7	1.38	602%ST-7	7	1.38	602-Y-7	7	1.38
602-8	8	1.09	602-ST-8	8	1.56	602%ST-8	8	1.56	602-Y-8	8	1.56
602-9	9	1.22	602-ST-9	9	1.75	602%ST-9	9	1.75	602-Y-9	9	1.75
602-10	10	1.35	602-ST-10	10	1.93	602%ST-10	10	1.93	602-Y-10	10	1.93
602-11	11	1.47	602-ST-11	11	2.12	602%ST-11	11	2.12	602-Y-11	11	2.12
602-12	12	1.60	602-ST-12	12	2.30	602%ST-12	12	2.30	602-Y-12	12	2.30
602-13	13	1.73	602-ST-13	13	2.49	602%ST-13	13	2.49	602-Y-13	13	2.49

### No. 603 SERIES

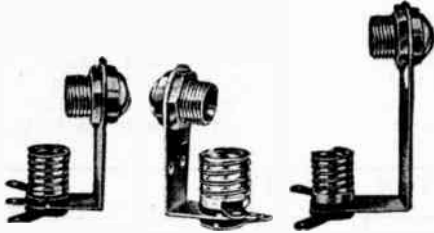
Height  $\frac{3}{8}$ ", Width  $1\frac{1}{8}$ ", Thickness  $\frac{1}{8}$ ". Terminals on centers  $\frac{1}{2}$ ". Screws 10/82x $\frac{3}{8}$ " long, Binding Head.

No.	Terminals Each	No.	Terminals Each	No.	Terminals Each			
603-1	1	\$0.50	603-ST-1	1	\$0.60	603%ST-1	1	\$0.60
603-2	2	.85	603-ST-2	2	1.03	603%ST-2	2	1.03
603-3	3	1.20	603-ST-3	3	1.45	603%ST-3	3	1.45
603-4	4	1.55	603-ST-4	4	1.88	603%ST-4	4	1.88
603-5	5	1.90	603-ST-5	5	2.30	603%ST-5	5	2.30
603-6	6	2.25	603-ST-6	6	2.73	603%ST-6	6	2.73
603-7	7	2.60	603-ST-7	7	3.15	603%ST-7	7	3.15
603-8	8	2.95	603-ST-8	8	3.58	603%ST-8	8	3.58
603-9	9	3.30	603-ST-9	9	4.00	603%ST-9	9	4.00
603-10	10	3.65	603-ST-10	10	4.43	603%ST-10	10	4.43

# SMITH

Electronic Components  
HERMAN H. SMITH, INC.

## PANEL INDICATOR 1/2 INCH JEWEL



These panel indicator assemblies are available in the candelabra, miniature screw, or bayonet base type sockets. Jewel holder is made of brass, nickel plated. Jewel mounts in a single 1/8" dia. hole. Candelabra and bayonet base types can also be secured with a universal adjustable bracket for use where more accurate focus of the jewel to lamp filament is required. Facetted jewel available in Red, Green, Amber, Blue, Opal and Clear colors.

No.	Type	Each
1900	Miniature Screw Socket	\$0.34
1901	Candelabra 110 Volt	.34
1902	Candelabra 110 Volt with Universal Bracket	.42
1903	Bayonet Base	.34
1904	Bayonet Base with Universal Bracket	.38

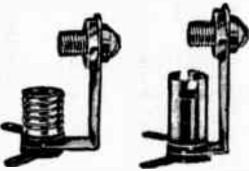
## PANEL INDICATOR 3/4 INCH JEWEL



Available with candelabra 110 Volt, miniature bayonet base, and miniature screw type sockets. Jewel holder is made of brass, nickel plated. Jewel mounts in a single 1/8" dia. hole. Facetted jewels available in Red, Green, Amber, Blue, Opal and Clear colors.

No.	Type	Each
1905	Miniature Screw Socket	\$0.73
1906	Miniature Bayonet Base	.80
1907	Candelabra Socket	.73

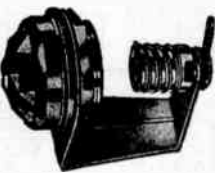
## PANEL INDICATOR 3/8 INCH JEWEL



Available with miniature screw type socket, min. bayonet base, or candelabra type sockets. Jewel holder made of brass, nickel plated. Jewel mounts in a single 1/8" dia. hole. Facetted jewels available in Red, Green, Amber, Blue, Opal and Clear colors.

No.	Type	Each
1908	Miniature Screw Socket	\$0.38
1909	Miniature Bayonet Base	.42

## 1 INCH OPEN TYPE PANEL INDICATOR



**Jewel Removable from Front of Panel**  
This type of panel indicator has the added feature of being able to remove the bulb from the front of the panel. Jewel holder made of brass, chromium plated finish. Jewel mounts in a single 1" dia. hole. The embossed rib in the center of the bracket supplies additional strength, assuring perfect alignment. Available in three types: Miniature screw socket, Miniature bayonet socket and Candelabra type socket. Facetted

jewels available in the following colors: Red, Green, Amber, Blue, Opal, Clear.

No.	Type	Each
1917	Miniature Screw Socket	\$1.22
1918	Miniature Bayonet Base	1.25
1919	Candelabra	1.28

## GLASS JEWELS



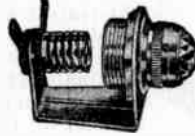
Jewels are available in Red, Green, Amber, Blue, Opal and Clear colors in smooth or facetted types. Jewel holders are brass, nickel plated, and are supplied with mounting nut.

3/8 Inch Jewel MOUNTS IN 3/8" HOLE			3/4 Inch Jewel MOUNTS IN 1/2" HOLE		
No.	Type	Each	No.	Type	Each
1940	Smooth	\$0.20	1913	Smooth	\$0.55
1941	Facetted	.20	1914	Facetted	.55

1/2 Inch Jewel MOUNTS IN 3/8" HOLE			1 Inch Jewel MOUNTS IN 1" HOLE		
No.	Type	Each	No.	Type	Each
1911	Smooth	\$0.23	1915	Smooth	\$1.07
1912	Facetted	.23	1916	Facetted	1.07

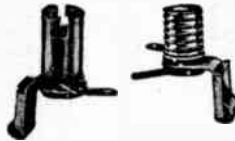
## 1/2 INCH OPEN TYPE PANEL INDICATOR



**Jewel Removable from Front of Panel**  
Jewel holder made of brass, nickel plated. Mounts in a single 1/8" dia. hole. The embossed rib in the center of the bracket gives additional strength and assures perfect alignment. The bulb is easily removable from the front of the panel. Available with Miniature screw type or Miniature bayonet base type sockets, with facetted jewels in the following colors: Red, Green, Amber, Blue, Opal, Clear.

No.	Type	Each
1920	Miniature Screw Socket	\$0.50
1921	Miniature Bayonet Base Socket	.55

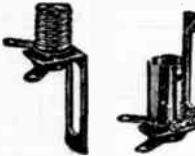
## CLIP-ON TYPE PILOT LIGHT SOCKETS



This type of socket is available with the clip up or down, and can be used by clipping on to the variable condenser or the chassis. This design socket is made with the miniature screw base, miniature bayonet base, or candelabra 110 Volt types. All brackets are cadmium plated.

No.	Type	Per C
1922	Miniature Screw Up Clip	\$13.00
1923	Miniature Screw Down Clip	13.00
1924	Miniature Bayonet Up Clip	15.00
1925	Miniature Bayonet Down Clip	15.00
1926	Candelabra Up Clip	17.00
1927	Candelabra Down Clip	17.00

## BRACKET TYPE PILOT LIGHT SOCKETS



Available with an up or down type of bracket for the miniature screw type, miniature bayonet base, and for the candelabra 110 Volt type sockets. Brackets are made of steel, cadmium plated.

No.	Type	Per C
1928	Miniature Screw Up Bracket	\$13.00
1929	Miniature Screw Down Bracket	13.00
1930	Miniature Bayonet Up Bracket	15.00
1931	Miniature Bayonet Down Bracket	15.00
1932	Candelabra Up Bracket	17.00
1933	Candelabra Down Bracket	17.00

## UNMOUNTED TYPE SOCKETS



These unmounted sockets can be secured for the miniature screw shell, miniature bayonet base or for the candelabra 110 Volt types of sockets.

No.	Type	Per C
1934	Miniature Screw Base	\$10.50
1935	Miniature Bayonet Base	11.50
1936	Candelabra 110 Volt	13.50

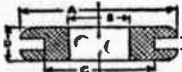
## CLIP-IN SOCKET



This clip-in socket is of the bayonet base type construction, and is assembled with two solder lugs. The special clip in bracket is made of steel, cadmium plated, and is so designed that it clips into the dial directly.

No. 1938.....\$14.00 per C

## RUBBER GROMMETS



A: Outside Dia.; B: Inside Dia.; C: Panel Hole; D: Thickness Over-all; E: Panel Thickness.

No.	A	B	C	D	E	Per C
2185	3/8"	1/4"	1/8"	1/8"	1/8"	\$2.00
2171	1/2"	3/8"	1/4"	1/4"	1/4"	2.50
2172	3/4"	1/2"	3/8"	3/8"	3/8"	3.00
2176	1"	3/4"	1/2"	1/2"	1/2"	3.00
2170	1 1/8"	5/8"	3/4"	3/4"	3/4"	3.50
2173	1 1/4"	3/4"	1"	1"	1"	3.00
2174	1 1/2"	1"	1 1/4"	1 1/4"	1 1/4"	3.25
2175	1 3/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	3.50
2177	2"	1 3/4"	1 3/4"	1 3/4"	1 3/4"	3.25

### NEUTRALIZING AND ALIGNMENT TOOL



A complete, fully insulated neutralizing tool, screw driver and wrench combination. The fibre wrench portion has a 1/4" hexed socket on one end and a 1/2" hexed socket on the other end. A 1/4" metal screw driver nib on the inside portion of the tool fits into the fibre tube itself.

No. 320.....\$0.85 each  
No. 700—Display of 12 No. 320 Tools, \$10.20 each

### ALIGNING TOOL



For Peanut I.F.'s • For RCA Front End For "K" Tran. Transformers

Slender, yet sturdy, this tool is specially adapted for aligning peanut I.F.'s and the difficult-to-get-at front end of some receivers. Available in bulk or on attractive display card.

No. 326.....\$0.75 each  
No. 778—Display of 24 No. 326 Tools, \$18.00 each

### MIDGET ALIGNING TOOL WITH RECESSED NIB



This recessed nib aligning tool is another essential for television servicing. Constructed from fibre with thin recessed nib for slug tuning. Only 2 1/2" long, it makes those hard-to-get-at slugs accessible while chassis is still in cabinet. Available in bulk or on attractive display card.

No. 327.....\$0.50 each  
No. 779—Display of 48 No. 327 Tools, \$24.00 each

### ALIGNMENT SCREW DRIVER



Fibre handle 3/8" dia. x 6" long, and fitted with a screw driver nib for aligning of coils, padding condensers, etc.

No. 321.....\$0.40 each  
No. 776—Display of 24 No. 321 Drivers, \$9.60 each

### ALIGNMENT TOOL FOR PUSH-BUTTON RECEIVERS



This tool is especially designed for aligning push-button receivers and for adjusting iron core I.F. transformers and R.F. coils. There is a recessed screw driver nib on one end and a screw driver blade on the other. Both ends knurled for easy grip.

No. 325.....\$0.75 each  
No. 777—Display of 24 No. 325 Tools, \$18.00 each

### FIBRE ALIGNMENT SCREW DRIVERS



Made of bone hard fibre and supplied in three sizes.

No.	O.D.	Length	Each
307	3/8"	7"	\$0.40
308	1/2"	6"	.50
328	3/4"	7"	.35
701—Display of 24 No. 307 Drivers			9.60
702—Display of 18 No. 308 Drivers			9.00
782—Display of 36 No. 328 Drivers			12.60

### TEST PROD "MAKE YOUR OWN R. F. PROBE"



An exceptionally sturdy fibre prod with rear of prod designed to accommodate IN-34 crystal and condensers, necessary for use as an R.F. Probe. Heavy duty removable screw type tip for easy soldering.

No. 630.....\$1.00 each  
No. 781—Display of 12 No. 630 Prods, \$12.00 each

### SOLDERLESS TEST PROD HANDLES



Insulated handles, available in Black and Red colors. The wire is fed through the insulated handle and is wrapped around the screw portion of the plug and then tightened with the knurled nut provided, making soldering unnecessary. Specify color.

No.	Over-all Length	Each
302	5 1/4"	\$0.40
303	6 3/4"	.50

### PHONO NEEDLE TEST PROD HANDLES



Insulated handles available in Black and Red colors. Wires can be assembled to the metal chuck by uncrewing the chuck from the prod handle. Specify color.

No.	Over-all Length	Each
317	5"	\$0.40
318	6 3/4"	.50

### FIBRE TEST PRODS

Handles are made of fibre 3/8" O.D. x 4" long and can be obtained with either solderless tips or phono needle tips. The fibre handles are available in black or red. Specify color.

No.	Type	Each
323	Solderless Tip	\$0.30
324	Needle Point	.30

### HEXED FIBRE TUBES



Made of bone hard fibre, and constructed so that if the hex wears out, it can be cut off and the balance of the tube can be used.

1/4" HEX			3/8" HEX		
No.	Each	Size	No.	Each	Size
309	\$0.30	6"	313	\$0.30	6"
310	.35	8"	314	.35	8"
311	.45	10"	315	.45	10"
312	.50	12"	316	.50	12"

### FAHNESTOCK SPRING BATTERY CLIPS



Clips are made of brass, nickel plated and are available in the single and double clip types.

No.	Type	Length	Will Take	Per C
533	Single	3/4"	No. 14 B & S Wire	\$1.65
534	Single	1"	No. 10 B & S Wire	2.00
535	Double	1 1/2"	No. 10 B & S Wire	9.00
536	Double	2 1/4"	No. 10 B & S Wire	10.00

### TEST LEADS WITH SOLDERLESS TIPS



Fibre handles colored Red and Black, 4" long x 3/8" diameter. Flexible rubber covered wire leads 50" long also colored Red and Black. Available with standard phone tips, spade lugs or alligator clips.

No.	Type	Per Pr.
600	Phone Tips	\$1.10
601	Spade Lugs	1.10
602	Alligator Clips	1.25

### PHONO NEEDLE TEST LEADS



Fibre handles colored Red and Black, 4" long x 3/8" diameter. Tips are very sharp phonograph needles. Flexible rubber covered wires 50" long also colored Red and Black. Available with standard phone tips, spade lugs, or alligator clips.

No.	Type	Per Pr.
613	Phone Tips	\$1.10
614	Spade Lugs	1.10
615	Alligator Clips	1.25

### ALL SOLDERLESS TEST LEADS



The insulated handles and the insulated plugs are both of the solderless type construction. Insulated handles, Red and Black, are our No. 302, and the plugs are our No. 200. Flexible rubber covered wire leads 50" long.

No. 603.....\$1.65 per pair

### HIGH TENSION TEST LEADS



Sturdy, attractive test leads with heavy duty probes, and 48" of quality high tension kinkless rubber-covered test lead wire with heavy insulation, .248 outside diameter. Supplied with insulated solderless type phone tips, clips. Voltage breakdown (60 cycles), 22,000 volts.

No.	Type	Per Pr.
620	Phone Tips	\$2.50
621	Spade Lugs	2.50
622	Alligator Clips	3.00

### ALLIGATOR CLIP TEST LEADS



Made of very flexible Red and Black wire with alligator clips at each end.

No.	Wire Length	Per Pr.
604	12"	\$0.75
605	24"	.85
606	36"	.95
607	48"	1.05



### BAKELITE FLAT PULL CAP



Approved and listed with U. L. This handy unit consists of two halves of bakelite held together by a screw and nut. The prongs are of heavy brass and have screw terminals for connecting wire leads. Attractively designed for visible use and with an "easy-grip" shape to facilitate insertion and removal from any receptacle. Colors: Brown and Ivory.

No. 854	Color	Per C
855	Brown	\$17.00
	Ivory	21.00

### BAKELITE PONY CAP



Bakelite Pony Cap with Brass Prongs.

No.	Color	Per C
858	Brown	\$13.00
859	Ivory	17.00

### ATTACHMENT PLUG CAP



A snug-fitting, sturdy, bakelite base designed for use with standard attachment plug caps. Has slot finding features on its face and heavy spring contacts for positive and lasting electrical contact. 660 Watts — 250 Volts.

No. 857	\$17.00 per C
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### RUBBER ATTACHMENT — PLUG



Rubber handle attachment plug: Cord Hole  $\frac{3}{8}$ " (.375). Rated at 15 Amps. 125 Volts. Blades are made of Brass.

No. 850	\$15.00 per C
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### BAKELITE HANDLE PLUG Foreign Type



Moulded bakelite handle foreign type plug. Blades are made of brass, and of the Continental Type spacing.

No. 851	\$25.00 per C
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### AMERICAN-FOREIGN PLUG ADAPTER



Streamlined bakelite plug adapter, which adapts from American to foreign type plugs. The plugs will fit snugly into the adapter. The foreign type plugs are made of brass, and are of Continental Type spacing.

No. 852	\$30.00 per C
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### AMERICAN-FOREIGN PLUG ADAPTER British Type



Streamlined bakelite plug adapter, which adapts from American to foreign type plugs. The plugs will fit snugly into the adapter. Prongs are made of brass and are of the BRITISH TYPE spacing.

No. 856	\$30.00 per C
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### MICROPHONE CONNECTOR Single Contact Male



A completely shielded single contact connector. Made of brass and heavily chrome plated. Mate for No. 116 female connector.

No. 115	\$0.35 each
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### MICROPHONE CONNECTOR Single Contact Female



Mate for our No. 117 chassis connector. This connector is used extensively for making connections from microphone to amplifier. Comes equipped with coupling ring. All metal parts are made of brass, heavily chrome plated, except the spring.

No. 116	\$0.45 each
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### CHASSIS CONNECTOR Single Contact Male



This type connector is recommended for use on the chassis or in the microphone. Made of brass, heavily nickel plated. Threaded  $\frac{3}{8}$ "-.27, and mounts in a  $\frac{3}{8}$ " hole. Supplied complete with washers, soldering lug and nut.

No. 117	\$0.30 each
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### CLOSED CIRCUIT CHASSIS CONNECTOR



Same as No. 117 Connector except that circuit closes when female microphone connector (our No. 116) is removed. Supplied with washers, soldering lug and nut.

No. 114	\$0.40 each
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### FUSE MOUNTING BASES



Black bakelite, panel mount type. Will accommodate the 3 A G Auto type cartridge fuse.

No.	Type	Each
530	Single	\$0.20
531	Double	.30

### FUSE CLIPS



Clips are made of spring brass, nickel plated. Will accommodate the 3 A G Auto type cartridge fuse. Clips  $\frac{1}{4}$ " wide x  $\frac{3}{8}$ " high.

No. 532	\$1.75 per C
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### CAP AND CHAIN



Made of brass, heavily nickel plated. The cap seals open end units against dust, eliminating noisy connections. Used with any threaded one or two-conductor chassis unit.

No. 118	\$0.50 each
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### PHONO ADAPTER ATTACHMENT PLUG

Phonograph pick-up and auto radio connection plug.

No. 1201	\$8.00 per C
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### PHONO JACK

Mate for the No. 1201 plug. Jack mounted on bakelite and metal back supplied for use with phonograph attachment.

No. 1203	\$10.00 per C
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### MOTOROLA TYPE PLUG

Attachment plug for all Motorola auto-radio receivers and many other types of auto radios.

No. 1200	\$10.00 per C
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### MOTOROLA SHIELDED JACK

Shielded Jack for Automobile Chassis which takes standard Motorola Plug.

No. 1207	\$18.00 per C
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### LEAD-IN ADAPTER



Lead-in adapter converts Motorola plug to Delco type plug.

No. 1204	\$11.00 per C
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### RUBBER FEET BUMPER



Rubber Bumper —  $\frac{5}{8}$ " dia. x  $\frac{3}{8}$ " thick. Recessed to accommodate a self-tapping screw, machine screw, wood screw or a tack.

No. 2184	\$4.00 per C
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Insert Rubber Bumper — O.D. of shoulder  $\frac{1}{2}$ " x  $\frac{3}{8}$ " thick. Insert  $\frac{1}{8}$ " long tapered from  $\frac{1}{8}$ " to  $\frac{1}{4}$ ".

No. 2183	\$3.00 per C
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### FELT FEET



Available in two types, either with a G-32 x  $\frac{3}{8}$ " machine screw or with an "Anchor Fast" nail, which will stay in place, and will not back up, pull out, or "pop."

No.	Type	Per C
2181	With Machine Screw	\$6.50
2182	With Stronghold Nail	7.00



### PHONO TIP JACK

Brass, nickel plated jacks with positive contact springs mounted on  $\frac{1}{8}$ " bakelite. Jacks are  $\frac{1}{8}$ " center to center. Jacks will accommodate standard

phone tips of either solderless or solder types.

No. 878	\$20.00 per C
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# SMITH

Electronic Components  
HERMAN H. SMITH, INC.

## STEEL MACHINE SCREWS Round Head, Cadmium Plated

Available in bulk quantities, or can be obtained packed 1,000 or a gross to the box.

No.	Per M	Size	No.	Gross
1000	\$3.90	6-32 x 1/4"	1018	\$0.60
1001	4.40	6-32 x 3/8"	1019	.65
1002	4.60	6-32 x 1/2"	1020	.70
1003	4.90	6-32 x 5/8"	1021	.75
1004	5.20	6-32 x 3/4"	1022	.80
1005	5.90	6-32 x 1"	1023	.85
1006	5.00	8-32 x 1/4"	1024	.75
1007	5.40	8-32 x 3/8"	1025	.80
1008	5.75	8-32 x 1/2"	1026	.85
1009	6.15	8-32 x 5/8"	1027	.95
1010	6.65	8-32 x 3/4"	1028	1.00
1011	7.65	8-32 x 1"	1029	1.15
1012	5.10	10-32 x 1/4"	1030	.80
1013	6.15	10-32 x 3/8"	1031	.95
1014	6.80	10-32 x 1/2"	1032	1.00
1015	7.50	10-32 x 5/8"	1033	1.10
1016	8.00	10-32 x 3/4"	1034	1.20
1017	9.10	10-32 x 1"	1035	1.35



## RACK SCREWS Oval Head, Steel, Nickel Plated

Specially recommended for mounting panels in racks and cabinets. Available in gross packages or packed 1000 to the box.

No.	Per M	Size	No.	Gross
1102	\$6.50	6-32 x 1/4"	1090	\$0.98
1103	6.85	6-32 x 3/8"	1091	1.05
1104	7.15	6-32 x 1/2"	1092	1.17
1105	7.80	6-32 x 1"	1093	1.30
1106	6.70	8-32 x 1/4"	1094	1.10
1107	7.80	8-32 x 3/8"	1095	1.25
1108	9.10	8-32 x 1/2"	1096	1.45
1109	9.20	8-32 x 1"	1097	1.55
1110	8.45	10-32 x 1/4"	1098	1.45
1111	9.20	10-32 x 3/8"	1099	1.55
1112	10.40	10-32 x 1/2"	1100	1.60
1113	12.35	10-32 x 1"	1101	1.80



## COUNTERSUNK WASHERS Brass, Nickel Plated

Recommended for use with Rack Screws designated above.

No.	Per M	Size	No.	Gross
1115	\$6.80	6	1118	\$1.05
1116	7.20	8	1119	1.10
1117	7.20	10	1120	1.10

## FLAT AND SHAKEPROOF WASHERS

No.	Per M	Type	No.	Gross
1150	\$4.00	No. 6 Brass N.P.	1146	\$0.60
1151	4.00	No. 8 Brass N.P.	1147	.60
1152	4.00	No. 10 Brass N.P.	1148	.60
1127	3.75	No. 4 Shakeproof Int. Teeth	1121	.55
1128	4.00	No. 6 Shakeproof Int. Teeth	1122	.60
1129	4.00	No. 8 Shakeproof Int. Teeth	1123	.60
1130	4.50	No. 10 Shakeproof Int. Teeth	1124	.65
1132	6.00	1/4" Shakeproof Int. Teeth	1126	.90
1131	7.50	3/8" Shakeproof Int. Teeth	1125	1.10
1139	3.75	No. 4 Shakeproof Ext. Teeth	1133	.55
1140	4.00	No. 6 Shakeproof Ext. Teeth	1134	.60
1141	4.00	No. 8 Shakeproof Ext. Teeth	1135	.60
1142	4.50	No. 10 Shakeproof Ext. Teeth	1136	.65
1144	6.00	1/4" Shakeproof Ext. Teeth	1138	.90
1143	7.50	3/8" Shakeproof Ext. Teeth	1137	1.10

## FANCY HEAD BRONZE FINISH SCREWS

No.	Size	Per M
1160	6-32 x 3/8"	\$10.70
1161	6-32 x 1"	11.40
1162	6-32 x 1 1/4"	12.50
1163	6-32 x 1 1/2"	14.00
1164	8-32 x 3/4"	13.50
1165	8-32 x 1"	14.30
1166	8-32 x 1 1/4"	16.25
1167	8-32 x 1 1/2"	21.50



## SPECIAL NUTS



Machined of Brass Nickel Plated. Correct sizes for volume controls and toggle switches.

No.	Type	Dimensions	Per M
1195	Volume Control	3/8-32 x 1/2 x 3/8	\$20.00
1196	Toggle Switch	16-32 x 1/8 x 3/8	25.00
1197	Toggle Ring Nut	16-32 x 3/8 x 1/8	30.00

## BRASS MACHINE SCREWS Round Head, Nickel Plated

Available in bulk quantities, or can be obtained packed 1,000 or a gross to the box.

No.	Per M	Size	No.	Gross
1044	\$5.00	4-36 x 1/4"	1036	\$0.75
1045	5.50	4-36 x 3/8"	1037	.80
1046	6.30	4-36 x 1/2"	1038	.85
1047	5.00	4-40 x 1/4"	1039	.75
1048	5.50	4-40 x 3/8"	1040	.80
1049	6.30	4-40 x 1/2"	1041	.85
1050	6.55	6-32 x 1/4"	1070	1.00
1051	7.55	6-32 x 3/8"	1071	1.10
1052	8.70	6-32 x 1/2"	1072	1.30
1053	9.35	6-32 x 3/4"	1073	1.40
1054	10.30	6-32 x 1"	1074	1.50
1055	12.20	6-32 x 1 1/4"	1075	1.80
1056	9.35	8-32 x 1/4"	1076	1.40
1057	10.65	8-32 x 3/8"	1077	1.55
1058	11.80	8-32 x 1/2"	1078	1.75
1059	13.35	8-32 x 3/4"	1079	1.95
1060	14.70	8-32 x 1"	1080	2.15
1061	17.50	8-32 x 1 1/4"	1081	2.55
1062	12.00	10-32 x 1/4"	1082	1.75
1063	13.70	10-32 x 3/8"	1083	2.00
1064	15.40	10-32 x 1/2"	1084	2.25
1065	17.25	10-32 x 3/4"	1085	2.50
1066	19.05	10-32 x 1"	1086	2.75
1067	22.85	10-32 x 1 1/4"	1087	3.30

## HEXAGON NUTS Brass, Nickel Plated

No.	Per M	Size	No.	Gross
1188	\$5.95	4-36 x 1/4"	1182	\$0.90
1188	5.95	4-40 x 1/4"	1169	.90
1189	8.50	6-32 x 1/2"	1183	1.25
1190	8.50	6-32 x 3/8"	1184	1.25
1191	10.20	8-32 x 1/2"	1185	1.50
1192	10.20	8-32 x 3/8"	1186	1.50
1193	11.20	10-32 x 1/2"	1187	1.65

## Steel, Cadmium Plated

1179	\$5.45	6-32 x 1/4"	1176	\$0.80
1180	5.45	6-32 x 3/8"	1177	.80
1181	5.95	8-32 x 1/4"	1178	.90

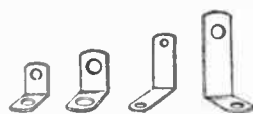
## EYELET TYPE SOLDER LUGS



Made of brass. Nos. 1480, 1481 and 1482 are hot tinned and No. 1483 cadmium plated. Specially recommended for mounting on terminal strips.

No.	Length	Hole	Per M
1480	3/8"	1/8" slot	\$ 4.50
1481	1/2"	No. 8	10.00
1482	3/4"	No. 8	7.50
1483	1"		7.50

## BRASS AND STEEL ANGLES



No.	Material	Size	Per C
1474	Brass N.P.	1/2" x 1/2"	\$2.50
1475	Brass N.P.	3/8" x 3/8"	5.00
1476	Steel H.T.	3/8" x 3/8"	2.00
1477	Steel H.T.	5/8" x 1 1/8"	2.00

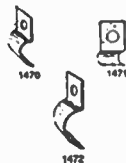
## TAPPED ANGLE BRACKET



Made of steel, cadmium plated. Size 1/2" x 1/2", with one 8-32 tapped hole and one plain .165 hole.

No. 1473 ..... \$4.50 per C

## CABLE CLAMPS



1470—Steel, Cadmium plated, No. 8 hole, 1. 3/8", w. 3/8". Fits 1/4" cable..\$1.25

1471—Steel, Cadmium plated, No. 8 hole, 1. 5/8", w. 3/8". Fits 1/8-1/4" cable.. 1.25

1472—Steel, Cadmium plated, No. 8 hole, 1. 1", w. 3/8". Fits over 1/2" cable.. 1.50

# SMITH

*Electronic Components*  
HERMAN H. SMITH, INC.

## BRASS BUSHINGS



These brass bushings are ideal for use in raising sub panels, chassis, condensers, transformers, etc. Hole in bushing to accommodate a No. 6 or No. 8 screw.

No.	Per C	1/4" O.D. Length	No.	Per C
2100	\$3.50	1/4"	2105	\$3.50
2101	4.00	3/8"	2106	4.03
2102	4.25	1/2"	2107	4.25
2103	5.00	3/4"	2108	5.00
2104	5.50	1"	2109	5.50
<b>3/8" O.D.</b>				
2110	\$4.25	1/4"	2115	\$4.25
2111	4.75	3/8"	2116	4.75
2112	5.00	1/2"	2117	5.00
2113	5.50	3/4"	2118	5.50
2114	6.25	1"	2119	6.25

## THREADED BRASS BUSHINGS

Brass bushings 1/4" O.D. Threaded 6-32 and 8-32.

Threaded 6-32		Threaded 8-32		
No.	Per C	Length	No.	Per C
2120	\$4.25	1/4"	2125	\$4.25
2121	5.25	3/8"	2126	5.25
2122	6.50	1/2"	2127	6.50
2123	7.50	3/4"	2128	7.50
2124	8.50	1"	2129	8.50



## KNURLED BATTERY NUTS Brass, Nickel Plated

No.	Dimensions	Per C
1198	6-32 x 1/4 x 1/2	\$2.50
1199	8-32 x 1/4 x 1/2	2.50

## MINI-SHIELDS

### The Perfect Shield For Mini-Tubes



These new Mini-Shields are formed to fit snugly and yet expand to a constant snug fit on larger tubes to automatically compensate for the considerable variation in physical dimensions of miniature tubes as commercially produced.

Specially shaped serrations spaced to engage the lower mini-shield ribs catch and hold the shield firmly which actually tightens against vibrations or other forces tending to jiggle the tube loose.

These shields are made so that three rows of dimples pressing against the tube provide a gentle but firm snug fit. The three prong spring base clip grips the shield positively, cradling the tube within the shield and retaining it firmly in the socket secure against vibration. These Mini-Shields are available in two sizes to accommodate tubes 1 1/4" long and 2" long.

No.	Type	Over-all Length	Per C
550	For 2" Tube	1 3/4"	\$12.00
551	For 1 1/2" Tube	1 1/4"	10.00
553	3-Prong Base Clip		5.00
554	Single Clips		3.00

## GRID CAP SHIELD



Shield is slotted on the side, for passage of the grid lead wire. The shield fits snugly over the grid cap of the tube, completely shielding same. Shield is cadmium plated finish.

No. 537.....\$10.00 per C

## BRASS AND INSULATED COUPLINGS



For use on electronic equipment wherever a shaft extension is required. O.D. 3/8" x 3/4" long.

No.	Material	Type	Each
120	Brass	1/4" to 1/2"	\$0.20
140	Insulated	1/4" to 1/2"	.20
131	Brass	3/8" to 1/2"	.20

## STEEL SPADE BOLTS



Steel, cadmium plated finish, threaded 6-32, thread length 1/2", length over-all 3/4".

No. 1500.....\$8.45 per M

## BRASS AND INSULATED EXTENDERS



For use on electronic equipment wherever a shaft extension is required. Over-all length 1 1/4", shaft length 1 1/8".

No.	Material	Type	Each
130	Insulated	1/4" to 1/2"	\$0.30
150	Brass	1/4" to 1/2"	.30
132	Brass	3/8" to 1/2"	.30

## THREADED BRASS RODS

Rods ordinarily supplied in 2-foot lengths; if one-foot length is required, please specify.

No.	Size	Per Foot
1400	6-32	\$0.30
1401	8-32	.30
1402	10-32	.40
1403	1/8"-20	.45

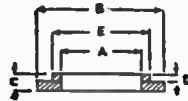
## BEARING FOR PANEL ASSEMBLY



Made of brass, and fits in 3/8" diameter hole in panels up to 1/4" thick. Bearing is made to accommodate 1/4" shafts.

No. 119.....\$0.20 each

## FIBRE SHOULDER WASHERS



- A. Inside Diameter
- B. Outside Diameter
- C. Thickness Over-all
- D. Height of Shoulder
- E. Diameter of Shoulder

No.	A	B	C	D	E	Per M
2150	.140	.375	.093	.031	.287	\$10.50
2151	.110	.250	.062	.031	.187	8.50
2152	.136	.250	.093	.031	.187	9.00
2153	.136	.312	.093	.031	.187	10.00
2154	.250	.500	.068	.028	.312	11.00
2155	.172	.375	.093	.031	.246	9.75
2156	.196	.375	.093	.031	.308	9.75
2157	.375	.750	.093	.031	.500	13.00
2158	.385	.625	.093	.031	.500	12.50

## FLAT FIBRE WASHERS

No.	I.D.	O.D.	Thickness	Per M
2160	.136	.250	1/16"	\$8.25
2161	.110	.250	1/16"	8.25
2162	.140	.375	1/16"	7.50
2163	.172	.375	1/16"	7.50
2164	.196	.375	1/16"	7.50
2165	.250	.500	1/16"	8.00
2166	.250	.500	1/16"	8.25
2167	.312	.500	1/16"	8.00
2168	.385	.625	1/16"	9.75
2169	.375	.750	1/16"	12.00



## MINI-SPRING FOR MINI-TUBES For Table Radios • Electronic Equipment Radio Receivers

The Mini-Tube guard gives support to the Mini-Tube in two ways. It maintains a direct axial pressure downwards plus a sideways support that keeps the tube upright and perpendicular to the chassis. The spring action is constant and resilient permanently. If your radio equipment has an inclined chassis . . . or the tubes are mounted upside down or horizontally . . . or if it is

subject to any vibration . . . or if your demand is constantly superior that tubes stay in place forever.

No.	Type	Per C
560	Short	\$12.00
561	Medium	12.00
562	Long	12.00
563	9-Prong	12.00

## PANEL BEARING ASSEMBLY



This panel bearing is accurately machined and is specially recommended for use as dial drives, or for mounting volume controls, switches, etc. Over-all length 1 1/8". Supplied with nut. Drive shaft 1/4" O.D.

No. 126.....\$25.00 per C

## BRASS AND INSULATED RODS

These rods are available in both brass and insulated material.

No.	Type	Length	Dia.	Each
1404	Brass	6"	1/4"	\$0.20
1405	Brass	12"	1/4"	.40
1406	Insulated	6"	1/4"	.20
1407	Insulated	12"	1/4"	.40

We are also in a position to supply brass and insulated rods of various diameters and will gladly quote upon receipt of inquiry.

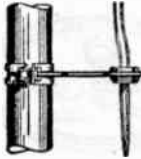
# SMITH

# Electronic Components

HERMAN H. SMITH, INC

## TELEVISION ANTENNA ACCESSORIES

### CLAMP STAND OFF FOR ANTENNA MAST



A quick method for securing the antenna line down the mast. Simply slip clamp over the mast and tighten. It is not necessary to hold the nut to tighten. For antennas already installed, open the clamp and slip it around the mast. Thirty seconds and

the operation is complete! Available in two sizes and supplied completely assembled with 3/4" screw eyes with molded polyethylene inserts as shown above for twin lead, coaxial cables or with universal insert which accommodates either twin lead or coaxial cables.

For 7/8" and 1" Masts		
No.	Type	Per C
1255	With Twin Lead Insert	\$13.00
1261	With Coaxial Insert	15.00
1266	With Universal Insert	13.00

For 1 1/8" and 1 1/4" Masts		
No.	Type	Per C
1256	With Twin Lead Insert	13.00
1262	With Coaxial Insert	15.00
1267	With Universal Insert	13.00

### LAG SCREW EXPANSION SHIELD



This expansion shield is extensively used in television antenna installations. Made of a special alloy — 100% rust-proof. Newly designed threads hold greater load and external corrugations (ribs) give additional strength on masonry. This shield is 1" long x 1/4" O.D. and takes our standard

1/4" x 1 1/4" lag screw.  
No. 1230.....\$18.00 per C

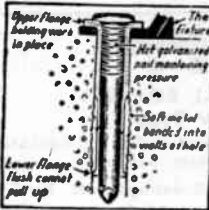
### LEAD ANCHORS FOR WOOD SCREWS



This is a new design anchor which gives greater holding power; requiring a smaller installation hole for the corresponding size screws. It takes more sizes of screws grouped in a more convenient series than other designs. It also has a larger range of holding power through various sizes of hole diameters. These anchors are 1/8" O.D., take a 10-12-14 wood screw and are forced into a 1/8" or 1/4" hole.

No.	Length	Per C
1231	1"	\$ 8.50
1239	1 1/2"	12.00

### DRIVE IN EXPANSION SHIELD



This is an expansion shield which uses nails as an expansion on locking pin. Drill 1/4" hole in the masonry and pass shield through mounting hole of object being attached so that top flange remains above fixtures. The nail, under the hammer blow, forces the lead into all the irregularities of the masonry hole, then passes through and locks anchor flange of bottom under the lead. The length of the shield is 1 1/2"

No. 1233.....\$15.00 per C

### GUY WIRE

An exceptionally high grade of steel galvanized guy wire for anchoring antenna masts. Available in two sizes, STANDARD—6 strands of No. 20; EXTRA HEAVY—6 strands of No. 18.

6 STRANDS No. 20			6 STRANDS No. 18		
No.	Each	Length	No.	Each	Length
1250	\$0.80	50-foot Coil	1271	\$1.25	50-foot Coil
1251	1.50	100-foot Coil	1272	2.50	100-foot Coil
1252	7.00	500-foot Spool	1273	12.30	500-foot Spool
1253	13.20	1000-foot Spool	1274	24.50	1000-foot Spool

This Guy Wire is also available in both sizes in 50-Foot Connected Coils, two dozen coils to the carton.

6 STRANDS No. 20		6 STRANDS No. 18	
No. 1278	\$16.50 Each Carton	No. 1279	\$22.00 Each Carton
Each Carton: 24 Coils — 1200 Feet			

### SCREW EYE STAND OFF INSULATORS With Molded Polyethylene Inserts



This screw eye has a special low-loss polyethylene insert and is specially designed for use in 800-ohm line television installations.

Twin Lead Insert		
No.	Size	Per C
1210	3 1/2"	\$6.95
1240	7 1/2"	9.00

Coaxial Cable Insert		
No.	Size	Per C
1260	3 1/2"	7.80
1270	7 1/2"	9.75

Universal Insert		
No.	Size	Per C
1265	3 1/2"	6.95
1280	7 1/2"	9.00



### MIDGET TURNBUCKLES

No.	Diameter of Bolt	Over-all Length Closed	Over-all Length Extended	List Price Each
1215	3/8"	3 3/8"	4 5/8"	\$0.21
1216	7/8"	4"	5 5/8"	.23
1217	3/8"	4 1/2"	6 3/8"	.25
1218	1/4"	5 1/2"	7 5/8"	.30
1219	7/8"	6 3/8"	9 1/4"	.50
1220	3/8"	7 1/8"	10 1/8"	.75



### EYE BOLT ASSEMBLY

This is the only Eye Bolt Anchor designed for anchoring antenna guy wire in brick or masonry. Made of 1/2" material, over-all length 2 1/2", fits into hole, closing gap 1/8". Rust-proofed. Can only be used with our No. 1220 tamping tool shown on Page U-76b.

No. 1227.....\$18.00 per C



### EYE BOLT

Sturdy steel eye bolt for use where guy wire is necessary for T.V. mast installation. Inside diameter 1 1/8", shank length 1 1/8", thread length 1 1/4".

No. 1249.....\$6.00 per C



### BRIDLE RING

Heavy duty steel bridle ring 3/4" long. Another essential item where guy wire is used in T.V. mast installation.

No. 1238.....\$8.00 per C



### ANCHOR BOLT

Rust-proofed anchor designed for lasting and permanent anchorage for fastening wall mounts and pipe straps to masonry. Free tamping tool with each 100 Bolts.

No.	Bolt Length	Per C
1246	2"	\$15.00
1247	3"	18.00
1248	4"	22.00



### WOOD SCREW ANCHOR

Especially designed to give permanent anchorage in any kind of masonry for 800-ohm and coaxial stand-offs. Tapped for wood screw. Free tamping tool with each 100 anchors.

No. 1226.....\$11.00 per C



### LAG BOLT

No.	Size	Per C
1213	1/4" x 1 1/4"	\$7.00
1257	1/4" x 2"	8.00
1258	1/4" x 3"	9.00

# SMITH

## Electronic Components

HERMAN H. SMITH, INC.

### TELEVISION ANTENNA ACCESSORIES



#### MIDGET KNIFE SWITCHES

Midget knife switches ideal for use in rear of television receiver where two antennas are used. Screw terminals placed for easy connection and two holes in each type base for mounting.

No.	Type	Type Base	Each
1241	S P S T	Porcelain	\$0.40
1242	S P D T	Bakelite	.50
1243	D P S T	Porcelain	.70
1244	D P D T	Bakelite	.80

#### ANTENNA CONNECTOR



For use as connection of auto radio antenna lead-in to auto radio receiver.

No. 1300.....\$10.00 per C

#### FUSE RETAINER



Recommended for use in auto radio power supply cables.

No. 1301.....\$15.00 per C

#### Parts for No. 1300 Antenna Connector and No. 1301 Fuse Retainer

No.	Item	Per C
1305	Male Cap for No. 1300 and No. 1301	\$2.50
1306	Female Shell for No. 1300	2.50
1307	Contact for No. 1300 and No. 1301	3.00
1308	Spring for No. 1300 and No. 1301	.50
1309	Washer for No. 1300 and No. 1301	.40
1310	Insulating Tube for No. 1301	.60
1311	Female Shell for No. 1301	5.50

#### SOLDERLESS TERMINAL LUGS

These lugs are easily applied and do not require the use of any special tool. They are designed to give a trim appearance to an otherwise unsightly wire connection. They fold neatly over the stranding and confine it directly under binding screw or nut and automatically insure greatest possible contact. The cushion-like construction of these lugs, when closed, permits binding nut or screw to sink into the soft copper and so serves the purpose of a lock nut and is therefore vibration-proof. Packed 100 per box.



No.	Wire Size	Type	Length	Per C
1459	18 to 14	Double Cup	1/8"	\$2.80
1460	18 to 10	" "	1/8"	3.00
1461	18 to 10	" "	1/8"	3.20
1462	18 to 14	Single Cup	1/4"	1.50
1463	18 to 14	" "	3/8"	1.75

#### AIRPLANE INSULATOR



White glazed, low absorption porcelain insulator 2" long.

No. 1283.....\$9.00 per C

#### ANTENNA HANK



Cotton covered copper antenna hank.

No. 1222.....\$30.00 per C

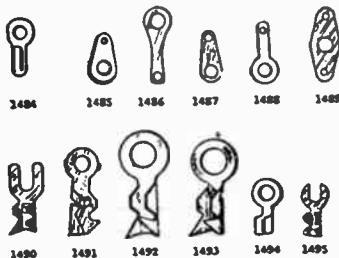
#### JUMBO FUSE HOLDERS



For use with Philco and Motorola Auto Receivers; all parts comprising bushings, springs, contacts, etc., are furnished unassembled, packed in individual envelopes.

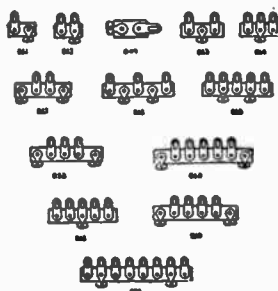
No.	Type	Length	Each
1302	For 9 Amp.	2" Long	\$0.25
1303	For 14 Amp.	2 1/2" Long	.30

#### SOLDER TYPE LUGS Brass Hot Tinned



No.	Length	Hole	Per M
1484	5/8"	No. 6	\$ 7.00
1485	3/4"	No. 6	6.00
1486	7/8"	No. 6 & No. 8	6.00
1487	1"	No. 6	4.00
1488	1 1/8"	No. 6	8.00
1489	1 1/4"	No. 6	8.00
1490	1 1/2"	No. 8	10.00
1491	1 3/4"	1/4"	12.00
1493	1 7/8"	1/4"	20.00
1492	1 3/4"	1/4"	20.00
1494	1 1/2"	No. 6 & No. 8	7.50
1495	1 1/4"	No. 8	7.00

#### TIE DOWN TERMINAL STRIPS



No.	Per C	No.	Per C
849	\$2.75	865	\$5.50
853	5.50	866	5.60
860	8.25	867	4.60
861	2.50	868	5.90
862	2.60	869	6.80
863	3.40	870	8.30
864	4.00		



#### TERMINAL BOARDS Screw Type

Brass, hot tinned lugs mounted on 1/8" bakelite. Lugs are spaced 1/8" center to center.

No.	Terminals	Mounting Center	Per C
872	2	1 1/4"	\$10.00
873	3	1 3/4"	15.00
874	4	2 1/4"	20.00
875	6	2 3/4"	25.00
876	6	3 1/4"	30.00
877	7	3 1/2"	35.00

#### TERMINAL LUGS AND SCREWS



1478 1479

Recommended for heavy duty terminal strips. Lugs are tapped with screw inserted. No. 1478 lug, brass, cadmium plated and No. 1479 lug, brass, hot tinned.  
No. 1478.....\$3.50 per C  
No. 1479..... 6.00 per C

GENERAL



CEMENT

RADIO CEMENTS FOR ALL PURPOSES



**G-C RADIO SERVICE CEMENT**

The best Cement for repairing radios and speakers. Excellent for repairing and replacing torn cones. Vibration-proof, water-proof and fast drying. Brushes attached.

No.		List
30-2	2-oz.	\$0.60
34-2	Tube	.50
30-4	4-oz.	1.00
30-6	6-oz.	1.40
30-8	8-oz.	1.75
30-16	16-oz.	3.30

**G-C RADIO SERVICE SOLVENT**

Best Solvent for loosening cement on speaker cones, frames, etc. Will dissolve all cements on speakers. Brush attached.

No.		List
31-2	2-oz.	\$0.50
31-4	4-oz.	.85
31-6	6-oz.	1.00
31-8	8-oz.	1.25
31-16	16-oz.	1.75

**G-C CEMENT THINNER**

Made of same solvents as G-C Service Cement. Best thinner for all cements.

No.		List
28-2	2-oz.	\$0.50
28-4	4-oz.	.85
28-8	8-oz.	1.25
28-16	16-oz.	1.75

**G-C SPEAKER CEMENT**

Best grade cement put up in handy tubes. For radio and speaker repairs. Water-proof, vibration-proof, fast drying.

No.	List
34-2 2-oz. Tube	\$0.50

**G-C PLASTIC CEMENT**

For cementing broken plastic cabinets, knobs, dial and crystal assemblies, grille cloth, etc. Fast drying. Brush attached.

No.	List
32-2A 2-oz.	\$0.60
32-8A 8-oz.	1.75
32-16A 16-oz.	3.30



**G-C BAKELITE CEMENT**

For cementing bakelite to bakelite and bakelite to other materials. For repairing knobs, cabinets, panels, for inserts in moldings, attaching labels to plastics, etc. Brush attached.

No.		List
32-2	2-oz.	\$0.65
32-8	8-oz.	2.20
32-16	16-oz.	4.15

**G-C VINYLITE CEMENT**

Clear transparent adhesive, air drying. For cementing metals, plastics, paper, leather, etc. Used also as thermoplastic cement for non-porous materials. Sets on cooling. Brush attached.

No.		List
58-2 2-oz.	\$0.60	
58-8 8-oz.	1.75	

**G-C HOUSEHOLD & MODEL CEMENT**

Best cement for model makers, household, and office use. For airplanes, railroads, ships, toys, etc. Will cement wood, paper, plastics, metal, china, ceramics, etc. Fast drying, water-proof. Brush attached.

No.	List
45-2 2-oz.	\$0.50
45-3 Tube	.50

**G-C FABRIC TO METAL CEMENT**

For cementing cloth and felt to metal or plastics. Best for grille cloth, phono turntable felts, upholstery, fabrics, etc. Fast drying, water-proof.

No.		List
22-4	4-oz.	\$0.70
22-8	8-oz.	1.25
22-16	16-oz.	2.25

**G-C GRAY RUBBER CEMENT**

General purpose for cloth, paper, rubber, etc. Has great tackiness and adhesion for radio, shop, auto, or hobby use.

No.		List
23-4	4-oz.	\$0.70
23-8	8-oz.	1.25
23-16	16-oz.	2.25

**G-C GRILLE CLOTH CEMENT**

Rubber base cement for grille cloth, leatherette, fabric, upholstery, etc. Will not penetrate, stain, or shrink.

No.		List
38-4	4-oz.	\$0.70
38-8	8-oz.	1.25
38-16	16-oz.	2.25



**G-C RUBBER TO METAL DIAL CEMENT**

For cementing rubber drives to shafts, rubber mountings, gaskets, hose, weather stripping, for radios, refrigerators, autos, etc.

No.		List
35-2	2-oz.	\$0.60
35-3	Tube	.50
35-4	4-oz.	1.00
35-8	8-oz.	1.75
35-16	16-oz.	3.30

**G-C WOOD GLUE**

New white resin water-proof glue for radio cabinets, furniture, chairs, etc. Will not injure finish. Extra strong.

No.		List
39-2	2-oz.	\$0.60
39-4	4-oz.	1.00
39-8	8-oz.	1.25
39-16	16-oz.	1.95

**G-C ELECTRICAL AND RESISTOR CEMENT**

Heat-proof cement, hardens like porcelain. Same as on resistors, flat irons, etc.

No.	List
27-2 2-oz.	\$0.60

**G-C FILM CEMENT**

New improved cement for all safety and nitrate film. Sets fast. Brush attached.

No.	List
33-1 1-oz.	\$0.45

**G-C ACRYLIC CEMENT**

Welds and cements lucite, plexiglass, and other acrylic materials. Strong, fast drying. Brush attached.

No.	List
40-2 2-oz.	\$0.60

**G-C LABEL CEMENT**

Sticks labels to anything — metal, glass, wood, tin, bakelite, plastics, etc. Good for cementing labels to bins, racks, water-proofing labels, etc.

No.	List
46-2 2-oz.	\$0.60
46-8 8-oz.	1.75



**G-C ART-X RUBBER CEMENT**

Transparent, pure, real rubber cement for artist and layout work. Will not stain or shrink paper, can be easily removed. Handy for panel layout, photo mounting, etc.

No.		List
33-4	4-oz.	\$0.50
33-8	8-oz.	.75
33-16	16-oz.	1.25

**G-C No. 67 PAINT THINNER**

For Ruf-Koat, Krome-Koat, B-K Cement, Insulating Varnish, Rubber Cements, and ordinary paints.

No.		List
67-2	2-oz.	\$0.50
67-4	4-oz.	.85
67-8	8-oz.	1.25
67-16	16-oz.	1.75

**G-C Q-DOPE THINNER**

Will cut and dissolve Q-Dope and other polystyrene coil dopes and cements. Will soften and weld polystyrene rods, tubes, sheets, etc.

No.		List
41-2	2-oz.	\$0.50
41-4	4-oz.	.85
41-8	8-oz.	1.25

**G-C LACQUER THINNER**

Will thin all lacquers, lacquer enamels, telephone black or gray, touch-up lacquers, airplane dopes, model cements, etc.

No.		List
29-2	2-oz.	\$0.50
29-4	4-oz.	.85
29-8	8-oz.	1.25
29-16	16-oz.	1.75

**G-C CEMENT SAMPLER KIT**

What kind of cement shall I use? Get this kit and experiment with all types of cements available. Cements for all applications included so you can try them yourself for your application. 10 — 2-oz. bottles in Kit.

No.	List
345 Kit	\$6.00

**G-C Pli-O-BOND CEMENT**

Sticks anything to anything. Cold setting, rubber-like, thermoplastic cement that dries rapidly with a flexible and very strong bond. For iron, steel, plastics, glass, cloth, plastic fabrics, etc.

No.	List
43-2 2-oz.	\$0.75
43-8 8-oz.	1.75
43-16 16-oz.	3.30



**G-C COIL DOPE KIT**

For high frequency coils, ultra low loss. Contains 2-oz. bottle Polystyrene Q-Dope, 2-oz. Thinner, and 2 brushes. The best!

No.	List
888 Kit	\$1.00

**G-C CEMENT & SOLVENT KIT**

"Handy to carry with you." Contains bottle G-C Radio Cement and G-C Solvent, with brushes.

No.	List
343 Kit	\$0.75

**G-C CONTACT & ATTENUATOR KIT**

For cleaning and lubricating attenuator, tunners, contacts, all-wave switches, condenser bearings, etc. Eliminates noise and prevents corrosion.

No.	List
777 Kit	\$1.15

**G-C INSULATING & DIPPING VARNISH**

For treating field coils, noisy or buzzing transformers and chokes. Air dries to a tough insulating film. Can be brushed or dipped.

No.	List
56-2 2-oz.	\$0.60
56-4 4-oz.	.95
56-8 8-oz.	1.50
56-16 16-oz.	2.50

**G-C LIQUIDOPE**

All wave nitrocellulose base dope for coils. Air dries fast to tough film, that insures toughness and firmness. Use for sealing, doping, supporting coils, etc.

No.	List
36-2 2-oz.	\$0.60
36-8 8-oz.	1.75
36-16 16-oz.	3.00

**G-C Q-DOPE**

Liquid polystyrene ultra low loss coil dope for RF, UHF, and VHF components. Will not change R.F. circuit values. Performs — 70°F to 180°F. Also use as Polystyrene Cement.

No.	List
37-2 2-oz.	\$0.60
37-4 4-oz.	1.00
37-8 8-oz.	1.75
37-16 16-oz.	3.00



**G-C FUNGUS VARNISH**

Used on radio equipment and instruments to insulate and prevent fungus growth in moist or humid climates. Air dry, brush or spray.

No.	List
57-2 2-oz.	\$0.60
57-8 8-oz.	1.50
57-16 16-oz.	2.50

**G-C CONTACT & CRYSTAL CLEANER**

Extra pure cleaner. Fast drying for cleaning contacts and crystals. Will not injure delicate parts.

No.	List
127-2 2-oz.	\$0.50
127-4 4-oz.	.85
127-8 8-oz.	1.00
127-16 16-oz.	1.50

**G-C RED ELECTRONIC CONTACT CLEANER**

The best and only all-purpose cleaner. Dissolves the dirt and removes corrosion. Leaves protective film on contacts to prevent corrosion.

No.	List
210-2 2-oz.	\$0.50
210-4 4-oz.	.85
210-8 8-oz.	1.15
210-16 16-oz.	2.00

**G-C RADIO CHASSIS CLEANER**

Clean the chassis and make extra money on every repair job. Satisfies your customer. For radio chassis, panels, testers, etc. Non-explosive cleaner.

No.	List
123-8 8-oz.	\$0.85
123-16 16-oz.	1.35
123-G 1 Gal.	4.75

**G-C CARBON TETRA-CHLORIDE**

100% pure for cleaning and degreasing electrical contacts, controls, motors. Absolutely safe — will not burn. Also kills bugs, roaches, etc.

No.	List
211-2 2-oz.	\$0.50
211-4 4-oz.	.75
211-8 8-oz.	1.00
211-16 16-oz.	1.75
211-32 32-oz.	3.00
211-G 1 Gal.	6.25

**G-C CONTACT DOPE**

Ideal cleaner and lubricant for switches, controls and contacts. Resists corrosion and oxidation. Eliminates noise.

No.	List
1213 Tube	\$0.40
1214 2-oz.	.60

**CARB-O-TET**

Specially made from 100% Carbon-Tet materials.

215-G 1 Gal.	\$4.15
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**G-C CARBON CONTROL CLEANER**

Fix noisy carbon controls without taking apart. Just squirt cleaner along shaft and job is done. Save money. Applicator supplied.

No.	List
212-2 2-oz.	\$0.60

**G-C GRAFOLINE**

Noiseless lubricant for air exposed switch contacts, rheostats, relays, wire volume controls, tube prongs, etc. Increases current capacity of switch controls. Cleans also.

No.	List
120-2 2-oz.	\$0.60

**G-C CARBON-X**

New improved formula. Fix those old noisy carbon controls, touch up noisy spots on worn controls. Brush in bottle.

No.	List
1204 1-oz.	\$0.75
1205 2-oz.	1.00

**G-C LUBE-REX**

Lubriplate — white lubricant for push buttons, phonographs, Philco mystery controls, guns, fishing reels, dials, etc. Prevents corrosion, repels water.

No.	List
1206 2-oz. Tube	\$0.60
1209 2-oz. Bottle	.60

**G-C SILICONE COMPOUND**

"The miracle moisture and water-proofing compound for Television and FM" A permanent water-proofing material for TV and FM leads.

No.	List
81001-oz. Tube	\$1.65
Dealer's Net	.99

**G-C LIQUID SOLDER FLUX**

Non-corrosive flux for radio and electrical work. Solders faster, smoother.

No.	List
42-2 2-oz.	\$0.60
42-8 8-oz.	1.75

**G-C CHEMICAL LABORATORY**



Complete assortment of 20 popular radio chemicals and cements in 2-oz. bottles put up on steel rack. Very neat for the radio bench and home work shop. Rack sets on bench or hangs on wall. Steel Rack FREE.

No. 997 Lab	List \$11.65
Dealer's Net:	6.99

**G-C DELUXE CHEMICAL LAB**



Practical larger laboratory of popular chemicals and cements to fit needs of average shop — 2-oz., 4-oz., and 8-oz. bottles. Larger bottles of more popular items. Rack sets on bench or hangs on wall. Steel rack is FREE.

No. 998 Lab	List \$15.55
Dealer's Net:	9.33

**G-C CHEMICAL KIT**



Pocket size kit of 8 popular radio chemicals and cements, for fast repairs on the job. Put up in neat leatherette case. Easy to carry.

No.	List
999	\$3.30
(Refills available at your jobbers)	

**G-C ELECTRONIC HYPODERMIC NEEDLE INJECTOR**



A handy applicator on the hypodermic principle; for injecting cleaners and oils into tight places. Supplied with 2-oz. bottle.

No.	List
8383 Hypodermic Needle	\$0.75

**G-C DE-OX-ID\* "Miracle Contact Cleaner"**



Liquid chemical for all electronic contacts and controls. It cleans, lubricates, and preserves. Recommended for volume and tone controls, relay contacts, push buttons, etc. Dissolves corrosion and oxidation.

No.	List
19-1 1-oz.	\$0.85
19-2 2-oz.	1.60
19-16 16-oz.	12.50
* Trade Mark Reg. Licensed by DE-OX-ID Laboratories.	

GENERAL



CEMENT

PAINTS—KITS—COMPOUNDS



**G-C RUF-KOAT WRINKLE VARNISH**  
Air Dry or Bake

The only finish that will air dry and give professional wrinkle job without baking. Same as used by leading manufacturers. Don't experiment — use the best. Apply and let dry. Colors: Black, Gray, Brown, Green, Red and Blue (Specify Color).

No.	2-oz.	List
60-2	2-oz.	\$0.60
60-4	4-oz.	1.00
60-8	8-oz.	1.75
60-16	16-oz.	3.00

**G-C KRYSAL KOAT CRYSTAL LACQUER**

Makes beautiful floral pattern when dry. Strictly air drying. For chassis, panels, decorations on metal, wood, paper, etc. Colors: Black Gray, Brown, Green, Red, Blue and Clear. (Specify Color).

No.	2-oz.	List
63-2	2-oz.	\$0.60
63-4	4-oz.	1.00
63-8	8-oz.	1.95
63-16	16-oz.	3.75

**G-C TELEPHONE BLACK OR GRAY**

High grade lacquer enamel covers well, dries fast. Black is satin ebony finish similar to telephones. Gray is pleasing shade. For panels, racks, parts, etc. (Specify Color).

No.	2-oz.	List
62-2	2-oz.	\$0.60
62-8	8-oz.	1.75
62-16	16-oz.	3.00

**G-C TELEVISION HIGH VOLTAGE CORONA DOPE**

Used by manufacturers and service men to prevent corona shorts on high voltage circuits in Television sets. Easy to apply, air-drying. It has very excellent high voltage insulating qualities.

No.	2-oz.	List
44-2	2-oz.	\$0.60
44-8	8-oz.	1.75
44-16	16-oz.	3.30



**G-C KRONE-KOAT ALUMINUM PAINT**

Fast drying, ready mixed, leaves chrome-like finish. For PA equipment, speakers, chassis, towers, antennas, etc.

No.	2-oz.	List
61-2	2-oz.	\$0.60
61-4	4-oz.	.95
61-8	8-oz.	1.75
61-16	16-oz.	2.50

**G-C PORCELAIN GLAZE**

Fills in nicks and dents on porcelain and duco refrigerators, sinks, washing machines, etc. Fill in and let dry.

No.	2-oz.	List
911	2-oz.	\$0.65
911-16	16-oz.	3.85

**G-C SPIRIT VARNISH**

Fast drying walnut spirit varnish for touching up nicks and scratches. Will not raise the finish.

No.	2-oz.	List
161-2	2-oz.	\$0.60
161-4	4-oz.	1.00
161-8	8-oz.	1.75

**G-C PENETRATING STAIN**

Spirit type stain, penetrates and will not injure finish. Cover scratches, dents, darken corners on cabinets, etc. Walnut and Mahogany. Specify.

No.	2-oz.	List
162-2	2-oz.	\$0.50
162-4	4-oz.	.85
162-8	8-oz.	1.40

**G-C MICROPHONE CARBON GRANULES**

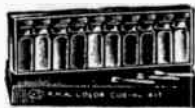
Polished pure carbon granules for microphones.

No.	List
1281 100 Size	\$1.00
1282 80 Size	1.00
Best for General Use	
1283 60 Size	1.00
Best for Hard Use — Sound Trucks, etc.	

**G-C SCRATCH REMOVER LIQUID**

New liquid! Removes scratches instantly. Simply wipe over scratches. Handy to have in tool box.

No.	2-oz.	List
917	2-oz.	\$0.50
923	1/2-oz.	.30



**G-C RMA COLOR CODING KIT**

Complete kit of all standard RMA colors to code resistors, condensers, parts, etc. Chart included. Ten bottles.

No. 677	List \$1.95
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**G-C TOUCH UP CODING KIT**

Five bottles, 4 colors and solvent for coding and sealing parts, adjustments, wires, etc. Red, Green, Blue, Yellow and Solvent.

No. 675	List \$1.00
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**G-C DIAL LITE COLOR KIT**

Long lasting coloring for dials, signals, lamps, panels, hobby work, etc. Red, Green, Blue, Amber, Purple and Solvent in kit.

No.	Kit	List
66-6	Kit	\$1.10
66-5	Kit no purple	.95
66-2	2-oz. (Specify color)	.60
66-16	16-oz. (Specify color)	2.50

**G-C LUMINOUS KITS**

Complete kits of luminous paint that glows in the dark. Many uses in shop and home. See it at night. Easy to use — apply and let dry.

No.	List
184-0 DeLuxe kit contains Powder, Mix-Koat, Top Koat and Brush.	\$2.75
184-1 Regular kit contains Powder, Mix-Koat and Brush.	\$1.65

**G-C LUMINOUS MATERIALS**

No.	1-oz.	List
185-1	1-oz.	\$0.95

**COVER-KOAT**  
To protect and cover luminous material.

No.	2-oz.	List
187-2	2-oz.	\$0.60

**MIX-KOAT**  
To mix with powder.

No.	2-oz.	List
186-2	2-oz.	\$0.60
186-8	8-oz.	1.45

**MIX-KOAT AND COVER-KOAT THINNER**

No.	2-oz.	List
188-2	2-oz.	\$0.60



**G-C DIAL OIL**

Made with graphite. Special for lubricating dials, drives, and fine mechanisms. Long lasting.

No. 1245	4-oz.	List \$0.50
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**G-C REFRIGERATOR AND APPLIANCE OIL**

Non-gumming oil for household appliances and small motors. The best general purpose oil.

No. 1250	4-oz.	List \$0.50
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**G-C SOLDERING PASTE**

The best non-corrosive paste for radio and electrical work. Solders faster and smoother.

No. 1207	2-oz. can	List \$0.40
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**G-C NON-STICK IRON TIP COMPOUND**

Prevents soldering iron tips from burning into iron. Saves your iron and tips.

No. 1201	2-oz.	List \$0.60
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**G-C SILVER PRINT**

"Same as used for Printed Circuits"

"No more wires" when you use G-C Silver Print. It is the same "Pure Silver" compound as used by manufacturers in Printed Circuit design. You need G-C Silver Print to repair those Printed Circuits, to touch up the circuit around eyelets, rivets, parts, etc. It is also handy for experimenters, engineers, laboratories, etc. Yes, it is a Pure Silver compound and it's air drying.



No. 21-2	1-Troy oz.	List \$6.00
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GENERAL



CEMENT

CABINET REPAIR KITS — POLISHES



**G-C FRENCH EMULSION**

Best pad lubricant to use with French Varnish Polishing Method.

No.	List
164-4	4-oz. \$0.75

**G-C FRENCH VARNISH**

Used by craftsmen to repair furniture and blend in the finish. Can be applied with pad, brush or spray. Dries fast.

No.	List
160-2	2-oz. \$0.60
160-4	4-oz. 1.00
160-8	8-oz. 1.75

**G-C WINDOW CLEANER CONCENTRATE**

Mix with quart of water and make your own high-grade window cleaner. Makes glass sparkle.

No.	List
122-5	6-oz. \$0.50

**G-C SPOT CLEANER**

Safe high-grade cleaner with special applicator in cap. Non-explosive.

No.	List
124-2	6-oz. \$0.60

**G-C STRIP-X**

Strips enamel from magnet wire. Dip wire in and wipe insulation off—ready for soldering.

No.	List
26-2	2-oz. \$0.60

**G-C CONE RECONDITIONER**

Apply to old dried out cones to restore plasticizer and bring back original tones.

No.	List
25-8	8-oz. \$0.95
25-16	16-oz. 1.65



**G-C RUBBING OIL**

Rub down newly finished or repaired cabinets to produce rich satin sheen finish.

No.	List
163-16	16-oz. \$0.85

**G-C FLOOR WAX**

High-grade heavy duty commercial self-polishing floor wax. Gives hard, durable finish.

No.	List
97-G	1 Gal \$6.55

**G-C LEMON OIL POLISH**

Inexpensive polish for removing dust, finger marks, treating dust rags, mops, etc. Picks up dust.

No.	List
91-8	8-oz. \$0.60
91-16	16-oz. .85

**G-C SCRATCH REMOVER POLISHES DARK**

Polish contains stains to remove scratches. Sell to housewives.

No.	List
92-2	2-oz. \$0.45
92-8	8-oz. .60
92-8-L	8-oz. Lab. size .60
92-16	16-oz. 1.00

**G-C SCRATCH REMOVER POLISHES LIGHT**

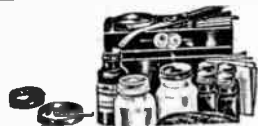
For light woods; polishes and removes scratches at same time. Popular with housewives.

No.	List
93-2	2-oz. \$0.45
93-8	8-oz. .60
93-16	16-oz. 1.00

**G-C CREME-O-WAX POLISH**

White non-staining hard wax base polish produces a hard glossy finish. Excellent for radios, pianos, refrigerators, furniture, etc.

No.	List
95-2	2-oz. \$0.45
95-8	8-oz. .60
95-8-L	8-oz. Lab. size .60
95-16	16-oz. 1.00



**G-C REFRIGERATOR PATCH KIT**  
"New Improved Kit"

Supplies everything necessary to repair porcelain or Duco nicks, dents, or scratches. Kit contains bottle of pure white lacquer enamel and bottles of Yellow, Blue, Brown, and Black tinting colors, solvent, spatula, porcelain patch stick, sandpaper, and brushes. Useful on refrigerators, washers, ranges, table tops, etc. Directions included.

No. 902	List \$4.35
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**G-C DELUXE CABINET REPAIR KIT**  
"New Improved Kit"

Comes in handy metal box. Contains ten shades of shellac sticks, bottles of light and dark oil stain, bottles of metal shading varnish, polish, General Scratch Stik, alcohol lamp (with alcohol), spatula, small brushes, steel wool, sandpaper, and wiping cloth. Everything necessary for a practical repair job. No special skill required. Directions included.

No. 901	List \$5.45
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**G-C MASTER DELUXE CABINET REPAIR KIT**  
"New, Most Complete Kit"

A complete cabinet repair kit put in a permanent metal box. All finishes supplied are spirit soluble and will not cut or damage surrounding finishes on cabinets, etc. Kit contains 10 shellac sticks, alcohol lamp, French varnishes, rubbing felt and fluid, enamels, glue, steel wool, sandpaper, polish, directions, etc. Nothing else needed! The best buy on the market!

No. 900	List \$9.95
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**G-C FRENCH VARNISH KIT**

Kit for French polishing. Only way to blend repairs with adjoining finish. Kit includes varnish, emulsion, pad, and instructions.

No. 160-0	List \$1.40
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**G-C MAGIC SCRATCH KIT**

Combination of 6 shades fillers and light and dark scratch fluid. Easy to use on emergency jobs.

No. 915	List \$1.40
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**G-C MASTER CABINET TOUCH-UP KIT**  
"Ideal Quick Touch-Up Kit"

A complete, fast touch-up kit for repairing scratches and dents. Works on wood and plastic cabinets. The spirit finishes will not cut into the adjoining surface or injure surrounding finish. Contains French varnish, emulsion, colored enamels, stains, polishes, and filler. Sandpaper, steel wool, rubbing cloth and directions included. Brushes attached to caps of all finish bottles. Put up in metal box.

No. 907	List \$3.25
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**G-C RADIO-REFRIGERATOR CABINET PATCH KIT**  
"New Improved Kit"

A kit of the shellac patch sticks to fill all needs. Patches wood, plastics, bakelite and porcelain. Nine shellac sticks for the light and dark shades of wood, and black and white, alcohol lamp (with alcohol), spatula, steel wool, sandpaper and wiping cloth are packed in the metal box. Directions included.

No. 903	List \$4.00
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GENERAL



# GRILLE CLOTH—FLOCK KITS



### G-C TOUCH-UP KIT

Practical for touching up small scratches and dents. Includes light and dark varnish and spirit stains, filler, cloth, brushes, etc.

No. 505	Kit	List \$1.10
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### G-C PLASTIC TOUCH-UP KIT

Kit contains 6 colors touch-up lacquer enamels to fix up plastic and colored cabinets. Walnut, Ivory, Black, Red, Blue, Green, and brushes.

No. 917	Kit	List \$1.70
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### G-C PORCELAIN PATCH STICK

Made for white porcelain refrigerators, sinks, ranges, fixtures, etc. Simply melt into nick and smooth off.

No. 908	Stick	List \$3.40
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### G-C SHELLAC STICK KIT

Handy assortment of 10 colors to take care of any shade of wood. Same as in G-C Kits.

No. 925	Kit	List \$1.00
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### G-C SHELLAC STICKS

High grade sticks for filling dents and nicks in wood cabinets and furniture. Sticks 7" long.

No.	Color	List	No.	Color	List
929	Lt. Walnut	\$0.50	979	Dk. Oak	\$0.50
930	Dk. Walnut	.50	980	Transparent	.50
933	Black	.50	981	Lt. Transp.	.50
934	White	.50	982	Walnut	.50
935	Maple	.50	983	Mahogany	.50
973	Lt. Oak	.50	984	Blonde Maple	.50



### G-C FELT KOAT FLOCK KIT

New G-C kit with special blower gun. Distributes flock evenly and applies a thick velvet-like coat. Kit is complete with gun, brown and ivory flock, brown and ivory undercoat, thinner, brush, etc. Gives professional job on turntables, cabinets, grilles, tool boxes, toys, signs, etc. Has thousands of applications.

No. 180-2	Kit	List \$11.50
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### G-C FELT KOAT KITS

Complete flock kit with flock undercoat, thinner and brushes and shaker type can for applying flock. Colors: Brown, Blue, Taupe, Black, Red, Green and Gold. (Specify Color).

No.	Kit	List
180-0	DeLux	\$3.00
180-1	Reg. Kit (No brush or thinner)	2.15

### G-C FLOCK BLOWER GUN

It's easy to apply flock and be sure to get a good job with the G-C Patented Gun. Gun can also be used for dusting and cleaning.

No.	Gun	List
180-3	Gun	\$4.35
180-4-N	Cleaning Nozzle for Gun	.65

### G-C FLOCK UNDERCOAT

Material is first applied on surface to be flocked. Then flock is applied. Used on metal, wood, paper, etc. Colors: Brown, Taupe, Blue, Black, Ivory, Red, Green, Silver and Gold. (Specify Color).

No.	Size	List
180-4	4-oz.	\$1.10
180-8	8-oz.	1.95
180-16	16-oz.	3.00

### G-C RUBBER BASE UNDERCOAT

Use as flock sizing on fabrics, upholstery, turntables, etc. Makes pliable coating.

No.	Size	List
182-4	4-oz.	\$1.00
182-8	8-oz.	1.75
182-16	16-oz.	2.50

### FLOCK SIZING THINNER

For #	Undercoat	List
181-4	4-oz.	\$0.45
181-8	8-oz.	.60
181-16	16-oz.	.85



### G-C FELT-KOAT FLOCK

Genuine Rayon Flock, 1/8" length fibers accurately cut, give beautiful even finish. One pound covers approximately 90 sq. ft. Colors: Brown, Taupe, Blue, Black, Ivory, Red, Green, Silver, and Gold. (Specify Color).

No.	Size	List
180-5	2-oz. Can	\$1.10
180-6	1/2-lb. Bag	3.25
180-7	1-lb. Bag	5.50

### G-C GENERAL SCRATCH STICK

Removes scratches. Simply run over scratches and they will disappear. Handy to carry in your pocket or tool box for emergency repairs. Also sell to housewives.

No.	Stick	List
909	Scratch Stik	\$0.40
909-D	Display 12 Stiks	4.80

**1-A SKRATCH STIK DEAL — WIRE DISPLAY FOR DEALERS**  
Dealers and servicemen — Display the No. 1-A Skratck Stik deal in your shop or store and sell Skratck Stiks to your customers. Every home and office needs pne. You can earn extra profit with this self-selling display.  
No. 1-A Deal 12 Skratck Stiks Wire Display  
List \$5.35  
Dealer's Net 2.89\*

### G-C TELEVISION LENS AND TUBE CLEANER

Specially prepared cleaner for Television Lens and Tubes. Eliminates marks and spots and makes tube and lens crystal clear.

No.	Size	List
216-8	8-oz.	\$0.75
216-16	16-oz.	1.25

### G-C INSTRUMENT FABRIC

Leatherette fabric to cover cabinets and instruments. Same as used by manufacturers. Colors: Black and Brown. (Specify Color).

No.	Size	List
966	18" x 32"	\$1.65
967	Any length, per yard	3.05



### G-C CABINET SPEAKER GRILLE CLOTH

Beautiful modern patterns of Brown, Gold and light colors to match Walnut, Mahogany and Ivory cabinets. Specify "Ivory" when ivory is wanted.

No.	Size	List	No.	Size	List
940	18" x 20"	\$1.35	954	5" x 10"	\$0.35
941	9" x 18"	.60	949-1	1-Yd. Pkga., 40" Wide	5.75
942	12" x 12"	.65	949-1R	40" Wide Cont. lgth., per yd.	5.45
943	14" x 18"	.70	949-2R	50" Wide Cont. lgth., per yd.	6.25
944	24" x 13"	.90	950	Roll 9" x 12"	.50
945	18" x 13"	.70			
946	8" x 8"	.30			
947	9 1/2" x 10"	.30			
948	8" x 8"	.25			

### G-C SPARKLE GRILLE CLOTH

Juke box metallic grille cloth. Beautiful gold pattern. Sparkles in the light. Very good for ivory cabinets also.

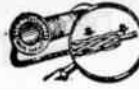
No.	Size	List
957	Large Pattern, per Yd.	\$10.00
959	Small Pattern, per Yd.	10.00

### G-C METAL FLOCKED GRILLE SCREEN

Very popular. Both sides flocked with rayon over galvanized metal screen. Used on radios, P.A. speakers, intercoms, auto radios, etc. Waterproof, durable. Colors: Brown, Ivory, Maroon.

No.	Size	Color	List
951-1	8" x 11"	Brown	\$0.85
951-3	8" x 11"	Ivory	.85
951-5	8" x 11"	Maroon	.85
952-1	18" x 24"	Brown	2.90
952-3	18" x 24"	Ivory	2.90
952-5	18" x 24"	Maroon	2.90
953-1	36" x 86"	Brown	8.95
953-3	36" x 86"	Ivory	8.95
953-5	36" x 86"	Maroon	8.95

# GENERAL CEMENT RADIO DIAL CORDS and CABLES



## THE THREE MOST POPULAR CORDS USED

**G-C No. 75  
STANDARD THIN  
NYLON CORD**  
.028" diam. Most popular; used on 95% of sets. Braided nylon over fibre glass core. In plastic container.

No.	Spool	List
75-25	25 ft.	\$1.25
75-50	50 ft.	2.40
75-100	100 ft.	4.50
75-11	Env.	.40

**G-C No. 75-A  
EXTRA THIN  
NYLON CORD**  
.025" diam. Used on RCA, GE, Strom-Carl, etc. Braided nylon over fibre glass core. In plastic container.

No.	Spool	List
75A-25	25 ft.	\$1.25
75A-50	50 ft.	2.40
75A-100	100 ft.	4.50
75A-11	Env.	.40

**G-C No. 74  
MEDIUM  
NYLON CORD**  
.040" diam. Very popular; used by RCA, Philco, GE, etc. Braided nylon over fibre glass core. In plastic container.

No.	Spool	List
74-25	25 ft.	\$1.25
74-50	50 ft.	2.40
74-100	100 ft.	4.50
74-11	Env.	.40

**G-C No. 70  
BRAIDED  
BRONZE CABLE**  
.040" diam.; used on radio dials, instruments and for aircraft reel-in antenna cable. Phosphor bronze braided over fibre glass core for strength. In plastic container.

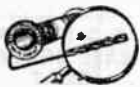
No.	Spool	List
70-25	25 ft.	\$1.25
70-50	50 ft.	2.40
70-100	100 ft.	4.50
70-11	Env.	.40

**G-C No. 71  
42-STRAND  
BRONZE CABLE**  
.040" diameter; 42 strands twisted phosphor bronze over fibre glass core. Radio dials, aircraft reel-in antennas, etc. Durable and flexible. In plastic containers.

No.	Spool	List
71-25	25 ft.	\$1.25
71-50	50 ft.	2.50
71-100	100 ft.	4.50
71-11	Env.	.40

**G-C No. 73  
HEAVY  
NYLON CORD**  
.062" diameter; used on Philco, Majestic, Brunswick, etc. Very strong, chemically treated to prevent slipping. In plastic container.

No.	Spool	List
73-25	25 ft.	\$1.50
73-50	50 ft.	2.75
73-100	100 ft.	5.00
73-11	Env.	.40



**G-C No. 76  
SPECIAL THIN  
BRONZE CABLE**  
.025" diam. braided bronze as used on GE, RCA, and others. Also for flexible connections on speakers, cones, etc. In plastic container.

No.	Spool	List
76-25	25 ft.	\$1.25
76-50	50 ft.	2.40
76-100	100 ft.	4.50
76-11	Env.	.40

**G-C No. 73-X  
EXTRA HEAVY  
NYLON CORD**  
.072" diameter. Extra heavy cord as used by Philco and others. Chemically treated to prevent slipping. In plastic container.

No.	Spool	List
73X-25	25 ft.	\$1.50

**G-C No. 78  
BRAIDED  
LINEN CORD**  
.040" diameter, same as used on Emerson radios, instruments, drawing boards, etc. Extra strong and durable. In plastic container.

No.	Spool	List
78-25	25 ft.	\$1.25
78-50	50 ft.	2.40
78-100	100 ft.	4.50
78-11	Env.	.40

**G-C No. 79  
MONEL  
METAL CABLE**  
.085" diam. Strong and durable, non-corrosive cable for radio dials and instruments. Preferred by many to bronze cable. In plastic container.

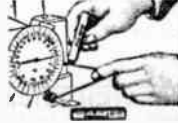
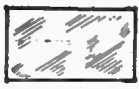
No.	Spool	List
79-25	25 ft.	\$1.25
79-100	100 ft.	4.50

**G-C No. 80  
EXTRA THIN  
METAL CABLE**  
.015" diameter. Very strong twisted steel cable. Popular on foreign and export receivers, instruments, dials, etc. In plastic container.

No.	Spool	List
80-25	25 ft.	\$1.25
80-100	100 ft.	4.50

**G-C No. 82  
EXTRA THIN  
PHOSPHOR  
BRONZE CABLE**  
.012" diam. twisted of 7 strands .004" phosphor bronze. Used on dial instruments and Army and Navy Radar Equipment. In plastic container.

No.	Spool	List
82-25	25 ft.	\$1.25
82-100	100 ft.	4.50



**G-C PLASTIC  
CRYSTAL**

Clear plastic crystal in flat sheet. For radio dials, clocks, dashboards, etc. Can be cut to size, fitted and cemented in place.

No.	List
92 8" x 10"	\$1.45

**G-C NON-SLIP  
COMPOUNDS**

**Powder Compound**  
For dials, cords, pulleys, belts. Prevents slipping.

No.	List
1210 2-oz.	\$0.50

**Liquid**  
Penetrating liquid shrinks fibers, prevents slipping on dial cord and belts.

No.	List
1215 2-oz.	0.60

**G-C CORD  
DRESSING**

Easy way to treat slipping cords. Simply rub on stick and job is done. Prevents and stops slipping.

No.	List
1212 Stick	\$0.25

**G-C LONG  
NOSE PLIERS**

Very handy pliers to reach into places and hold parts. It's very handy for installing radio dial cords. Available in straight nose and curved nose styles.

No.	List
5192 Straight Nose Pliers	\$0.85
5193 Curved Nose Pliers	.85

**G-C DIAL CABLE  
TOOL**

Handy tool to aid in stringing new dial cord and replacing cables slipped off pulleys and drums. It's like an extra hand. Speeds up the job.

No.	List
5096	\$0.75

**G-C HANDY  
PICK-UP TOOL**

Very handy for every one. Picks up pieces in hard-to-get-at places. Will hold and start screws, nuts, etc. Will pay for itself in short time.

No.	List
5089	\$1.50



**G-C DIAL CABLE  
RACK**

Very handy, includes popular cables. Hangs on wall or on bench. Handy measuring rule or sign. Kit includes rack and five 25 ft. spools each Nos. 71, 78, 74, 75 and 76 cables.

No.	List
7-A-25	\$6.30

**G-C DIAL SPRING  
KITS**

Handy kit of springs as used on dial cord drives. Six sizes included.

No.	List
1054-E 10 Assorted	\$0.40
1054-SE 10 Small Springs	.40
1055 Kit 25 Asst. Springs	1.20
1056 Kit 100 Asst. Springs	4.40

**G-C No. 77-SK  
DIAL CORD KIT**

Contains four 25 ft. spools most popular cord; 75-25, 74-25, 76-25, 71-25, and free assortment of dial cord clamps and eyelets.

No.	List
77-SK Cable Kit	\$4.75

**G-C No. 78-SK  
DIAL CORD KIT**

Combination kit in 10 ft. lengths of all G-C Dial Cables. Each in separate envelope, packed in leatherette box. Handy for servicemen and experimenters.

No.	List
78-SK Cable Kit	\$4.65

**G-C DIAL CORD  
CLIPS**

Handy clip and eyelet assortment used to fasten to ends of dial cords, etc. Required on every set.

No.	List
1028-E Assortment	\$0.40



## G-C SERVICEMEN'S DIAL BELT KITS

General Cement Belts are approved replacements for all sets. They are made of best quality material and will not stretch. They are specially treated to prevent slipping. They are the best. Sizes available for all sets. They are easy to install as they are made to fit. No adjustments necessary.

### BELTS — 25c List Each

Servicemen! Have an assortment of belts on hand for prompt replacement. Kits contain only the more popular belts used. KIT INCLUDES ATTRACTIVE STEEL BOX—BELT SCALE AND COMPLETE LISTING OF OVER 1100 MODELS.

### G-C SERVICEMEN'S KITS

List Price  
 No. G-25—Kit of 25 popular belts . . . \$ 7.50  
 No. G-50—Kit of 50 popular belts . . . 14.75  
 No. G-100—Kit of 100 (includes every size) 25.00

### INSTRUCTIONS — FOR MEASURING BELTS

To determine size of belt, if the old belt is available, cut the belt and measure for stretched out length. This will be "cut length" of belt. If old belt is not available or is worn out so that it cannot be properly measured, stretch a thin thread around belt pulleys on set. (Be sure to use thin thread as a thick cord will give an inaccurate reading.) Measure the thread. It will be our "circumference around pulleys." In measuring belts always remember that the circumference around pulleys is not the same as stretched out or cut length. A belt when cut, develops approximately 3/16" extra length when stretched out, depending on thickness of belt.

## G-C RADIO BELT SPECIFICATIONS

LISTED AS PER BELT SIZE				LISTED AS PER BELT SIZE				
Circumference Around Pulleys	Cut Length	G-C Belt No.	Circumference Around Pulleys	Cut Length	G-C Belt No.	Circumference Around Pulleys	Cut Length	G-C Belt No.
5 3/4"x1/4"	5 5/8"x3/4"	195	8-43/64"	8-55/64"	112	11"	11-3/16"	135
6-23/32"	6-29/32"	101	8-11/16"	8-7/8"	160	11-5/64"	11-17/64"	130
6-55/64"	7-3/64"	161	8-13/16"	9"	167	11-9/64"	11-21/64"	131
6-57/64"	7-5/64"	102	9-1/16"	9-1/4"	117	11-5/32"	11-15/32"	137
6-15/16"	7-1/8"	158	9-13/64"	9-25/64"	115	11-3/16"	11-3/8"	171
7-1/64"	7-13/64"	157	9-19/64"	9-81/64"	163	11-9/32"x5/16"	11-15/32"x5/16"	131W
7-1/4"	7-7/16"	108	9-5/16"	9-1/2"	116	11-3/8"	11-9/16"	134
7-9/32"	7-15/32"	156	9-17/32"	9-23/32"	119	11-23/64"	11-37/64"	136
7-13/32"	7-19/32"	177	9-7/8"	10-1/16"	123	11-7/16"	11-5/8"	173
7-15/32"	7-21/32"	103	9-59/64"	10-7/64"	127	11-21/32"	11-27/32"	194
7-1/2"	7-11/16"	105	10-1/16"	10-1/4"	126	11-3/4"	11-15/16"	143
7-25/64"	7-23/32"	155	10-1/8"	10-7/16"	164	11-13/16"	12"	143
7 11/16"	7-7/8"	107	10-17/64"	10-29/64"	124	12"	12-3/16"	138
7-3/4"	7-15/16"	174	10-19/64"	10-31/64"	128	12-1/32"	12-7/32"	154
7-15/16"	8-1/8"	111	10-23/64"	10-35/64"	118	12-3/32"	12-1/4"	142
8-1/64"	8-13/64"	104	10-3/8"	10-9/16"	122	12-7/32"	12-13/32"	140
8-1/32"	8-7/32"	159	10-25/64"	10-37/64"	125	straight belt	12-7/16"-str. belt	193
8-3/32"	8-9/32"	113	10-1/2"	10-11/16"	152	12-3/32"	12-15/32"	139
8-3/16"	8-3/8"	172	10-41/64"	10-53/64"	129	12-15/32"	12-21/32"	144
8-13/64"	8-25/64"	162	10-11/16"	10-7/8"	121	12-1/2"	12-11/16"	178
8-15/64"	8-27/64"	114	10-45/64"	10-57/64"	120	12-39/64"	12-51/64"	145
8-25/64"	8-37/64"	110	10-27/32"	11-1/32"	180	12-13/16"	13"	168
8-1/2"	8-11/16"	109	10-61/64"	11-9/64"	133	13-3/16"	13-3/8"	146
8-21/32"	8-27/32"	108	10-31/32"	11-5/32"	132	14-7/32"	14-13/32"	169
8-39/64"	8-51/64"	153						

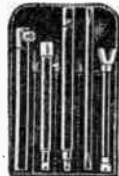
### G-C RADIO DIAL GLASS AND CLOCK CRYSTALS

Round convex replacement glass crystals for radios, clocks, auto radios, instruments, panels, dash board.

No.	Diam.	List	No.	Diam.	List	No.	Diam.	List	No.	Diam.	List	No.	Diam.	List
25	1 3/8"	\$0.55	37	3 3/8"	\$0.55	50	5"	\$0.65	62A	6 3/8"	\$0.65	74	8"	\$0.75
26	1 7/8"	.55	38	3 1/2"	.55	51	5 1/4"	.65	63	6 7/8"	.65	75	8 1/4"	.85
26A	2"	.55	39	3 5/8"	.55	52	5 1/2"	.65	64	6 3/4"	.65	76	8 1/2"	.85
27	2 1/4"	.55	40	3 3/4"	.55	53	5 3/8"	.65	66	7"	.75	77	8 3/4"	.85
28	2 1/2"	.55	41	3 7/8"	.55	54	5 1/2"	.65	67	7 1/4"	.75	78	8 1/2"	.85
29	2 3/4"	.55	42	4"	.65	55	5 5/8"	.65	68	7 1/2"	.75	79	8 5/8"	.85
30	2 1/2"	.55	43	4 1/8"	.65	56	5 3/4"	.65	69	7 3/4"	.75	80	8 3/4"	.85
31	2 5/8"	.55	44	4 1/4"	.65	57	5 7/8"	.65	70	7 1/2"	.75	81	8 7/8"	.85
32	2 3/4"	.55	45	4 3/8"	.65	58	6"	.65	71	7 3/4"	.75	82	9"	.85
33	2 7/8"	.55	46	4 1/2"	.65	59	6 1/8"	.65	72	7 3/4"	.75	83	9 1/4"	.85
34	3"	.55	47	4 5/8"	.65	60	6 1/4"	.65	73	7 3/4"	.75	84	9 3/4"	.85
35	3 1/4"	.55	48	4 3/4"	.65	61	6 3/8"	.65	DC65	Kit of 65 Crystals				\$38.50
36	3 3/4"	.55	49	4 7/8"	.65	62	6 1/2"	.65	DC25	Kit of 25 Popular Crystals				13.75

### G-C NX ALIGNING KIT

Popular approved Army-Navy Kit for all sets. Fourteen tools. Contains Nos. 5004, 5011, 5017, 5015, 5016, and leatherette case.



No. 5020 Kit List \$6.50

### G-C TE-45A NEUTRALIZING KIT

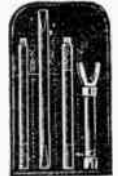
Approved by U. S. Signal Corps. All popular balancing tools to make an all purpose kit. Contains two each Nos. 5051, 5052, and one each Nos. 5019, 5008, 5000, and 5" screwdriver in roll-type leatherette case.



No. 5021 Kit List \$5.75

### G-C VEST POCKET ALIGNING KIT

Easy-to-carry all-purpose kit. Four tools with telescoping parts making them equivalent to six. Contains Nos. 5012, 5000, 5008, 5004 and leatherette case.



No. 5022 Kit List \$3.00

### G-C ALL-PURPOSE ALIGNMENT TOOL KIT

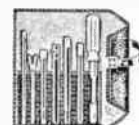
Seventeen tools designed into nine basic tools some of which telescope into each other. Roll-type leatherette case. Includes Nos. 5001, 5008, 5004, 5011, 5016, 5017, 5058, 5056, 5057.



No. 5023 Kit List \$6.25

### G-C DELUXE ALIGNMENT KIT

Fourteen most popular tools including Flexible Shaft Screwdriver and Tuning Wand, designed into seven basic tools. Contains Nos. 5002, 5004, 5011, 5014, 5016, 5017, 5019. In leatherette roll-type case.



No. 5026 Kit List \$7.50

### G-C STANDARD TELEVISION ALIGNMENT TOOL KIT

Here's a popular low-priced alignment kit that has the latest essential tools for Television Sets. Specially engineered for Television Sets. A real value in this kit. Nine essential tools in roll-type case.



No. 8455 TV Kit Complete \$6.95

### G-C TELEVISION ALIGNMENT TOOL KITS

G-C Television Tools are the best quality tools you can buy. They are made specially for Television work and are all designed to give you long service. The steel tips are all extra thin and are of the best grade hardened steel that will give you service.

Kit contains 16 essential Tools.

No. 8280 TV Kit in Leatherette Case \$11.75  
 8281 Kit supplied with Bench Stand 11.75



### G-C PROFESSIONAL ALIGNMENT TOOL KITS

Complete kits. Be prepared to service every set with these DeLuxe Alignment Kits. In a handy roll-type leatherette case or a steel partitioned box. Kit contains 80 Tools.



No. 5024 Kit in Roll-Type Case \$19.95  
 5025 Kit in Steel Box 19.95

GENERAL



CEMENT

# ALIGNMENT TOOLS—KITS

The Best Tools for TV — Tools have Extra Thin Spring Steel Tips for Long Life

### G-C TELEVISION ALIGNMENT TOOL



Special short sturdy tool with a fine metal screwdriver blade to adjust Television and FM sets while they are in the cabinet. Only 2 1/2" long over-all.

No. 5066 TV Tool List \$0.50

### G-C TELEVISION ALIGNING WRENCH



New Television tool with 1/8" square socket wrench, 1/8" shaft with insulated handle. Approximately 6" long.

No. 5080 Television Wrench List \$0.75

### G-C K-TRAN TOOL Ideal Television Tool



Specially designed for K-Tran and I.F. transformers. Made of bone fibre, screw driver on both ends.

No. 5097 Tool List \$0.75

### G-C TELEVISION CHANNEL TUNING TOOL



Designed for Television receivers, for making channel adjustments, etc. Completely insulated, non-metallic tool with long 1/8" narrow blade. Over-all length of tool approx. 7". Made of bone fibre.

No. 8195 TV Tool List \$0.75

### G-C TELEVISION AND FM TUNING TOOL



Special short tool with fine recessed screwdriver tip for Television and FM adjustments. Makes those difficult adjustments when set is installed in console. Only 2 1/2" long. Made of bone fibre.

No. 8196 TV Tool List \$0.50

### G-C TELEVISION CORE ALIGNER



For Motorola, Stewart-Warner, Belmont, etc. using Stackpole or other stud type cores that are not slotted. Made of hard fibre 6" long with a milled steel insert on one end and a thin screw driver blade on other end.

No. 8271 Core Aligner List \$0.75

### G-C TELEVISION I.F. OSCILLATOR ALIGNER



For I.F. and oscillator adjustments. Fits all makes of sets, RCA, G-E, Philco, Admiral, etc. Made of plastic handle and steel shaft. Blade is extra thin spring steel for long life.

No. 8272 TV Osc. Tool List \$1.00

### G-C TELEVISION ALL-PURPOSE ALIGNER



Specially made for TV I.F. adjustments, with a plastic handle and a hard fibre shaft. Very thin spring steel tip is recessed so the tool will guide itself over the screws.

No. 8273 TV Aligner List \$1.00

### G-C TELEVISION LONG REACH ALIGNER



Made for Admiral, Zenith, RCA, and other sets to adjust nested iron cores and make front end adjustments. The blades are extra thin, made of bone fibre and are extra long.

No. 8274 Long Reach Aligner List \$1.00

### G-C TELEVISION ZENITH UNIVERSAL ALIGNER



Designed for Zenith and other sets. Made of bone fibre and plastic handle, it has a thin fibre screw driver on one end and a recessed extra thin spring steel tip on the other end.

No. 8275 TV Universal Aligner List \$0.75

### G-C TELEVISION DUPLEX ALIGNER



All-purpose TV aligner for trimmers and I.F. transformers. Made of bone fibre with extra thin spring steel tips. One end has a projected tip, the other end has a recessed tip.

No. 8276 Duplex Aligner List \$0.75

### G-C TELEVISION "Shorty" DUPLEX ALIGNER



For trimmer and I.F. transformers where space is limited. Bone fibre with extra thin hardened spring steel tips. One end has a projected metal tip, the other end is recessed.

No. 8277 TV Shorty Aligner List \$1.00

### G-C TELEVISION TUNING WAND



Made of extra thin flexible plastic material to fit small coil openings in TV sets. Brass insert on end reduces inductance and iron core on other end increases the inductance.

No. 8278 TV Tuning Wand List \$0.75

### G-C TELEVISION CORE ALIGNER



For hard-to-reach places in TV sets. Tool has a recessed steel milled slot to fit over the Stackpole and other type stud cores that are not slotted. Steel insert is pinned in a fibre shaft for extra strength.

No. 8279 TV Core Aligner List \$1.00

### G-C NEW ZENITH TV WRENCH AND ALIGNER NYLON TOOL



New plastic molded special tool made specially for Zenith TV sets. One end has a plastic hex wrench and the other end a small screw driver tip.

No. 8282 Zenith TV Tool List \$0.50

### NEW G-C UNIVERSAL TV FM ALIGNER NYLON TOOL



New universal molded type plastic aligner made of durable plastic with a metal tip on one end and a narrow plastic tip on other end. Very handy for many alignment adjustments.

No. 8284 Universal Aligner List \$0.50

### G-C ALIGNMENT SCREW DRIVER



Low Inductance Metal Tip Screw Driver made of Genflex—strong, completely insulated. Very popular all-around alignment tool. Two sizes—1/4" and 3/8" diameter.

No. 5000 1/4" Diam. x 6" Tool List \$0.40  
5088 3/8" Diam. x 6" Tool .40

### G-C DUPLEX ALIGNMENT SCREW DRIVER



Low Inductance Metal Tip on both ends made of Genflex material. One end is 1/4" and other end is turned down to 3/8" diameter for small holes. Strong, completely insulated tool.

No. 5001 Tool List \$0.75

### G-C "STRATO" TUNING WAND



Made of Genflex rod with brass cylinder on one end and iron core on other end, used for adjusting and checking coils. By inserting iron core end you increase the inductance and inserting brass end lowers inductance.

No. 5002 Tool List \$1.00

### G-C RCA ALIGNING TOOL



Made of 1/4" Bone Fibre, narrow screw driver on one end and screw nib inserted on other end. Used on RCA sets and others for coil and push-button adjustments.

No. 5003 Tool List \$0.75

### G-C NO-METAL INSULATING ADJUSTMENT SCREW DRIVER



Made of black Bone Fibre. Indispensable for aligning all-wave sets. Will give long service. Ends can be re-ground.

No. 5004 7" Long List \$0.40  
Low-Loss Polystyrene Type—  
Ideal for U.H.F. Sets  
5008 7" Long .40

### G-C INSULATED HEX WRENCH AND DRIVER



Combination hex wrench and insulated screw driver. The screw driver may be extended from handle to provide extra long length. No metal parts, this is an all-fibre tool.

No. 5005 Extends from 7-13" List \$0.75  
5006 Extends from 11-17" 1.00

### G-C NON-EXTENSION TYPE WRENCH & DRIVER



Same as No. 5005 except screw driver is permanently attached in wrench. Length not adjustable. Over-all length 6".

No. 5007 Tool List \$0.40

### G-C DUPLEX NO-METAL ALIGNMENT SCREW DRIVER



Made of Hard Bone Fibre or Polystyrene—1/4" blade on one end and 1/4" blade on other. 6" long. A dual purpose alignment screw driver. Ends can be re-ground.

No. 5009 Bone Fibre—6" List \$0.40  
5010 Polystyrene—8" .40

### G-C ALLIGATOR WRENCH AND SCREW DRIVER



For RCA, Philco and others. Made of  $\frac{3}{8}$ " Bone Fibre and strong metal wrench on one end and metal screw driver tip on other end.

No.	Tool	List
5011		\$0.50

### G-C ALLIGATOR AND WRENCH ALIGNING TOOL



Made of  $\frac{3}{8}$ " Bone Fibre with alligator on one end and  $\frac{1}{4}$ " metal Hex Wrench on other end. Very popular tool.

No.	Tool	List
5012		\$0.50

### G-C WRENCH & SCREW DRIVER ALIGNING TOOL



Made of  $\frac{3}{8}$ " Bone Fibre with  $\frac{1}{4}$ " Hex Wrench on one end and Screw Driver with metal nib on other end. This is a very handy alignment tool and wrench.

No.	Tool	List
5013		\$0.85

### G-C 4-in-1 ALIGNMENT TOOL



This is the most popular alignment tool for most receivers. Made of Bone Fibre, combination tool. Consists of Screw Driver with metal nib,  $\frac{1}{4}$ " Hex Wrench slotted and  $\frac{1}{8}$ " Hex Wrench on other end.

No.	Tool	List
5014		\$0.85

### G-C 5-in-1 ALIGNMENT TOOL



Similar to our 5014 except supplied with heavy duty metal screw driver.

No.	Tool	List
5015		\$1.35

### G-C 6-in-1 ALIGNMENT TOOL



Bone Fibre, combination tool. Consists of Screw Driver with metal nib,  $\frac{1}{8}$ " Hex Wrench,  $\frac{1}{4}$ " Hex Side Wrench and  $\frac{1}{4}$ " Hex End Wrench slotted.

No.	Tool	List
5016		\$1.35

### G-C DUPLEX INSULATED WRENCH ALIGNING TOOL



Made of Bone Fibre with  $\frac{1}{4}$ " Hex Metal Wrench one end and  $\frac{1}{8}$ " Hex Metal Wrench on other end.

No.	Tool	List
5017		\$1.25

### G-C TELEVISION AND PUSH-BUTTON TOOL



Required to adjust Push-Button Tuners. Socket Screw Driver made of best steel.

No.	Tool	List
5018		\$0.75

### G-C FLEXI-DRIVER



"Around-the-Corner" screw driver for radio work. Approved by U. S. Army and Navy.

No.	Tool	List
5019		\$2.00

### BAKELITE NEUTRALIZING TOOL U. S. Army TL-207



Genuine Molded Bakelite. Combination screw driver and  $\frac{1}{8}$ " Hex Wrench. Approved by U. S. Army Signal Corps.

No.	Tool	List
5027		\$2.25

### HEX INSULATED FIBRE ALIGNING WRENCHES



Hexed full length inside, so end can be cut off when worn.

No.	Length	Hex Size Across		List
		Flat	Diam.	
5051	5"	$\frac{1}{8}$ "	$\frac{1}{16}$ "	\$0.30
5052	5"	$\frac{1}{4}$ "	$\frac{3}{16}$ "	.25
5053	6"	$\frac{1}{4}$ "	$\frac{3}{16}$ "	.35
5054	8"	$\frac{1}{4}$ "	$\frac{3}{16}$ "	.40
5055	12"	$\frac{1}{4}$ "	$\frac{3}{16}$ "	.50

### G-C SCREW DRIVERS



Insulated screw drivers for radio work. No. 5056 for radio knobs. No. 5057 regular type for all-around radio use.

No.	Blade	List
5056	8" x $\frac{1}{8}$ " (Small)	\$0.25
5057	3" x $\frac{1}{8}$ " (Large)	.85

### G-C TELEVISION AND TRIMMER TOOL



Handy tool to adjust smallest size trimmer condensers. Screw driver is  $\frac{3}{32}$ " diameter and will fit small holes. Other end has a reinforced  $\frac{1}{8}$ " hex nut wrench.

No.	Tool	List
5067	Trimmer 6" Long	\$1.00

### G-C TEST Mallet, SCREW DRIVER & TUBE TAPPER



Handy tool made with insulated screw driver on one end and rubber mallet on other end. Very handy for tapping tubes to find shorted or intermittent tubes.

No.	Tool	List
5081		\$0.65

### G-C TEST PROBE



Handy new test probe to "dig in" and find the trouble. Fibre point on one end. Metal hook on other end. Excellent for locating loose connections and shorted parts.

No.	Tool	List
5082		\$0.60

### G-C BAKELITE $\frac{1}{16}$ " HEX WRENCH-SCREW DRIVER



Molded bakelite insulated wrench for radio work.  $\frac{1}{16}$ " hex has reinforced brass collar to prevent breakage.  $\frac{1}{16}$ " dia. x 5" long.

No.	Tool	List
5083		\$0.50

### G-C BALANCING TOOL



A short neutralizing tool for work in close quarters. Sets can be adjusted without removing from cabinets. A very handy tool.

No.	Tool	List
5084		\$0.60

### G-C ALIGNMENT WRENCH FOR PHILCO, RCA, ETC.



Excellent for neutralizing air trimmers on many models. RCA-Victor, Philco and others. Has  $\frac{1}{8}$ " Hex Wrench on one end and metal hook on other end.

No.	Tool	List
5085		\$1.50

### G-C ALIGNMENT TOOL FOR PHILCO, RCA, ETC.



For neutralizing air trimmer condensers on all model sets. Made of  $\frac{3}{8}$ " Fibre. Metal clip on end.

No.	Tool	List
5086		\$0.60

### G-C TELEVISION AND PUSH-BUTTON TOOL



A specially-designed tool for adjusting iron core I.F. and R.F. transformers, coils, alignment condensers, and push-button tuners. Used on Bendix, RCA, and others. Metal tip on one end, other end recessed tip.

No.	Tool	List
5087		\$0.75

### G-C TELEVISION AND TRIMMER TOOL



Specially made for adjusting neutralizing padding condensers and iron core tuners and coils.

No.	Tool	List
5091		\$0.75

### ZENITH PUSH-BUTTON WRENCH



Special wrench necessary to use in adjusting Zenith push-button radios.

No.	Tool	List
5094	Zenith Wrench	\$0.17

### G-C CONTACT ADJUSTER



A handy tool to adjust contacts on switches, relays on pin ball machines and radio sets.

No.	Tool	List
5095	Contact Adjuster	\$0.20

### G-C DIAL CABLE TOOL



A handy tool to aid in replacing worn out cables or cables slipped off of drums.

No.	Tool	List
5096	Dial Cable Tool	\$0.75

### G-C INSPECTION MIRROR



No.	Tool	List
5090	Inspection Mirror	\$0.50

### G-C NEUTRALIZING AND ALIGNING TOOL U. S. Army TL-138-A



No.	Tool	List
5098		\$1.00

### G-C NEUTRALIZING AND ALIGNING TOOL

Approved by U. S. Army & Navy



No.	Tool	List
5099		\$1.25

### G-C CABLE EYELET TOOL



No.	Tool	List
741		\$1.00

**G-C STANDARD SPEEDX WIRE STRIPPER**

Fast operating precision made hand tool for stripping insulation from all types of wire. Very easy to operate. Strips 750 to 1000 wires per hour. Used by girls or men. All blades are interchangeable and easily replaced



Standard Models			No.	Wire	List
	733	12 to 20	\$6.00	733-G	For #18 P.O. S.J. or parallel wire \$6.00
	733-A	14 to 30	6.00	733-H	For the new 300-ohm television and FM transmission line 6.00
	733-B	10 to 18	6.00	733-I	For 10, 12, 14, 16, 18, 20, 22 wire 6.00
	733-C	8 to 10	6.00		
	733-D	16, 18, 20, 22	6.00		
	733-E	14, 16, 18	6.00		
	733-F	10, 12, 14	6.00		

**G-C AUTOMATIC SPEEDX WIRE STRIPPER**

Similar to standard models except has the "stay open feature" with the new Speedex "Trig-O-Matic Action." Automatically holds jaws open until wire is removed, and prevents bending or crushing of fine wires. Has on-off mechanism so tool can be used as standard model if desired.



Automatic Models			No.	Wire	List
	744	12 to 20	\$8.00	744-G	For #18 P.O. S.J. or parallel wire \$8.00
	744-A	14 to 30	8.00	744-H	For the new 300-ohm television and FM transmission line 8.00
	744-B	10 to 18	8.00	744-I	For 10, 12, 14, 16, 18, 20, 22 wire 8.00
	744-C	8 to 10	8.00		
	744-D	16, 18, 20, 22	8.00		
	744-E	14, 16, 18	8.00		
	744-F	10, 12, 14	8.00		

**G-C SPEEDX WIRE STRIPPER KIT**

Wire stripper complete with seven different size blades put up in a specially designed permanent steel box. For wires No. 8 to No. 30.



No.	List
733-K Standard Stripper Kit, with blades	\$15.00
744-K DeLuxe Automatic Stripper Kit, with blades	17.00

**G-C SHUR-GRIP PLIER WRENCH**

IT UNLOCKS WITHOUT SNAPPING THE FINGERS. Jaws are forged from alloy steel and specially heat-treated for toughness and durability. It is a high quality tool.



No.	List
767 7" Shur-Grip	\$3.95
770 10" Shur-Grip	5.00

**G-C SPEEDX REPLACEMENT BLADES**



Fit standard and automatic models. Blades interchangeable.

No.	List
3W 12 to 20	\$1.50
3W-A 14 to 30	1.50
3W-B 10 to 18	1.50
3W-C 8 to 10	1.50
3W-D 16, 18, 20, 22	1.50
3W-E 14, 16, 18	1.50
3W-F 10, 12, 14	1.50
3W-G Blades for parallel No. 18 P.O.S.J. or similar	1.50
3W-H Blades for the new 300-ohm television and FM twin transmission line	1.50
3W-I 10, 12, 14, 16, 18, 20, 22 wire	1.50

**G-C MASTER TEST LEADS**

The best test leads you can buy, 50" long, 6000-volt, heavy duty test prods, solderless type. Extra flexible leads run through the handles and are fastened under the knurled collar on the tips. Available with either the attached angle tips or the straight solderless type tips.



No.	List
5050 With Solderless type Straight Tips	\$1.50
8459 With Angle type Test Tips	1.75

**G-C NEEDLE POINT TEST LEADS**

Heavy duty 6000-volt test leads, 50" long, made with unbreakable plastic handles 6" long with needle type chuck and needle to penetrate insulation. Available with either the attached angle tips or the straight solderless type tips.



No.	List
8461 With Solderless Straight Tips	\$1.50
8462 With Angle type Test Tips	1.75

**G-C THIN TYPE TEST LEADS**

This is a handy pair of test leads for hard-to-reach places. Made with slim, plastic handles with long, slim insulated test rods attached. Made with 50" of 6000-volt test lead wire. Comes equipped with angle type phone tips.



No.	List
8465 Thin Type Test Leads	\$1.50

**G-C SAFETY PROBE TEST LEAD**

High voltage safety type test probe, comes equipped with 50" 6000-volt wire and a safety probe for working in cramped spaces. Prevent accidental shorts and damage to instruments. Test prod is on a spring and makes contact only when pressure is applied. Other end is equipped with standard angle type phone tips.



No.	List
8466 Safety Test Probe, each	\$1.50

**G-C SPEEDX STRIPPER BENCH HOLDER**



Bench type holder for any model Speedex Wire Stripper. Converts a hand operated tool to a bench type and increases production up to 2,500 wire strippings per hour. Steel.

No. 755 Bench Holder List \$3.75

**G-C SPEEDX TRIG-O-MATIC PLATE (Patent Pend.)**

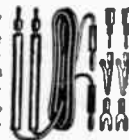


Converts any standard model Speedex Stripper to an Automatic Model. Easy to install.

No.	List
756 Trig-O-Matic Plate, only	\$2.00

**G-C UNIVERSAL TYPE TEST LEADS**

Heavy duty 6000-volt leads 50" long, made with unbreakable plastic handles 6" long with solderless type tips. Other end comes with standard banana plugs, interchangeable for spade lugs, phone tips, and alligator clips. Supplied complete.



No.	List
8463 Universal Test Leads	\$2.50

**UNIVERSAL TYPE TEST LEADS WITH NEEDLE POINT PRODS**

Heavy duty 6000-volt leads 50" long, made with unbreakable plastic handles 6" long. Equipped with needle point chucks and needles to pierce insulation. Other end comes with standard banana plugs, interchangeable for spade lugs, phone tips, and alligator clips. Supplied complete.



No.	List
8464 Universal Needle Test Leads	\$2.50

**G-C CLIP-ON TEST LEADS**

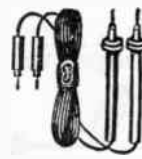
Handy type clip-on test lead made with a spring clip that clips on to wires, resistors, condensers, etc. Handy to use in checking and analyzing circuits, etc. Made with 50" heavy duty 6000-volt test lead wire. Other end equipped with standard angle type phone tip.



No.	List
8467 Clip-On Test Leads, each	\$1.50

**G-C TELEVISION HIGH VOLTAGE TEST LEADS**

Specially made for high voltage work up to 15,000 volts. Made with 50" of heavy insulated wire and heavy bakelite handles equipped with finger guards to prevent accidental slipping. Other end equipped with heavy duty insulated phone tips.



No.	List
8468 High Voltage Test Leads	\$3.00



**G-C TEST LEAD WIRE**

Ideal long-life replacement wire, extra flexible, 6000 volt insulation. Red and Black (Specify color).

No.	Env.	Length	List
5049	1 Red, 1 Black, 50" long,		\$0.60
5049-C	100-ft.		6.00
5049-M	1000-ft.		35.00

**G-C HIGH-VOLT TEST PROD HANDLES**

15,000-Volt, bakelite prods, 6" long over-all. Equipped with finger guards.

No.	Handles	List
8451		\$1.25

**G-C HIGH-VOLT TEST PROD TIPS**

15,000-Volt, bakelite tips, with threaded phone tips.

No.	Tips	List
8452		\$0.60

**G-C TEST PRODS**

Solderless type non-breakable fibre. Removable tip, brass nickel-plated.

No.	Size	Color	List
5041	5 1/4"	Red	\$0.40
5042	5 1/4"	Black	.40
5043	7 1/4"	Red	.50
5044	7 1/4"	Black	.50

**G-C LOW-LOSS DELUXE TEST PRODS**

New polished low-loss material. Non-breakable. Moisture resistant. Withstands high voltages. Solderless type, brass nickel-plated.

No.	Color	List
5045	Red	\$0.50
5046	Black	.50

**G-C NEEDLE POINT TEST PRODS**

Adjustable chuck tip for needle. 6" polished plastic handles in Red or Black. Brass nickel-plated chuck removable. Includes needle. (Specify color).

No.	List
7701	\$0.50



**G-C TEST LEAD ANGLE TIP**

New, attractive, fully insulated, molded plastic angle phone tip plugs. Will take wires up to .140 diameter.

No.	Color	List
8149	Red, each	\$0.50
8150	Black, each	.50



**G-C INSULATED TEST PROD TIPS**

Unbreakable polished plastic insulated handles. Solderless connectors, brass nickel-plated.

No.	Color	List
5061	Red	\$0.25
5061-E	Env. 2	.50
5062	Black	.25
5062-E	Env. 2	.50



**G-C TEST PROD TIPS**

Solderless type, brass nickel-plated. Non-insulated. Wire fastens easily.

No.	List
5060	\$0.18



**G-C PHONO NEEDLE POINT TEST PROD CHUCK**

Threaded chuck fits 1/4"-20 threaded hole. Needle removable. Brass nickel-plated. Includes needle.

No.	List
7702	\$0.20



**G-C HEAVY DUTY PHONE LUG**

Standard type as used on test prods, leads, etc. Fits snugly in 1/4" hole. Brass nickel-plated.

No.	List
7706	\$0.15



**G-C SOLID STANDARD PHONE TIP**

Solid brass type made to RMA specifications. Bright nickel-plated.

No.	Env.	List
6321-E	8	\$0.40
6321-G	Pkg. 144	6.75



**G-C STANDARD PHONE TIP**

Made of drawn brass with hole through center for easy soldering of wire at tip. Bright nickel-plated.

No.	Env.	List
6320	12	\$0.40
6320-G	Pkg. 144	3.25
6629	Jar 30	.65



**G-C PHONO NEEDLE POINT TEST PROD CHUCK**

Push on type fits snugly in 1/4" hole. Brass nickel-plated.

No.	List
7703	\$0.20



**G-C INSULATED PHONE TIP PLUG**

Fits standard phone tip jacks. Polished non-breakable low-loss plastic insulated handles. Brass, nickel-plated tip. Minimum contact exposure.

No.	Color	List
7710	Red	\$0.20
7711	Black	.20



**G-C INSULATED SPADE LUG**

Tapered spade lug fits all screws or terminal strips up to No. 10. Insulated female end fits banana plugs.

No.	Color	List
7712	Red	\$0.20
7713	Black	.20



**G-C PHONO TIP JACKS**

Standard type with phosphor bronze spring contacts. Fits 1/4" hole and panels up to 3/8" thick. Brass parts nickel-plated.

No.	List
7714	\$0.15



**G-C INSULATED PHONE TIP JACKS**

Standard insulated type phosphor bronze spring contacts. 3/8" insulated head. Fits 1/4" hole and panels up to 3/8" thick. Brass parts nickel-plated.

No.	Color	List
7715	Red	\$0.20
7716	Black	.20



**G-C SPRING BANANA PLUG**

Insulated solderless type with polished insulated handles. Non-collapsible spring action plug. Metal parts nickel-plated.

No.	Color	List
7730	Red	\$0.30
7731	Black	.30



**G-C SET SCREW TYPE BANANA PLUG**

Insulated set screw type. Polished insulated plastic handles. Non-collapsible spring action banana type plug. Nickel-plated metal parts.

No.	Color	List
7732	Red	\$0.25
7733	Black	.25



**G-C SMALL BANANA PIN PLUGS**

Approved silver-plated plugs with straight shank. Can be riveted or soldered. For wires, multiple plugs, etc.

No.	Env.	List
6400	10	\$0.40



**G-C SPRING BANANA PLUG**

Standard size with 6-32 threaded shank. Use on plug-in coils, terminal strips, etc. Complete with lug and nut. Brass nickel-plated.

No.	List
7736	\$0.15



**G-C SPRING BANANA PLUG**

Standard size with 6-32 female thread on end. Supplied with screw and solder lug. Brass nickel-plated.

No.	List
7737	\$0.15



**G-C BANANA JACK**

Standard size banana pin jack. Fits 1/4" hole up to 3/8" thick panel. Nut and lug supplied. Brass nickel-plated.

No.	List
7740	\$0.15



**G-C INSULATED BANANA JACK**

Standard size with polished plastic insulators. Fits 1/4" hole, up to 3/8" thick panel. Nut, lug, and insulators supplied. Brass, nickel-plated.

No.	Color	List
7741	Red	\$0.20
7742	Black	.20



**G-C RCA PHONO PIN PLUG AND JACK**

RCA types used on many type receivers. Also used as auto antenna connectors.

No.	List
1742 Mdg. Pkg.	\$0.10
1742-E Env. 4	.40
1743 Midget Jck.	.15
1743-E Env. 3	.40



**G-C INSULATED BANANA PLUG OR PHONE TIP JACK**

Standard size insulated combination jack. Brass nickel-plated with phosphor bronze spring contacts. Fits 1/4" hole, panel up to 3/8" thick.

No.	Color	List
7744	Red	\$0.30
7745	Black	.30





**G-C STANDARD TUBE SOCKETS**

**BAKELITE SOCKETS**  
High quality molded bakelite sockets with plated bronze contacts. Three grounding lugs on base of each socket. 1 1/2" mounting centers.

No.	Mntg. Center	List
1534	4-prong 1 1/2"	\$0.15
1535	5-prong 1 1/2"	.15
1536	6-prong 1 1/2"	.15
1537	7-pr. Small 1 1/2"	.15
1537-L	7-pr. Large 1 1/2"	.18
1538	8-pr. Octal 1 1/2"	.18
1538-2	8-pr. Octal 1 1/2"	.18
1538-L	8-pr. Octal 1 1/2"	.20

**G-C MINIATURE TUBE SOCKETS**

**BAKELITE MINIATURE SOCKET For Miniature Tubes**  
High quality molded bakelite socket with metal saddle mounting. Made with phosphor bronze plated contacts for 7-prong tubes. Standard 3/8" mounting centers.

**WAFFER MINIATURE SOCKET For Miniature Tubes**  
High grade bakelite sockets for new miniature tubes. Phosphor bronze contacts for 7-prong tubes. Standard 3/8" mtg. centers.

No.	List
1540 Bakelite Socket	\$0.25

No.	List
1541 Wafer Socket	\$0.15
1542 Wafer Socket with grounding strap	.17



**G-C 860 CAP**

Spring action flat brown bakelite cap. Approved brass blades.

No.	List
860 Cap	\$0.25

**G-C 861 CAP**

Spring action, finger grip rubber caps. Approved, screw terminal brass blade.

No.	List
861 Cap	\$0.25

**G-C 865 CAP**

Modern flush type rubber cap. Easy to assemble. No exposed screws or wires.

No.	List
865 Cap	\$0.25

**G-C 867 PLUG**

Popular screw plug for standard sockets.

No.	List
867 Plug	\$0.17

**G-C CUBE TAP**

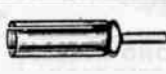
New type spring action cube tap with 8 outlets always available.

No.	List
862 Brown	\$0.30

**G-C CORD CONNECTOR**

Brown bakelite with bronze contacts.

No.	List
863 Brown	\$0.25



**G-C SURFACE BLOCK**

3-plug. Bakelite outlet for extension cords. Can fasten to wall or base.

No.	List
866 Brown	\$0.50

**G-C AUTO ANTENNA PLUG**

Shielded connector plug as used on Motorola and other auto radios.

No.	List
1740	\$0.15

**G-C ANTENNA CONNECTOR JACK**

Shielded jack to fit the 1740 plug for auto antenna and phono-graph connection.

No.	List
1741	\$0.25

**G-C PHONO PLUG**

For all phonographs and auto radio connections; RCA, Zenith, Philco and others.

No.	List
1742	\$0.10
1742-E Env. of 4	.40

**G-C PHONO JACK**

Used for phonograph attachments. To be used with 1742 plug.

No.	List
1743	\$0.15
1743-E Env. of 8	.40

**G-C EXTENSION JACK AND CONNECTOR**

For extending radio ant. cables and phono attachments. Fits 1740 or 1742 plugs.

No.	List
1744	\$0.20



**G-C MOTOROLA LEAD ADAPTER**

Adapter plug used to adapt bayonet type connector to Motorola type.

No.	List
1745	\$0.40

**G-C ADAPTER SHELL**

Used to change the Motorola fitting to bayonet type connector.

No.	List
1746	\$0.15

**G-C ANTENNA CONNECTOR**

Used for connections on auto antenna and ground lines.

No.	List
1747	\$0.15

**G-C JUMBO FUSE HOLDER**

14 amp. fuse holder, 2 1/4" long x 1/2" diameter.

No.	List
1748	\$0.30

**G-C FUSE CONNECTOR**

Regular Type Used on auto radios and other equipment. Completely assembled.

No.	List
1749	\$0.20

**G-C ANTENNA CONNECTOR END**

To be used with regular antenna connectors. With bushing.

No.	List
1750	\$0.10



**G-C REPLACEMENT PARTS FOR ANTENNA AND FUSE CONNECTORS**

No.	Description	List
(a) 1791	Sleeve of Fuse Connector	\$0.05
1791-GBox of 144 No. 1791		7.20
(b) 1792	Sleeve of Antenna Connector	.05
1792-GBox of 144 No. 1792		5.00
(c) 1793	End piece for Antenna and Fuse Connector	.04
1793-GBox of 144 No. 1793		7.20
(d) 6720	Auto Fuse Insulator Sleeve	.02
6720-GBox of 144 No. 6720		1.65
(e) 1796	Spring for Antenna and Fuse Connector	.01
1796-GBox of 144 No. 1796		1.40
(f) 1795	Bakelite Bushing	.04
1795-GBox of 144 No. 1795		4.00

**G-C TERMINAL STRIPS**

Laminated bakelite strips, rigidly constructed, terminal; will not turn and short.		Mounted on laminated bakelite strips. Lugs securely fastened and will not turn.	
No.	Contacts List	No.	Contacts List
1772	2 \$0.18	1781	1 \$0.05
1773	3 .27	1782	2 .06
1774	4 .36	1783	3 .07
1775	5 .45	1784	4 .11
1776	6 .54	1785	5 .12
1777	7 .63	1786	6 .13
1778	8 .72	1787	7 .14
1779	9 .81	1788	8 .15
1780	10 .90	1789	9 .18
		1790	10 .20

**G-C PHONO SPRING KIT**

Kit contains assorted springs same as are used on phono turntables. With this kit you can replace the broken or weak spring without waiting or delay in service.

No.	List
6478 Kit of 50	\$2.50
6479 Kit of 100	4.40

**G-C AUTO FUSE INSULATOR SLEEVE**

Insulating sleeve to fit regular fuse holders.

No.	List
6720-E Env. of 16	\$0.40



**G-C INSULATING CAMBRIC 10,000 Volts**

Yellow varnished cambric. .010" thick.

No.	List
549 Roll over 210 sq. in.	\$0.75
548 36" x 36", yd. any length 4.00	

**G-C LAMINATED BAKELITE PANELS**

1/8" thick. Black.

No.	List
590 6" x 6" x 1/8"	\$0.60
591 6" x 12" x 1/8"	1.10
592 12" x 12" x 1/8"	2.20

**G-C FIBEROL'D "FISH PAPER"**

Fish paper has many uses around the shops for repair jobs where electrical insulation is required. .010" - 240 sq. in. roll.

No.	List
560 Roll	\$0.50

**G-C RUBBER KIT ASSORTMENT**

Handy kit to keep in the shop. Contains various sizes of rubber grommets, chassis mounts, etc. An exceptional buy.

No.	List
7600 Rubber Kit	\$1.00

**G-C RADIO CORD SETS**

Handy replacement cord sets, ready to attach to radio sets and appliances. Approved Brown parallel wire with plugs attached.

No.	List
885 6 ft.	\$0.45
886-P 7 1/2 ft.	.60

**G-C EXTENSION CORDS**

G-C extension cords are made of approved wire ready to use with a plug on one end and a 3-way tap on the other end. Brown.

No.	List
887 6 ft.	\$0.90
889 7 1/2 ft.	.95

GENERAL



CEMENT

SIGNAL LIGHTS — CONNECTORS — CLIPS



**G-C ONE-INCH JEWEL SIGNAL LIGHT**

For signal devices of all types. Bulbs change from the front; for socket bases as listed below. One-inch mounting hole. Jewel colors: Red, Green, Amber, and Opal. (Specify Jewel Color).

No.	Socket	Jewel	List
7901	110-V. Cand.	Facett	\$1.40
7902	110-V. Cand.	Smooth	1.40
7903	Min. Bayonet	Facett	1.40
7905	Min. Screw	Facett	1.40

**G-C 3/4-INCH JEWEL SIGNAL LIGHT**

All purpose signal light with faceted jewels in colors of Red, Green, Blue, Amber. 1 1/8" mounting hole. Jewel removed from front. (Specify Jewel Color).

No.	Socket	List
7907	Min. Screw	\$0.80
7908	Min. Bayonet	.80
7909	110-V. Candel.	.80

**G-C 1/2-INCH JEWEL SIGNAL LIGHT**

Popular signal light, requires only 1/8" mounting hole. Faceted jewel removed from front. Colors: Red, Green, Blue, Amber, Opal, Clear. (Specify Jewel Color).

No.	Socket	List
7910	Min. Screw	\$0.35
7911	Min. Bayonet	.40
7912	110-V. Candel.	.40

**G-C PANEL JEWELS**

Complete assemblies in 1", 3/4", and 1/2" diameters. Fit panels up to 1/4" thick. Brass nickel-plated. Colors: Red, Green, Blue, Amber, Opal, Clear. (Specify Jewel Color).

No.	Dia.	Jewel	Mtg. Hole	List
7913	1/2"	Facett	1/8"	\$0.25
7914	1/2"	Smooth	1/8"	.25
7915	3/8"	Facett	1/8"	.60
7916	1"	Facett	1"	1.10



**G-C CLIP-ON PILOT LIGHT SOCKETS**

Clip up and clip down types for replacements. Cadmium-plated.

No.	Type	List
7920	Min. Screw Clip Up	\$0.15
7921	Min. Screw Clip Down	.15
7922	Min. Bay. Clip Up	.17
7923	Min. Bay. Clip Down	.17
7924	110-V. Cand. Clip Up	.20
7925	110-V. Cand. Clip Down	.20

**G-C BRACKET-TYPE PILOT LIGHT SOCKETS**

Sturdy bracket-up or bracket-down type. Cadmium-plated.

No.	Type	List
7926	Min. Screw Bracket Up	\$0.15
7927	Min. Screw Bracket Down	.15
7928	Min. Bay. Bracket Up	.17
7929	Min. Bay. Bracket Down	.17
7930	110-V. Candel. Bracket Up	.20
7931	110-V. Candel. Bracket Down	.20

**G-C UNMOUNTED PILOT LIGHT SOCKETS**

Cadmium plated. Ideal for replacements or special assemblies.

No.	Type	List
7932	Min. Screw Base	\$0.15
7933	Min. Bayon. Base	.14
7934	110-V. Candelabra	.16

**G-C PILOT LAMP INSTALLER**

Makes it easy to install miniature dial bulbs, neon and candelabra lamps in hard-to-get-at places. All rubber.

No.	List
7935 Installer	\$0.50

**G-C DOUBLE ALLIGATOR CLIP**

Brand New! A clip on both ends. Handiest connector made for joining wires, making temporary circuits, repairs; for tests, experiments, etc. Cadmium-plated.

No.	List
7758-E Env. 2	\$0.40



**G-C MALE MICROPHONE CONNECTOR**

Completely shielded, sturdy, single contact connector. Brass, bright chrome-plated. Steel spring cord protector.

No.	List
7940 Connector	\$0.45

**G-C FEMALE MICROPHONE CONNECTOR**

Single contact female type used with No. 7940, 7941 and 7943 connectors. Complete, brass chrome-plated.

No.	List
7942 Connector	\$0.55

**G-C MICROPHONE CHASSIS UNIT CONNECTOR**

Single contact male connector for chassis. Used with type 7942 female connector. Supplied complete. Brass nickel-plated.

No.	List
7941 Connector	\$0.35

**G-C MICROPHONE CONNECTOR**

Single contact, closed circuit type, prevents open circuit noises when microphone is disconnected. Chassis type. Use with type No. 7942 female connector. Brass, nickel-plated.

No.	List
7943 Connector	\$0.55

**G-C MICROPHONE CONNECTOR CAP**

Chrome plated cap with anchor chain for all connectors. Seal against dirt and prevent thread damage.

No.	List
7944 Connector Cap	\$0.50

**G-C INSULATED ALLIGATOR CLIP**

Solder type with Red or Black insulated sleeve. Strong spring. Nickel plated.

No.	List
5064 Red Clip	\$0.20
5064-E Env. of 2	.40
5065 Black Clip	.20
5065-E Env. of 2	.40



**G-C CROCODILE CLIP**

Set screw type. Teeth nest together to assure perfect contact with wires, etc. Cadmium-plated.

No.	List
7757 Clip	\$0.30

**G-C WEE-PEE-WEE CLIP**

Very small and thin nosed with set screw for wire. Phosphor bronze. Ideal for coil work.

No.	List
7755 Clip	\$0.30

**G-C PEE-WEE CLIP**

Popular test clip. Interlocking jaws assure positive contact. Set screw type.

No.	List
7756 Clip	\$0.12

**G-C ALLIGATOR CLIP**

Solder type, non-insulated. Strong spring for positive contact. Nickel-plated.

No.	List
5063 Clip	\$0.12
5063-E Env. of 3	.40

**G-C ALLIGATOR CLIP**

Wire fastens under set screw. Handy for all types of connectors. Cadmium-plated.

No.	List
7752 Clip	\$0.18

**G-C SCREW TYPE INSULATED ALLIGATOR CLIP**

Very popular. Bright polished handles Set screw for wire.

No.	List
7750 Blk. Clip	\$0.25
7751 Red Clip	.25



**G-C AMMETER CONNECTOR**

Easily clips to the ends of screws. Positive fast connector.

No.	List
6307 Each	\$0.12
6307-GBox 144	15.65

**G-C SMALL CLIP**

1/2" long by 3/8" wide. Handles up to No. 16 wire. No. 6 Mtg. Hole.

No.	List
6301 Each	\$0.03
6301-GBox 144	2.15

**G-C MEDIUM CLIP**

3/4" long by 5/8" wide. Handles up to No. 14 wire. No. 6 Mtg. Hole.

No.	List
6302 Each	\$0.03
6302-GBox 144	2.30

**G-C LARGE CLIP**

1 1/8" long by 3/4" wide. No. 8 Mtg. Hole.

No.	List
6303 Each	\$0.04
6303-GBox 144	3.35

**G-C MEDIUM SOLDER LUG CLIP**

3/4" long by 5/8" wide. No. 6 Mtg. Hole.

No.	List
6306 Each	\$0.04
6306-GBox 144	3.20

**G-C DOUBLE CLIP**

1 1/2" long by 5/8" wide. No. 6 Mtg. Hole.

No.	List
6304 Each	\$0.14
6304-GBox 144	18.10



**G-C TOGGLE SWITCH**

S.P.S.T. Radio and appliance switch. Open housing, underwriters approved. Made by Cutler-Hammer, 3 amp., 125 volt. Nickel Plated.

No.	List
1339 S.P.S.T.	\$0.45

**G-C PUSH-ON PUSH-OFF SWITCH**

For vacuum cleaners, appliances, test equipment. Made by H & H for G-C. Rated at 3 amps., 125 volts. Nickel Plated.

No.	List
1338 S.P.S.T.	\$1.45

**G-C BAT HANDLE SWITCH WITH WIRE LEADS**

For vacuum cleaners, appliances, radio sets, etc. Made by H & H for G-C. Rated at 8 amps., 125 volts. Nickel Plated.

No.	List
1335 S.P.S.T.	\$1.05

**G-C ON-OFF PLATE**

Will fit the G-C, H & H, Cutler-Hammer, and other makes of standard switches.

No.	List
1329 On-Off Plate	\$0.05

**G-C BAT HANDLE TOGGLE SWITCH**

Teardrop handle general purpose switch. Made by H & H for G-C. 8 amps., 125 volts. Nickel Plated.

No.	List
1330 S.P.S.T.	\$0.65
1331 S.P.D.T.	.85
1332 D.P.S.T.	1.25
1333 D.P.D.T.	1.40

**G-C TOGGLE SWITCHES**

Ball handle general purpose switch. Made by H & H for G-C. 8 amps., 125 volts. Nickel Plated.

No.	List
1300 S.P.S.T.*	\$0.65
1301 S.P.S.T.†	.80
1302 S.P.D.T.*	.85
1303 S.P.D.T.†	1.00
1304 D.P.S.T.*	1.25
1305 D.P.S.T.†	1.40
1306 D.P.D.T.*	1.40
1307 D.P.D.T.†	1.55

\* 1/2" Shank Length.  
† 3/4" Shank Length.



**G-C PUSH BUTTON SWITCH**

Two circuit, "slow make and quick break" momentary contact switch. One circuit normally on, other off; pushing button reverses circuits in use. Made by H & H for G-C. 3-amps., 125 volts. Shank 3/8" long.

No. List  
1340 Switch \$1.00

**PUSH BUTTON**  
For 1340 Switch Red or Black (Specify)  
1343 Button \$0.30

**G-C ROTARY SWITCHES**

Best grade enclosed rotary switches. Made by H & H for G-C. 3 amps., 125 volts. Shafts 1 1/2" long.

No.	List
1320 S.P.S.T.*	\$0.85
1321 S.P.S.T.†	1.00
1322 S.P.D.T.*	1.00
1323 S.P.D.T.†	1.15
1324 D.P.S.T.*	1.40
1325 D.P.D.T.*	1.55
1326 D.P.D.T.†	1.70

\* 3/8" Shank Length.  
† 1" Shank Length.

**G-C NEUTRAL CENTER SWITCH**

Handy radio, appliance and tester switch with 3 positions, On-Off-On. Rated 15 amps., 110 volts; 3/8" shank. Nickel Plated.

No.	List
1308 S.P.D.T.	\$1.35
1309 D.P.D.T.	2.30

**G-C EXTRA HEAVY DUTY POWER SWITCH**

Three position for motors, projectors, transmitters, movie equipment, etc. Made by H & H for G-C. 10 amps., 125 volts. Neutral off in center. Size 2" x 1" x 1 1/2", shank 3/8" diameter.

No.	List
1352 D.P.D.T.	\$5.25
1353 S.P.D.T.	8.25
1354 P.P.D.T.	12.00

**G-C HEAVY DUTY POWER SWITCH**

Push button, D.P.S.T. safety switch for transformers, racks, transmitters, refrigerators and high frequency work made by H & H for G-C. 12 amps., 125 volts. Nickel Plated.

No.	List
1351 D.P.S.T.	\$2.00

**G-C HEAVY DUTY POWER SWITCH**

D.P.S.T. toggle power switch for motors, appliances, projectors, etc. Made by H & H for G-C. 12 amps., 125 volts. Nickel Plated.

No.	List
1350 D.P.S.T.	\$1.55



**G-C SLIDE SWITCHES**

For phonographs, tone controls, auto lights, electric trains, etc. 1/2" wide x 1 1/2" center mounting.

No.	List
1355 S.P.S.T.	\$0.25
1357 S.P.D.T.	.25
1358 D.P.S.T.	.35
1359 D.P.D.T.	.35

**G-C RADIO FRICTION TAPE**

This narrow 3/8" tape was particularly made for radio work. It eliminates waste and tearing of tape. It saves time and is handy to carry with you.

No.	Roll	List
870	65 ft. 3/8"	\$0.55
871	65 ft. 1/2"	1.05

**G-C PLASTIC TUBING KITS**

Handy kits of assorted colors and sizes. Ideal for experimenters and servicemen.

No.	List
635 Kit of 25 ft. Assd.	\$0.90
635-D Display 8 No. 635	7.20
636 Kit of 15 ft. Assd.	1.25
636-D Display 8 No. 636	10.00

**G-C ASSORTED SPAGHETTI KIT**

An assortment of 7 1/2" lengths of spaghetti sleeving, 26 lengths to the kit. Sizes include from No. 17 wire to 3/8" I.D. A very handy bundle to have for repair jobs.

No.	List
550 Kit 26 Lengths	\$0.65

**G-C SPAGHETTI ASSORTMENT**  
"A Box Full of Spaghetti"

Here's a buy you can't beat on a spaghetti assortment. A variety of sizes and colors are included of high grade varnish tubing. Put up in attractive box.

No.	List
551	\$1.25

**G-C SPAGHETTI ON SPOOLS**  
"Approved by ASTM"

5000-Volt Dielectric Strength

Best grade varnished tubing put on convenient 20-ft. spools. Will fit wire from No. 12 to No. 18. Colors: Black, Red, Yellow, Green, Blue. Specify color.

No.	Spool	List
499	20-ft.	\$1.95

**G-C COATED SLEEVING**



Best grade varnished sleeving. Dielectric strength 2000 volts. Colors: Black, Red, Yellow, Green, Brown. Specify color.

No.	Size	List
525	No. 20, fit 20 wire	\$0.14
528	No. 17, fit 18 wire	.15
531	No. 14, fit 14 wire	.18
533	No. 12, fit 12 wire	.20
537	1/8" I.D.	.25
540	3/16" I.D.	.30
543	1/4" I.D.	.40
546	5/16" I.D. (resist. size)	.70
547	3/8" I.D.	.90

**G-C GENFLEX PLASTIC TUBING**  
"MADE OF EXTRUDED PLASTIC"

High grade extremely flexible plastic tubing for Radio and Electronic Insulation work. Resistant to cold or heat. High dielectric strength, average 8,000 volts. Put up in attractive individual boxes for easy handling. Colors: Black, Red, Green, Clear (Specify)

No.	Wire	Std.	Pkg.	List
C03	18	20 ft.		\$0.95
605	16	20 ft.		.95
C07	14	20 ft.		.95
C09	12	20 ft.		.95
611	10	15 ft.		.95
613	8	15 ft.		.95

No.	Wire	Std.	Pkg.	List
616	6	10 ft.		\$0.95
617	4	10 ft.		.95
620	2	10 ft.		.95
625	Fits over 300-ohm Twin Line	8 ft.		.95

All sizes available in continuous lengths on special order of 1,000 feet or more.

**G-C RADIO SPAGHETTI**



Best grade Radio and Television spaghetti. Smooth coated, with best varnishes. Very flexible. 6000 volt dielectric. Approved by ASTM. Colors: Black, Red, Yellow, Green, Brown. Specify color. 30" lengths.

No.	Size	List
500	No. 20, fit 20 wire	\$0.18
503	No. 17, fit 18 wire	.18
506	No. 14, fit 14 wire	.20
508	No. 12, fit 12 wire	.25
512	1/8" I.D.	.35
515	3/16" I.D.	.50
518	1/4" I.D.	.60
521	5/16" I.D. (resist. size)	.75
522	3/8" I.D.	.95
523	1/2" I.D.	1.20

GENERAL



CEMENT

BATTERY PLUGS—KITS—STAPLES

G-C RADIO BATTERY PLUGS



Part No.	Voltage	For Burgess No.	For Eveready No.	For R.C.A. No.	For Philco No.	For Ray-O-Vac No.	List Price
7803	45 "B" Large	A30, B30, M30, Z30	182, 738, 762	VS012, VS013, VS014, VS015	P210, P305	430P, P7830, P5803	\$0.11
7804	Same as No. 7826, except has Fahnestock Clips.						.35
7805	Same as No. 7829, except has Fahnestock Clips.						.50
7806	4 1/2 "A"	G-3	746	VS002	P100	P-33A	.11
7807	45 "B" Small	A30, B30, M30, Z30	182, 738, 762	VS012, VS013, VS014, VS015	P210, P305	430P, P7830, P5803	.11
7808	1 1/2 "A"	4F, 4FL, 6F, 8F, 8FL, TE	741, 742, 743, 1052P	VS004, VS005, VS007, VS008	P94, P96, P8F1	P84A, P94L, PK, P96A, P98L	.11
7800	1 1/2 "A", 90 "B"	17GD80, 5DA60, 6TA80	758	VS022, VS043	P60D11L	AB82, 10793	.13
7810	6 "A"	2F4, 2F4L, F4P1, T5	A509, 718, 744, 747	VS009, VS010, VS011	P4F4R	P894A, P896L, P898A, P898L	.11
7811	6 "A", 90 "B" etc.	2F4B80					.15
7812	7 1/2 "A"	G-5	687	VS003		P85A	.13
7813	1 1/2 "A", 63-90 "B"	6FA60, 4GA11, 4GA42		VS037	P60A-4L, P14A4G	AB419	.13
7814	7 1/2 "A", 90 "B"	G5A42, F5A60		VS058	P87, P841	AB794	.25
7815	67 1/2 "B"	XX30, XX45	455, 467	VS018, VS059		P4387	.09
7816	87 1/2 "B"	XX30, XX45	455, 467	VS018, VS059		P1367	.11
7817	Same as No. 7803, except has Fahnestock Clips.						.35
7818	Same as No. 7808, except has Fahnestock Clips.						.25
7819	6 "A", 75 "B" etc.	G4B50					.15
7820	6 "A", 90 "B"	F1B60		VS048			.20
7821	6 "A", 90 "B"	2F4A60		VS044	P60A8F4	AB604	.13
7822	9 "A", 90 "B"	4FA60					.25
7823	Same as No. 7824, except has Fahnestock Clips.						.25
7824	3 "A"	20F2	X125	VS025	PS024	P9403	.11
7825	"AB" Batt. Packs	Usalite	AB5671		P60A110		.18
7826	4 1/2 "A"	9370PI	X771	VS030	P31D	P281W	.15
7827	135 "B", 9 "C"				37-08, 3738, etc.		.25
7828	135 "B", 18 1/2 "C"				34, 34A, 39, 89A		.35
7829	22 1/2 "C"	51584T	768	VS031	P15H5	P5151	.22
7830	2 prong large with one thin and one thick. Popular on Portables.						.15
7831	9 "A", 90 "B"	F6A60, G6M60	753, 754	VS018, VS019		AB878, AB994	.25



G-C RADIO BATTERY PLUGS

For all plug-in radio batteries. It pays to have an assortment to be ready for all repairs. Plugs as listed above. Complete with box and handy reference chart.

No.	List
7801 100 Asstd. Plugs, Metal Box	\$12.00
7800 50 Asstd. Plugs, Cardboard Box	6.50

G-C INSULATED BELL STAPLES

Saddle-type insulated staples for holding wires in place and out of the way.

No.	List
1751 Fig. 1, 1/8" x 1/2"	\$0.25
1752 Box 50, No. 1	.40
1753 Fig. 2, 3/8" x 5/8"	.25
1754 Box 50, No. 2	.40
1755 Fig. 3, 1/2" x 3/4"	.25
1756 Box 50, No. 3	.40
1757 Fig. 5, 3/4" x 5/8"	.25
Box 50, No. 5	



No.	List
1758 Box 100, No. 5	\$0.40
1759 Box 100, No. 6	.45
1760 Box 100, No. 7	.45
Extra Large Cable Size	
1761 Fig. 10, 3/4" x 3/4"	.75
Box 100, No. 10	



G-C DIAL AND KNOB REPAIR KIT

Handy assortment of knob springs, set screws, dial springs, driver pulleys and idler rubbers in box.

No.	List
1015 70-pc. Kit,	\$2.25
1016 150-pc. Kit,	4.50

G-C PLASTIC JAR HARDWARE ASSORTMENT

Approximately 1000 assorted screws, nuts, washers, springs, clamps, eyelets, grommets, terminals, etc. No cast-offs — only regular hardware. Plastic jar with screw cap.

No.	List
6064 1000 Asstd.	\$1.65
6056-E Env. 100 Asstd.	.40

G-C HELL BOX

A grand assortment of useful hardware; screws, nuts, lugs, clips, washers, clamps, etc. Thousands of items needed every day. Metal hinged box.

No.	List
6500	\$3.25



G-C STEEL HARDWARE RACK

Steel racks, hold No. 4002 2 oz. glass bottles or plastic jars. Attractively finished. Welded construction. Heavy steel. Two sizes.

No.	Size	List
4010	20 Jars	\$2.50
4012	40 Jars	4.50



G-C STEEL STOCK BOXES

Slide-in drawer type cabinet box for parts. Made so can be stacked. Attractive finish, steel welded construction with handle. Size 13 1/2" long, 6" wide, 4" high.

No.	List
4001	\$3.25



G-C SERVICEMEN'S HARDWARE ASSORTMENT

Inexpensive complete hardware assortment. Similar to larger hardware Laboratory Assortment No. 6601 (Page U-106). Items individually packaged.

No.	Asst.	List
6603-D	#1	\$8.00
6603-2-D	#2	8.00



G-C VENTILATING PLUGS

To ventilate chassis, amplifier, racks, transmitters, etc. Snaps into 1-inch hole. Plated.

No.	List
1709-E Env. 4	\$0.40



G-C PLASTIC HARDWARE JARS

4 oz. size wide mouthed plastic jar with screw type cap. Ideal for hardware.

No.	List
4000	\$0.30



G-C GLASS HARDWARE JARS

Wide mouthed jars, for storing small radio parts, screws, nuts, etc. Includes cap.

No.	List
4002 2-oz.	\$0.15
4004 4-oz.	.22
4008 8-oz.	.30
4009 16-oz.	.40



G-C SOLDER IRON TIPS

Best grade hand-drawn copper, bright plated to resist corrosion. Heats fast and holds heat.

No.	Tip	List
724	1/4" x 8"	\$0.45
725	1/8" x 4 1/2"	.56
726	3/8" x 4 1/2"	.60
727	1/8" x 4"	.75



G-C SOLDERING WIRE COUPLERS

(Patent Pending) New patented connectors to be used when re-connecting cut wires and leads, when making tests, etc. Saves time! Simply slip between wires and solder. Assorted lengths.

No.	List
7500-E	\$0.40



G-C STAPLE DRIVER STAPLES

Hardened steel staples in cartridge form to fit staple drivers. Lacquer coated.

No.	List
430 Box 250	\$0.60

TV LINE TACKS

For holding 800-ohm lead wire to base boards, etc.

No.	List
8020-E Env. 30	\$0.40
8020-G Box 144	1.25



**G-C CHASS-EZ**  
(Pat. Pending)

New wonder tool makes the Serviceman's job easier. Its simplicity is its chief merit. Chassis can be installed on "Chass-Ez" in five seconds. All one unit — no extra bolts or nuts to adjust. Heavy steel, riveted construction, nicely plated.



No.	List
5207	\$3.65
Dealer's Net Only	1.95

**G-C PHONO TURNTABLE STAND**

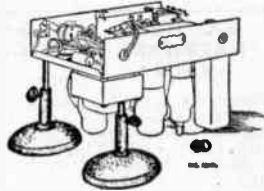
New improved model, adjustable and inexpensive. Adaptable to all turntables. Raises the turntable 15 inches above bench and can be pivoted on the swivel joints for easy examination or repairs. Sturdy steel construction. Plated.



No.	List
5205	\$7.30
Dealer's Net Only	4.38

**G-C RADIO JACKS**

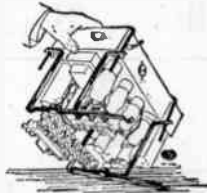
Permanent type adjustable jacks. All metal construction. Adjustable to fit any set or conditions. Easily and quickly adjusted. Two jacks supplied with three extension rods — one extra long. You need several sets in your shop.



No.	List
711	\$2.15
Dealer's Net Only	1.29

**G-C RADIO CHASSIS GUARDS**

Inexpensive guards that protect the chassis and tubes when servicing. Set can be turned in any position. Easily applied and adjustable to all sets. Permanent plated metal construction.



No.	List
709	\$2.50
Dealer's Net Only	1.50

**G-C MINIATURE TUBE PIN STRAIGHTENER**

Saves tubes! Straightens without damage the pins on the fragile miniature tubes such as 1S5, 6AK5, 9002, etc. Just insert tube between guide pillars into precision base die and tube prongs are straightened and properly spaced. All metal.



No.	List
5191 For 7-pin tubes	\$1.00
8105 For 9-pin tubes	1.00

**G-C TUBE AND PARTS EXTRACTOR**

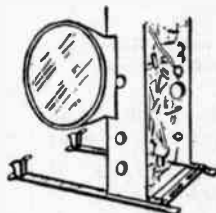
U. S. Signal Corps part No. TL 201. Handy prong tool for extracting tubes and picking up parts. Rubber cushions on prongs.



No.	List
5092 Tube Extractor	\$1.50

**G-C TELEVISION SAF-T-RACK**

A simple, sturdy rack to use in repairing heavy television chassis. Simple set it on the rack and tilt it on side. The sturdy hooks will hold the chassis on its side so you can work on it. It will prevent the tubes from being damaged.



No.	List
8045 Saf-T-Rack	\$4.95

**G-C DANDY TEST LITE**



New neon test lite for checking radios, television sets, fuses, circuits, etc. Simple, safe and dependable for tracing all kinds of trouble. Use on voltages of 60 volts AC to 550 volts AC or DC.

No.	List
8585 Dandy Lite	\$ 1.00
8585-D Display 12 #8585	12.00

**G-C NE-O-LITE**



A simple, safe, electrical circuit tester for voltages from 60 volts AC to 550 volts AC or DC. Used for radio, electrical and automotive testing. Molded plastic.

No.	List
5100 Ne-O-Lite	\$0.60
5112-D Display 12 #5100	7.20

**G-C NE-O-LITE WIRE**



Wire same as used on Ne-O-Lite Testers, # 18 stranded, rubber covered with a red or black braid, varnished. For ignition wiring, motor wiring, etc. Red or Black — Specify color.

No.	List
5113 100 Ft.	\$3.75

**G-C RESISTOR FOR NEON LAMP**



Required resistor when using No. 717 neon lamp on voltages of 60 to 550 volts AC or DC. Connect in series.

No.	List
718	\$0.10

**G-C NEON GLOW LAMPS**



NE-T2 lamp as used in testers, appliances, as pilot light, etc.

No.	List
717	\$0.25

**G-C AMO MINIATURE TUBE PULLER**  
(Pat. Pending)

Prevents burned fingers and broken tubes. Makes it easy to remove and install tubes such as 6AG5, 60B5, etc. Works on suction and vacuum principle. Operates just by pressing on the tube and to release, just press the release button. Tube protected by rubber sleeve. Gets where your fingers can't reach. Permanent metal.



No.	List
5093 For 7-pin tubes	\$1.65
8106 For 9-pin tubes	1.65

**G-C FIBRELOID SPEAKER SHIMS**

Shims made of tough and flexible fibreloid. Non-magnetic. 4 each of 5 sizes — twenty in all: Sizes, .005", .0075", .010", .0125", and .015". Color coded. Supplied in gold lettered leatherette snap case with instructions.



No.	List
702 Kit	\$0.65

**G-C SWEDISH STEEL SPEAKER SHIMS**

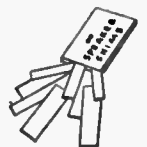
Makes it easier to center speaker voice coil. Permanent flexible Swedish steel. 4 shims each of 4 sizes coded for identification: .004", .006", .008" and .010" thick. Supplied in gold stamped leatherette partitioned snap case. Complete with instructions.



No.	List
701 Kit	\$0.70

**NEW! G-C SPEAKER SHIM KIT**

For every type of speaker adjustment. A generous supply of Fibreloid and bronze shim stock in the various widths and thicknesses needed for speakers. Non-magnetic material. Stock can be cut to exact requirements. A long-lasting assortment. Complete instructions.



No.	List
7720 Kit	\$2.00

**G-C RECORDING WIRE**



For all wire recorders. Includes plastic leads. Permanent recordings which can be replayed indefinitely. Finest quality reproduction on stainless steel wire. Standard RMA spool fits Webster, Air King, Sears Roebuck, etc.

No.	Leaders with Spools	List
5171	1-hr. Spool . . . . .	\$4.50
5172	½-hr. Spool . . . . .	2.75
5173	¼-hr. Spool . . . . .	1.85
5174	Leaders only, for Armour type recorders, per pair . . . . .	.20
5176	Empty Rewind Spool . . . . .	1.00
5175	Envelope Nylon Webster Cord . . . . .	.40

**G-C REPLACEMENT AUTO AERIALS**

**FORD ROOF AERIAL**

Ford-Mercury Part No. 51A-18813-A1



Replacement aerial for all Ford and Mercury Roof Aerials of 1941-42-46-47-48 that operate from behind the dividing post of the windshield. Made of Admiralty brass tubing with stainless steel extension rod, triple chrome plated. Free sliding with positive contacts insure noise-free reception. Easy to install, fits without changes, replaces original aerial. Comes complete with knob and set screw.

No.	List
7056 Ford Roof Aerial	\$2.25

**BUICK REPLACEMENT ANTENNA**

Buick Part No. 980,688

Standard Buick Roof Aerial Mast. The replacement mast for Buick Roof Aerials on models 1940 through 1949. Easy to replace — merely tightens into position with a set screw. Admiralty brass tubes with a stainless steel top rod. Chrome-plated. Each mast individually packed in a paper tube. Standard packing — 10 tubes to a carton.

No.	List
7057 Buick Antenna Mast	\$2.75

**G-C IGNITION SUPPRESSORS**



A rugged long-life assortment of bakelite auto radio ignition suppressors. Resistance, 10,000 ohms (V-8 types, 50,000 ohms). Resistors, moisture-proofed to eliminate variations due to weather changes. Impervious to heat, oil, moisture and mild acids. All metal parts brass. Good for more than 50,000 miles.

No.	List	No.	List
(a) 1501 Bracket Type	\$0.30	(e) 1505 Screw Type, Universal	\$0.30
(b) 1502 Ford V8	.30	(f) 1506 Snap-On Type	.30
(c) 1503 Ford V8 Brush Type, 33, 34, 35 Cars	.30	(g) 1507 Distributor Type	.30
(d) 1504 Ford V8 Brush Type, 36 to 40 Cars	.30	(h) 1508 Cable type for Splicing Cables	.30

**G-C SPRING MAKER**

(Pat. Pending)



Makes all types of coil springs — compression or extension types — with any number of coils or degree of wire pitch. Designed for simple adjustment and operation with any size spring wire. Necessary wherever springs must be made fast or to special specifications. Liberal supply spring wire furnished with each winder. Fastens to any bench.

No.	List	Dealer's Net
5209 Spring Winder and Asst. Spring Wire	\$16.58	\$9.95*
5210 Replacement Asst. Spring Wire	2.50	1.50*

**G-C STATIC POWDER AND INJECTOR GUN**



It really works, cuts down auto radio static. Inject powder in tubes, and eliminate wheel tire static. Easy to apply. Powder also cuts down tire trouble by eliminating those pin-point tube leaks caused by tire static discharge. Powder blown into tube with G-C Injector Gun. Every car should be treated with G-C Static Chaser Powder.

No.	List
5604 Injector Gun, only	\$1.65
5605 Packet Static Powder for 5 tires (1 car)	1.00
5606 Kit, one No. 5604 Injector, and one No. 5605 Powder	2.50

**G-C DIAL POINTER KIT**

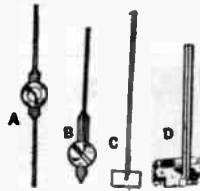


A complete kit of 10 assorted dial pointers. Pointers come in a clear transparent plastic case which keeps the pointers in perfect condition.

No.	List
6810	\$2.95

**G-C DIAL POINTERS**

Popular replacement pointers.



No.	List
(a) 6801 3" Rotary Pointer for ¼" shaft, gold	\$0.35
(b) 6802 5" 360° Rotary Pointer for ¼" shaft, gold and red	.35
(c) 6803 2" Slide Pointer, red translucent	.35
(d) 6804 2¼" Slide Pointer, white enamel	.30
6809 Kit 25 pointers	4.95
6810 Kit 10 pointers	2.95

**G-C VACUUM CLEANER BELTS**



Dealers and servicemen earn extra money by selling belts. Display in your store for "over the counter sales." Best grade live rubber belts marked for identification. Popular belt assortments on displays.

No.	List
1010-D Asst. 12 Belts, Most Popular	\$2.80
7010-D Asst. 12 Popular Flat Belts	2.70
7011-D Asst. 12 Popular Round Belts	3.00

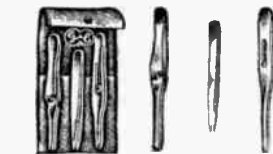
(Individual belts available — see your Distributor)

**G-C HUB CAP STATIC SPRINGS**



Eliminate wheel static noise developed by poor electrical contact between front axle and wheels. Springs have riveted metal points for firm, smooth contact. Plated.

No.	Each	List
1058		\$0.12
1059	Box, 24 Springs	2.75



**G-C TWEEZERS AND KIT**

For the shop or laboratory to pick up and examine small parts, start screws and nuts, to get in hard-to-get spots, stringing dial cord, fastening springs, etc.

No.	List
7950 Tweezer Kit, beautiful leatherette case and one each tweezers described below . . . . .	\$3.25
7946 6½" Self-closing tweezers. Opens when squeezed. Serrated, blunt points . . . . .	0.80
7947 6½" Heavy-duty type with slide lock feature. Holds wires or parts tight like an extra finger. Serrated, blunt points . . . . .	1.20
7948 4¼" Precision Tweezer. Narrow pointed ends for delicate work . . . . .	0.55

\*Standard Jobber's quantity: 12 tweezers on display card — Add suffix "D"

**G-C TOOL HANDLE INSULATING TUBES**



A new idea for insulating your handle tools. A supply of special insulating tubing in assorted sizes is included in kit to insulate all types of handles on pliers, cutters, screw driver blades, etc. You simply soak the tubing for a few minutes in G-C Service Solvent and the tubing will swell. Slip it over the handles and allow it to dry. It will shrink on drying and give it a professional appearance. (G-C Service Solvent is not included in kit.)

No.	List
8118-E Env. Asstd. Tubing	\$0.40
8118-D Display of 20 Env.	8.00



**G-C SHAFT COUPLINGS, EXTENSIONS AND REDUCERS**

BRASS FITTINGS		INSULATED FITTINGS	
No.	List	No.	List
6701	1/4" to 1/4" coupling... \$0.25	6721	1/4" to 1/4" coupling... \$0.25
6702	1/4" to 3/16" coupling... .30	6722	1/4" to 3/8" coupling... .30
6703	1/4" to 1/2" coupling... .25	6725	1/4" hole to 1/4" shaft extension... .30
6704	1/4" hole to 1/4" shaft extension... .30	6734	1/4" x 6" fibre shaft... .30
6710	3/8" hole to 1/4" shaft extension and reducer... .30	6735	1/4" x 12" fibre shaft... .55
6712	1/4" x 6" brass shaft... .20	6737	1/4" x 12" bakelite shaft... 1.00
6713	1/4" x 12" brass shaft... .35		
6716	1/4" hole x 1/4" round shaft x 4" long... .35		



**G-C REDUCING BUSHINGS**

No.	List
6751-E 1/4" to 1/8" reduction, 8 in Env.	\$0.40
6751-G 144 No. 6751 (Gross)	6.50



**G-C SHAFT EXTENSIONS**

No.	List
6755 1/4" x 4 1/2" Long Flat Shaft Extension	\$0.40
6716 1/4" x 4 1/2" Long Round Shaft Extension	.35



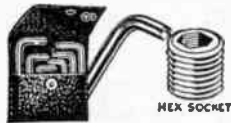
**G-C BRASS AND INSULATED SPACERS AND BUSHINGS**

No.	Assortments	List
6617	Hardware Lab. Jar 12 Assorted Spacers and Bushings	\$0.65
6760-E	Env. 12 Asst. Ins. Spacers	.40
6762	15 Asst. Threaded Brass Bushings 6-32 thread, 1/4" to 3/4" lg.	1.25
6763	15 Asst. Threaded Brass Bushings 8-32 thread, 1/4" to 3/4" lg.	1.25
6775-E	Env. 12 1/4" x 1/4" Ins. Spacers	.40
6761-E	Env. 12 Asst. Metal Spacers	.40

BRASS				INSULATED			
No.	O.D.	Length	List	No.	O.D.	Length	List
6765	1/4"	1/4"	\$0.04	6775	1/4"	1/4"	\$0.04
6767	1/4"	1/2"	.05	6776	1/4"	3/8"	.05
6768	1/4"	3/4"	.06	6777	1/4"	1/2"	.05
6769	3/8"	1/4"	.05	6778	1/4"	3/8"	.08
6770	3/8"	1/2"	.06	6779	3/8"	1/4"	.05
6771	3/8"	3/4"	.07	6780	3/8"	1/2"	.06
				6781	3/8"	3/4"	.07

**THREADED BRASS BUSHINGS**

Thread				Thread					
No.	O.D.	Size	Length	List	No.	O.D.	Size	Length	List
6785	1/4"	6-32	1/4"	\$0.05	6790	1/4"	8-32	1/4"	\$0.05
6786	1/4"	6-32	3/8"	.07	6791	1/4"	8-32	3/8"	.07
6787	1/4"	6-32	1/2"	.08	6792	1/4"	8-32	1/2"	.08
6789	1/4"	6-32	3/4"	.09	6793	1/4"	8-32	3/4"	.09



HEX SOCKET



SPLINE SOCKET

**G-C ALLEN-HEX WRENCHES AND KITS**

Made of alloy steel properly hardened. Used on knobs, dials, phono needles, motors, pulleys, etc.

No.	List
5030-E Env. 4 Asstd. Wrenches	\$0.50
5029-E Kit 6 Asstd. Wrenches in Leatherette Case	.75
5029-A-E Env. 3 Hex Key Wrenches for No. 1/4" to 3/8" Set	.50
5031 Screws	.12
5032 No. 5	.12
5033 No. 8	.12
5034 No. 10	.12
5035 1/4"	.12
5036 3/8"	.13
5037 1/2"	.13

**G-C BRISTO-SPLINE WRENCHES AND KITS**

Very popular "Bristo" or "Spline" type wrenches as used on phono needles, motors, pulleys, knobs, etc. Made of alloy steel, properly hardened.

No.	List
5069-E Env. 4 Asstd. Wrenches	\$0.50
5070-E Kit 6 Asstd. Wrenches in Leatherette Case	.75
5071 No. 4	.12
5071-A No. 5	.12
5072 No. 6	.12
5073 No. 8	.12
5074 No. 10	.12
5075 1/4"	.12



**G-C 8-PIECE VEST POCKET SET**

Handiest tool! Seven sockets, 1/4", 3/8", 1/2", 5/8", 3/4", 7/8" hex; 3/8" round knurled, 1/4" square, complete with 4" L handle.

No.	List
712	\$1.60



**G-C WIRE STRIPPER**

5-in-1 tool. Wire stripper, scraper, cutter, screwdriver, and wire winder all in one. Tempered steel.

No.	List
757	\$0.40



**G-C 6-PIECE SLIP-ON WRENCH SET**

Handle holds five sockets, sizes 1/4", 3/8", 1/2", 5/8", and 3/4". Easily assembled. Tempered steel, plated.

No.	List
715	\$2.00

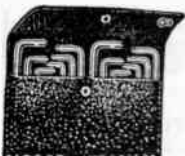


**G-C FUSE PULLERS**

For cartridge fuses. Heavy duty construction of high dielectric material.

No.	List
5525 Midget size, for fuses 1/4" x 1/2"	\$0.60
5526 Large size, for fuses 1/2" x 1 1/2"	1.25

**G-C ALLEN-BRISTO WRENCH KIT**



Complete wrench kit for hex and spline type screws. Double snap button case of durable leatherette. Fit No. 2 to 3/8" screws.

No.	List
5028	\$1.65



**G-C ELECTRONIC HARDWARE LABORATORIES**

Complete assortment of hardware. Rack contains several thousand essential electronic hardware items. Packed in clear jars with screw caps. Assortments as below: Free Steel Rack!

No.	Assortment	List	Dealer's Net
6604	DeLuxe Hardware Laboratory, 40 jars	\$26.00	\$15.60*
6601	20 jar assortment	13.00	7.80*



**G-C INSPECTION LITE**

Operates on 110-120 volts AC or DC. Cord approx. 6 ft. long.

No.	List
705 Inspection Light	\$1.95
704 Replacement Bulb for No. 705	.17
704-S Clear Plastic Shield	.17



**G-C LO-VOLT TESTER**

For 0-15 volts AC or DC. For all low voltage testing on cars, generators, batteries, bell circuits, etc.

No.	List
5125 Lo-Volt Tester	\$1.25
5126 Bulb for No. 5125	.25
5127 Shield for No. 5125	.15



**G-C THERMO-VOLT CIRCUIT TESTER**

Tests from 15 to 60 volts AC or DC on thermostats, aircraft, trains, marine lighting, 28-32 volt light plants, etc.

No.	List
5150	\$1.75









**G-C CARBON BRUSH KIT**

Complete assortment replacement brushes, for vacuum cleaners, washing machines, ironers, pumps, fans, etc. Contains 92 brushes and 18 springs.







No.	List
7000	\$5.00

# GENERAL CEMENT RADIO KNOBS - KITS





					
<b>MAJESTIC BAKELITE KNOBS</b> Popular pattern. Set screw type. $\frac{3}{8}$ " diam., $\frac{1}{4}$ " shaft. No. List 1100 Walnut \$0.16 1100-I Ivory .20	<b>ROYAL BAKELITE KNOBS</b> Beautiful pattern. Set screw type. $\frac{3}{8}$ " diam., $\frac{1}{4}$ " shaft. No. List 1105 Walnut \$0.16 1105-I Ivory .20	<b>YANKEE BAKELITE KNOBS</b> Set screw type. $\frac{3}{8}$ " and 1" diam., $\frac{1}{4}$ " shaft. No. List 1109 $\frac{3}{8}$ " Wln. \$0.16 1110 1" Walnut .16 1109-I $\frac{3}{8}$ " Ivory .20 1110-I 1" Ivory .20	<b>MODERN LARGE KNOB</b> Knurl shaft or set screw types. $1\frac{1}{8}$ " diameter. No. List 1176 Walnut \$0.12 Set Screw Type 1177 Walnut .16	<b>NEW LARGE KNOB</b> Knurl shaft or set screw types. $1\frac{1}{8}$ " diameter. No. List 1178 Walnut \$0.12 Set Screw Type 1179 Walnut .16	<b>POPULAR LARGE KNOB</b> Knurl shaft or set screw types. $1\frac{1}{8}$ " diameter. No. List 1181 Walnut \$0.12 Set Screw Type 1181 Walnut .16

					
<b>MIDGET BAKELITE KNOBS</b> Set Screw Type For small sets. $\frac{1}{8}$ " diam., $\frac{1}{8}$ " shaft. No. List 1115 Walnut \$0.12 1116 Ivory .13 1117 Red .13 1118 Black .12	<b>ROYAL BAKELITE KNOBS</b> Non-Pointer Type For small sets. $\frac{1}{8}$ " diam., set screw $\frac{1}{8}$ ". No. List 1111 Walnut \$0.12 1112 Ivory .13 1113 Red .13 1114 Black .12	<b>STREAMLINE POINTERS</b> The most popular pointer knob. $\frac{3}{8}$ " shaft, set screw type $1\frac{1}{4}$ " long. No. List 1136 Black \$0.15 1136-W Walnut .16 1137 Red .18 1137-I Ivory .20	<b>STREAMLINE POINTERS</b> A very popular pointer knob. $\frac{3}{8}$ " shaft, set screw type, 2" long. No. List 1135 Black \$0.20 1135-W Walnut .24 1138 Red .24 1138-I Ivory .26	<b>MODERN POINTER BAR KNOBS</b> Brass Bushing For intercomms and instruments. Black finish. Set screw, $\frac{1}{4}$ " shaft, $1\frac{1}{2}$ " long. No. List 1130 Black \$0.38 1130-W Walnut .38	<b>MODERN POINTER BAR KNOBS</b> For intercomms and instruments. Black finish. Set screw, $\frac{1}{4}$ " shaft, $1\frac{1}{2}$ " long. No. List 1131 Black \$0.35 1131-W Walnut .35





					
<b>INSTRUMENT KNOB</b> A heavy duty knob for communication equipment, instruments. $\frac{3}{4}$ " brass insert, set screw. $1\frac{1}{4}$ " O.D. x $\frac{3}{8}$ ". No. List 1175 Black \$0.35	<b>STREAMLINE POINTERS</b> Brass insert. $\frac{1}{4}$ " shaft, set screw. $1\frac{1}{4}$ " long. No. List 1170 Black \$0.25 1170-W Walnut .25 1172 Red .30 1172-I Ivory .30	<b>STREAMLINE POINTERS</b> Brass Bushing Brass insert. $\frac{1}{4}$ " shaft, set screw. $2\frac{1}{2}$ " long. No. List 1171 Black \$0.30 1171-W Walnut .30 1173 Red .36 1173-I Ivory .36	<b>POPULAR BAR KNOB</b> For intercomms, instruments, appliances. Bakelite with set screw. $\frac{1}{4}$ " hole, $1\frac{1}{2}$ " long. No. List 1132 Walnut \$0.20	<b>POPULAR PLASTIC KNOB</b> $1\frac{1}{8}$ " diameter with $\frac{1}{2}$ " shank extension for $\frac{1}{4}$ " knurled shaft. No. List 1153 Walnut \$0.12 1154 Ivory .13	<b>ATTRACTIVE PLASTIC KNOB</b> $1\frac{1}{8}$ " diameter, flush type for $\frac{1}{4}$ " knurled shafts. No. List 1155 Walnut \$0.12 1156 Ivory .13

					
<b>MIDGET TYPE PLASTIC KNOB</b> $\frac{3}{8}$ " diam., $\frac{3}{8}$ " shank for $\frac{1}{4}$ " knurled shafts. No. List 1157 Walnut \$0.12 1158 Ivory .13	<b>MIDGET TYPE PLASTIC KNOB</b> $\frac{3}{8}$ " diam. flush type for $\frac{1}{4}$ " knurled shafts. No. List 1159 Walnut \$0.12 1160 Ivory .13	<b>ACORN PLASTIC KNOB</b> $\frac{3}{8}$ " diam., $\frac{1}{4}$ " shank for $\frac{1}{4}$ " knurled shafts. No. List 1182 Walnut \$0.12 1183 Ivory .13	<b>PUSH-ON KNURL KNOB</b> $1\frac{1}{8}$ " diam. flush type for $\frac{1}{4}$ " knurled shafts. No. List 1184 Walnut \$0.12 1185 Ivory .13	<b>PUSH-ON KNURL KNOB</b> $1\frac{1}{8}$ " diam., $\frac{1}{2}$ " shank for $\frac{1}{4}$ " knurled shafts. No. List 1186 Walnut \$0.12 1187 Ivory .13	<b>POINTER TYPE PLASTIC KNOB</b> $1\frac{1}{8}$ " diam., $\frac{1}{2}$ " shank for $\frac{1}{4}$ " knurled shafts. No. List 1188 Walnut \$0.12 1189 Ivory .13

					
<b>MIDGET TYPE PLASTIC KNOBS</b> $1\frac{1}{8}$ " diam., $\frac{1}{2}$ " shank for $\frac{1}{4}$ " knurled shafts. No. List 1197 Walnut \$0.12 1198 Ivory .13	<b>MIDGET TYPE PLASTIC KNOBS</b> $1\frac{1}{8}$ " diam., flush shank for $\frac{1}{4}$ " knurled shafts. No. List 1193 Walnut \$0.12 1194 Ivory .13	<b>SPRING AND D-SHAFT KNOBS</b> Spring type. $1\frac{1}{8}$ " diam. Fits $\frac{1}{4}$ " flat shafts. No. List 1151 Walnut \$0.12 1152 Ivory .13	<b>SPRING AND D-SHAFT KNOBS</b> D- or flat shaft type. $\frac{3}{8}$ " diam. No. List 1161 Walnut \$0.12 1162 Ivory .13	<b>SPRING AND D-SHAFT KNOBS</b> D- or flat shaft type. $\frac{3}{8}$ " diam. No. List 1163 Walnut \$0.13 1164 Ivory .14	<b>SPRING AND D-SHAFT KNOBS</b> D- or flat shaft type. 1" diam. No. List 1165 Walnut \$0.14 1166 Ivory .15

			
<b>G-C AUTO RADIO KNOBS</b> $1\frac{1}{8}$ " diam. x $1\frac{1}{2}$ " high. For $\frac{1}{4}$ " and $\frac{3}{8}$ " shafts. Brass bushing with set screw. No. List 1191 Pearl Gray \$0.30 1192 Maroon .30 1167 Pearl Gray .35 1168 Maroon .35	<b>G-C AUTO RADIO KNOBS</b> Set screw type auto radio knob. $1\frac{1}{8}$ " diam. x $\frac{3}{4}$ " high. For either $\frac{1}{4}$ " or $\frac{3}{8}$ " shafts with bushing. No. List 1195 Pearl Gray \$0.30 1196 Maroon .30	<b>G-C AUTO RADIO KNOBS</b> Chrome plated. For $\frac{1}{4}$ " and $\frac{3}{8}$ " shafts. Set screw mounting. No. List 1169 $\frac{1}{4}$ " \$0.30 1174 $\frac{3}{8}$ " .30	<b>G-C KNOB SET SCREW ASST.</b> Handy set screw assortments for radio knobs, shafts, pulleys. 6-32, 8-32, and 10-32. No. List 1060 50 Asst. \$1.10 1061 100 Asst. 2.00 1062-E 15 Asst. .40 6605 30 Asst. .65

	
<b>G-C RADIO KNOB KITS</b> Popular plastic knobs in assorted kits, all kinds of knobs included. No. Quantity List 1140 35 Asstd. Push-on Buttons \$3.95 1141 28 Asstd. Spring Knobs 3.95 1142 24 Asstd. Set Screw Knobs 3.95 1143 80 Asstd. All Type Knobs 3.95 1144 12 Asstd. Auto Radio Knobs, for $\frac{1}{4}$ " and $\frac{3}{8}$ " shafts 3.95	<b>G-C RADIO KNOB PULLER</b> Very handy in removing knobs that are hard to pull off. Simply slip behind knob and pull off. Saves the cabinet and the knobs. No. List 1063 \$0.40

			
<b>G-C KNOB ASST.</b> No. List 1102 85 Asst. All Types Knobs \$1.67 8026 60 Auto Radio Button Knobs 1.67	<b>G-C KNOB SPRING KITS</b> No. List 1049-E Env. 20 Asstd. \$0.40 1050 Kit 35 1.00 1051 Kit 100 1.75 6619 Jar 35 Asstd. .65	<b>G-C KNOB FELTS</b> Used behind knobs. No. List 1065-E Env. 50 \$0.40 6641 Jar 70 .65	<b>G-C KNOB BUSHINGS</b> Reduces from $\frac{1}{4}$ " to $\frac{3}{8}$ ". For auto radios. No. List 6751 \$0.40



GENERAL



CEMENT

PHONO NEEDLES and ACCESSORIES



**G-C MASTER POINT PHONO NEEDLES**

**G-C CATHEDRAL TONE**

Long life, excellent tone needle made with osmium alloy tip to insure uniform reproduction and long life. Will save the records and give excellent reproduction for a long time.

No.	Each	List
1430		\$0.75
1431-D	Display	
	12 # 1430,	9.00

**G-C SYMPHONIC NEEDLE**

Superior quality long life needle designed to give excellent tone. Special osmium alloy tip gives true reproduction with less pressure on the records. Will last indefinitely.

No.	Each	List
1435		\$1.00
1435-D	Display	
	12 # 1435,	12.00

**G-C GRAND**

Very finest "long life" curved "spring action" needle that will bring out the finest tones in music. Special osmium alloy tip insures long life. Tip is perfectly formed to fit record grooves. The best.

No.	Each	List
1436		\$1.50
1436-D	Display	
	12 # 1436,	18.00

**G-C RECORD-LIFE LUBRICANT**

Simply wipe record with "Record-Life" and the needle will glide over the record smoothly. Prevents record and needle wear; also eliminates noises and scratching sounds. Use also for making records.

No.	List
125-1 1-oz.	\$0.45
125-2 2-oz.	.60
125-4 4-oz.	1.00
125-6 6-oz.	1.35

**G-C REK-O-DOPE**

Required lubricant when recording and cutting records. All purpose, it cools, cleans, lubricates, and hardens grooves when cut. Rek-O-Dope will give better tone and longer life.

No.	List
126-1 1-oz.	\$0.45
126-2 2-oz.	.60
126-4 4-oz.	1.00
126-6 6-oz.	1.35

**G-C CORD CONNECTOR**

Handy cord connector to connect phono motors to radio sets, for appliances, vacuum cleaners, sewing machines, etc.

No.	List
868	\$0.25



**G-C JUKE SPECIAL PHONO NEEDLE**

Long life needle. Preferred by operators on coin machines, automatic records, etc. Precious osmium tip will give long, hard service and tone quality, even when used with heavy pick-ups. Will give thousands of plays.

No.	Each	List
1437		\$1.00
1437-D	Display	
	12 # 1437,	12.00

**G-C RECORDING STYLUS**

The best cutting stylus made from alloy steel will give several hours of good cutting. Make your own recordings.

No.	List	
1433	\$0.50	
1434-D	Display	
	12 # 1433,	6.00

**G-C PICK-UP AND CARTRIDGE SCREW ASST.**

Contains small size screws and bushings such as used on cartridges of pick-up arms.

No.	List	
6000-E	60 Screws,	\$0.40

**CARTRIDGE MTC. SCREWS**

6005-E	Env. 60	4-36 x 1/4" \$0.40
6005-AE	Env. 60	4-40 x 1/4" .40

**G-C RECORD TURNTABLE FELT**

Re-cover phono turntables with ready cut felts. Dark brown.

No.	Dia.	List
1292	7 7/8"	\$0.45
1296	8 7/8"	.60
1293	9 7/8"	.65
1294	11 7/8"	.75
1295	15 7/8"	1.30
Brown Felt —		
By The Yard		
1298	36" Wide,	per yd. 10.00

**G-C SHIELDED PHONO PICK-UP WIRE**

Handy package of single conductor shielded wire as used on phono pick-ups, etc. Enough wire for several jobs in package.

No.	List	
1738-E	Envelope	\$0.40

**G-C RECORD CLEANING PAD**

Specially treated soft felt pad for cleaning and removing dust from records. Saves records.

No.	List
1290	4" x 4" \$0.25
1291	6" x 6" .45



**G-C PHONO NEEDLE STYLUS SCREWS**

Here's the hard-to-get replacement thumb set screws for pick-up arms and recording heads!

No.	15 Asst. Stylus Screws	List
1052		\$ 1.75
1052-E	Env. 7 Asst. Screws	.40
1053	100 Asst. Stylus Screws	11.00

**Individual Phono Screw Specifications**

	Env. of	List
P1-E	For Shure Brothers, etc.	3 .40
P2-E	For Astatic, RCA, Seeburg, Webster, etc.	4 .40
P3-E	For Astatic, Stromberg-Carlson, Universal, Webster, etc.	4 .40
P4-E	For Rek-O-Cut, Webster, etc.	3 .40
P5-E	For RCA, etc.	3 .40
P6-E	For RCA, etc.	4 .40
P7-E	For Webster, etc.	3 .40
P8-E	For Shure Brothers, etc.	3 .40
P9-E	For RCA, Astatic, Webster, etc.	3 .40
P10-E	For Audex, etc.	3 .40

**G-C STA-PUT PHONO-GEAR LUBRICANT**



New "STA-PUT" lubricant for phonomotors, gears, shafts, etc. Will not run or drip—it "Stays Put." Recommended by RCA, G-E, and others.

No.	List
1223	Tube \$0.60
122-2	2-oz. .60

**G-C RADIO AND TELEVISION DRIVES**

No.	List
1024-SE	Env. Asst. 5 Small \$0.40
1024-LE	Env. Asst. 5 Large .40
1024-E	Env. Asst. 10 Dial .80
1025	Box 25 Asst. Drives 1.50
1026	Box 100 Asst. 6.00
1	AK Small .10
2	AK Large .10
3	Stewart-Warner .10
4	Kennedy, Wells-G. .10
5	Stewart-Warner .10
6	RCA .10
7	Stewart-Warner .10
8	Stewart-Warner .10
9	Atwater-Kent .10
10	Stewart-Warner .10
11	Lgc. Atwater-Kent .25

**G-C RCA TELEVISION TUNING BELT**

New belt for RCA Television Tuner. Used on models series numbers 8 TC, 8 TK, 9 TC, etc. (Belt Part No. 73465).

No.	List
195	Tuner Belt \$0.25

**G-C PHONO TURNTABLE DRIVES**

No.	Type	List	No.	Type	List
14	Small drive belt for dual and 3-speed units. Admiral, Philco, G-I, V-M, etc.	\$0.15	17	Popular for Alliance, Motorola, V-M, Admiral, Philco, Zenith, Trav-ler, etc.	\$0.25
14-E	Envelope 3 No. 14 Drives	.40	17-E	Env. 3 No. 17 drives	.40
14-B-E	Large belt for Trav-ler Model A, etc.	.40	18	RCA, etc. drives	.15
14-F	RCA cam drive tire for RP-178, etc.	1.00	18-E	Env. 3 No. 18 drives	.40
14-H	Rim drive for RCA 45 RPM Models RP-168, etc.	.25	19	Philco, RCA, etc., drives	.15
14-H-E	Env. 2 No. 14-H drives	.40	19-E	Env. 4 No. 19 drives	.40
14-I	Small drive for RCA 45 RPM Models RP-168, etc.	.15	20-E	Detrola rubber drive	.40
14-I-E	Env. 3 No. 14-I drives	.40	20-I-E	Detrola spring drive	.50
14-J	Narrow idler drive tire for V-M 405, 800-D, etc.	.25	21-A	General Electric Model drive	.15
14-J-E	Env. 2 No. 14-J drives	.40	21-A-E	Env. 2 No. 21-A drives	.40
14-K	45 RPM Drive for Milwaukee Stamping Units	.15	22	Large V tire for RCA, RP-176, RP-177, 809-J, etc.	1.00
14-K-E	Env. 3 No. 14-K Drives	.40	23	Rim drive for RCA, RP-176, RP-177, 809-J, etc.	.20
16	For General Industries, RX-LX and Silvertone	.25	23-E	Env. 2 No. 23 drives	.40
16-E	Env. 2 No. 16 drives	.40	24-E	Admiral and Crescent 3 3/4" OD drives	.40
			24-A-E	Admiral and Crescent, etc., 3 3/4" OD drives	.40
			24-B-E	Admiral, Crescent, etc., 5 3/4" OD drive	.40

**G-C TELEVISION DELUXE STAND-OFF INSULATORS**



Will fit 300-ohm flat and RGU cables. Order part numbers below.



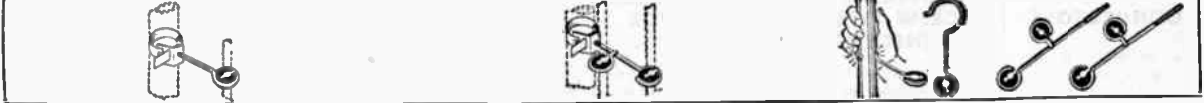
Specify "X" after part number to order this style.



Specify "V" after part number to order this style.



Specify "H" after part number to order this style.



G-C DELUXE MAST STAND-OFFS			G-C DELUXE DUPLEX MAST STAND-OFFS			G-C "SNAP-ON" TYPE MAST STAND-OFFS			G-C DUPLEX STAND-OFFS		
For Masts Up to 3 3/4" Dia.			For Masts Up to 3 3/4" Dia.			For Masts Up to 5" Dia.			Wood Screw Type		
No.	Length	List	No.	Length	List	No.	Length	List	No.	Length	List
8253	8 1/2"	\$0.19	8283	8 1/2"	\$0.25	8258	7 1/2"	\$0.30	8393	1"	\$0.10
8257	7 1/2"	.25	8287	7 1/2"	.30				8394	1 1/4"	.10
									Machine Screw Type		
									8225	7 1/2"	\$0.25
									€226 7 1/2" \$0.25		



G-C UNIVERSAL STAND-OFFS			G-C NAIL-IN STAND-OFFS			G-C UNIVERSAL STAND-OFFS			G-C CLAMP TYPE MAST STAND-OFFS			G-C DUPLEX CLAMP TYPE MAST STAND-OFFS			G-C TV STAND-OFF "EYE-OPENER" TOOL		
Wood Screw Type						Machine Screw Type			Fits Masts Up to 2"			Fits Masts Up to 2"			For opening and closing eyes on stand-offs.		
No.	Length	List	No.	Length	List	No.	Length	List	No.	Length	List	No.	Length	List	No.	Length	List
8027	8 1/2"	\$4.45	8343	8 1/2"	\$5.00	€031	8 1/2"	\$5.40	€033	8 1/2"	\$0.17	€227	7 1/2"	\$0.30	8450		\$1.65
8028	5 1/2"	6.90	8348	7"	15.00	€032	5 1/2"	7.50	€034	7 1/2"	.19						
8029	7 1/2"	7.65															
8030	12"	18.00															

**G-C UNIVERSAL SWING BRACKET**

"Made of Aircraft Alum.num"

A quality bracket for the best installation of Television Masts and Aerials. Easy to install — adjustable to any angle. Fits masts up to 1 1/2" diameter. Will not rust.

No. 8000 List \$7.50

**G-C CHIMNEY CORNER OR FLAT MOUNT BRACKETS**

"Made of Aircraft Alum.num"

Cast aluminum brackets for masts up to 1 1/2" diameter. One-piece brackets.

No.	List
8001 Pair of Brackets with straps and hdwre.	\$7.50
€002 Brackets only	5.00
8003 Straps and hardware	2.50

**G-C DELUXE VENT MOUNTS**

Made of 1/2" x 1 1/4" steel, heavily plated.

For	No. Vents	List
€334	4"	\$3.95
8336	6"	3.95

**G-C CHIMNEY QUICK MOUNT**

Made of 1/2" x 1 1/4" steel — heavily plated — supports masts up to 1 1/2" diameter. Straps and hardware included.

No.	List
8005 Chimney Quick Mount with hardware & straps	\$2.95

**G-C DELUXE CHIMNEY MOUNTS**

Made of 1/2" x 1 1/4" steel — all parts heavily plated. Supports masts up to 1 1/2" diameter.

No.	List
8344 Chimney Brackets, complete	\$4.25
8337 Brackets only	3.25

**G-C DELUXE CLOSE WALL MOUNTS**

Made of 1/2" x 1 1/4" steel — all parts heavily plated. Supports masts up to 1 1/2" diameter.

No.	Clearance	List
8302	2"	\$2.00
8306	6"	2.25

**G-C DELUXE WALL BRACKETS**

Made of 1/2" x 1 1/4" steel — heavily plated.

No.	Clearance	List
8308	8"	per set \$4.25
8312	12"	per set 4.95
8318	18"	per set 5.95
8324	24"	per set 6.95

**G-C DELUXE ADJUSTABLE UNIVERSAL WALL MOUNT**

Made of 1/2" x 1 1/4" steel — heavily plated. Adjustable from 1" to 19" clearance. Holds masts up to 1 1/2" diameter.

No.	List
8230	\$7.00

**G-C UNIVERSAL ANTENNA ROOF AND WALL MOUNT**

Made of heavy gauge plated steel. A universal mount that will fit any type of flat or angle roof. Can also be used for a wall mount.

No.	List
8008 Universal Mount	\$3.50

**G-C TV 300 OHM LINE WALL PLATE PLUG**

Lo-loss plastic plate complete with connecting plugs for TV antenna lead. Can be used in wall or floor.

No.	List
8595 Wall Plate and Plug	\$1.25

**G-C BLACK LITE TV FILTER SCREENS**

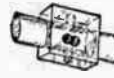
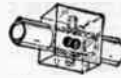
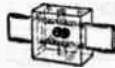
G-C Filter Screens reduce eye strain and bring out the best in Television.

STANDARD SIZE SCREEN				FULL SIZE SCREEN			
No.	Tube Size	Filter Size	List	No.	Tube Size	Filter Size	List
8204	7"	5" x 6 1/2"	\$0.95	8209	7"	7" x 7"	\$1.10
8205	10"	7" x 9"	1.25	8210	10"	10" x 10"	1.75
8206	12"	8 1/2" x 10 1/2"	1.75	8211	12"	12" x 12"	2.25
8207	15"	9 1/2" x 13"	3.00	8212	15"	15" x 15"	3.50
€208	20"	13 1/2" x 18"	4.75	8213	20"	20" x 20"	5.75

**G-C MAGNA SWITCH**

Automatically switches TV or FM antenna to set being used. Cuts down on signal loss due to interconnection. Each unit handles 5 sets. Needed by dealers and service men.

No.	List
8550 TV Magna Switch	\$19.95



**G-C DUPLEX LINE CONNECTORS**

For boosters, duplex antennas, etc. Molded bakelite material for brass contacts.

No.	List
8221 Duplex TV Plug	\$1.50
8221-D Display of 20	30.00
8221-C Box of 100	125.00

**G-C 300-OHM UNIVERSAL SCREW TYPE CONNECTOR**

Handy to splice 300-ohm twin line. Makes secure connection. Made of clear plastic material.

No.	List
C095-E Env. of 2	\$0.40
C095-D Display 20	8.00
C095-C Box of 100	17.50

**G-C 300-OHM LINE POLARIZED CONNECTOR**

Convenient method of connecting TV leads to boosters, antennas, matching stubs, etc. Just like plugging into wall socket. Molded bakelite

No.	List
S220 Plugs, per pair	\$1.40
C220-D Display 20	28.00
8220-C Box of 100 pair	120.00

**G-C HOLLOW TUBULAR 300-OHM LINE CONNECTOR**

A new plastic connector to connect the new 300-ohm tubular line. Two screws hold wires securely.

No.	List
C223-E Env. of 2	\$0.60
8223-D Display 20	12.00
C223-C Box of 100	27.50

**G-C 300-OHM OVAL JUMBO LINE CONNECTOR**

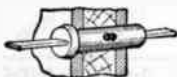
A new plastic connector to connect the new 300-ohm oval or jumbo line. Two screws hold wires in place.

No.	List
C224-E Env. of 2	\$0.50
C224-D Display 20	10.00
C224-C Box of 100	23.50

**G-C GUY WIRE CLAMP**

New type stamped steel zinc plated clamps for guy wires 1/4" to 3/4" diameter. Two screws hold clamp securely.

No.	List
E347 Cable Clamp	\$0.25
8347-E Env. of 2	.50
C347-D Display 20	10.00
8347-G Box of 144	35.00



**G-C PORCELAIN 300-OHM LEAD-IN TUBE**

Handy porcelain lead-in tube to bring in 300-ohm twin line into the house.

No.	List
8264 4" ea.	\$0.18
8264-C 4" per 100	17.50
8266 6" ea.	.23
8266-C 6" per 100	27.00
8268 8" ea.	.48
8268-C 8" per 100	47.50

**G-C PORCELAIN 300-OHM NAIL-IN STAND-OFFS & END ANCHOR**

Handy porcelain insulator to anchor the end of the line or to use all the way down as stand-off insulator.

No.	List
C260 Each	\$0.17
C260-C Box of 100	16.50

**G-C U-TYPE CLAMP**

Holds masts up to 1 1/4" diameter. Supplied complete with strap and nuts.

No.	List
8370 Each	\$0.40
C370-G Box of 144	54.50

**G-C MAST COUPLERS**

Handy mast coupler to extend and couple masts. Steel, zinc plated. Will couple masts 3/4" x 1 1/2" dia. Complete with screws.

No.	List
8371 Each	\$1.25

**G-C GUY WIRE CLAMP**

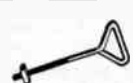
For fastening guy wires to masts. Heavy steel — zinc plated. Fits masts 3/4" to 1 1/2". Complete with screws.

No.	List
8372 Each	\$0.35
8372-G Box of 144	45.00

**G-C DUPLEX MAST CLAMPS**

For extending antennas and couple shafts. Made of steel, zinc plated. Can be used on masts 3/4" to 1 1/2".

No.	List
8373 Per Pair	\$2.50



**G-C 1/4-20 BOLTS**

Round Head — Steel — Cadmium Plated. "G" after No.: 144 "M" after No.: 1000

No.	Length	List
7144-G	1/2"	\$2.65
7144-M	1/2"	15.95
8061-G	3/4"	3.25
8061-M	3/4"	19.50
8062-G	1"	3.70
8062-M	1"	22.20
7145-G	1 1/4"	4.00
7145-M	1 1/4"	24.20
7146-G	2 1/2"	6.90
7146-M	2 1/2"	41.25

**G-C LEAD ANCHORS**

Lead anchors for wood screws. Fit 1/4" and 3/8" holes, and will take Nos. 10, 12, and 14 wood screws.

No.	1" Long	List
S084-E Env. 3		\$0.40
C084-D Display		8.00
C084-G Box of 144		12.50
1 1/2" Long		
S085-E Env. of 2		40
S085-D Display 20		8.00
S085-G Box of 144		17.50

**G-C WOOD SCREWS**

Steel — Cadmium Plated.

No.	Size & Qnty.	List
8071-G # 8x1 1/4"	144	\$3.05
8071-M 1000		19.30
8073-G # 10x1 1/4"	144	4.05
8073-M 1000		24.30
C075-G # 12x1 1/2"	144	4.80
8075-M 1000		23.20
8076-G # 14x1 3/4"	144	6.80
8076-M 1000		40.80

**G-C 1/4" LAG SCREWS**

Steel — Cadmium Plated.

No.	1 3/4" Length	List
S064-G Box of 144		\$13.50
S064-M Box of 1000		81.00
2" Length		
C065-G Box of 144		13.50
C065-M Box of 1000		81.00

**G-C SCREW EYES**

Steel, cadmium plated. Size #6 wire, over-all length 1 1/4", stem 1" long, eye 3/4" I.D.

No.	List
S078-E Env. of 8	\$0.40
S078-D Display 20	5.00
S078-G Box of 144	5.80
S078-M Box of 1000	34.75
Extra heavy screw eye — size 3/8" wire x 5" stem, 3/8" eye.	
S342-G Box of 144	12.85
S342-M Box of 1000	77.00

**G-C CHIMNEY & MAST HOOK**

Cadmium plated hook, same as used for chimney straps and masts. Hook is welded for extra strength. Supplied with nuts.

No.	List
C049 Each	\$0.12
S049-C Box of 144	17.25
S049-M Box of 1000	89.00



**G-C DRIVE-IN ANCHORS**

Easy to use for fastening brackets to masonry. Will fit 1/4" hole.

No.	List
S083-E Env. 2	\$0.40
S083-D Display	8.00
S083-G Box of 144	20.00

**G-C 1/4-20 HEX NUTS**

Steel — Cadmium Plated.

No.	List
7235-E Env. 25	\$0.40
7235-D Display	8.00
7235-G Box 144	2.20
7235-M Box of 1000	13.30

**G-C LAG SCREW EXPANSION SHIELD**

Fits 1/4" lag screw. Shield is 1" long by 1/2" O.D. 1/2" drill required.

No.	List
S088 Env. of 12	\$3.00
S088-G Box of 144	32.00

**G-C LADDER HOOKS**

Make your own hook ladder by fastening these hooks to your ladder. Sold in pairs complete with bolts for easy installation.

No.	List
S215 Hooks, per pair	\$5.00

**G-C 300 OHM CONNECTOR**

New inexpensive type low-loss plastic connector.

No.	List
S596 Env. Plugs, per pr.	\$0.50
S596-D Display 20	10.00

**G-C GUY WIRE CLAMPS**

The quickest way to fasten ends of guy wire. Easily adjusted with screw driver. Galvanized steel.

No.	List
S081 1/2" Wire	\$0.55
S082 3/4" Wire	.55



**G-C THIRD EYE DELUXE TELEVISION MIRROR**

A Deluxe mirror, complete with telescoping stand. Absolutely no distortion.

**Specifications:**  
Glass 12" x 10" in metal frame.  
Stand telescoping and adjustable.

No. List  
8390 Third Eye Mirror with stand \$6.75

8391 Mirror only 2.50

8199 Soft Bag for carrying mirror 1.00



**G-C TELEVISION SERVICE MIRROR**

New — all-metal mirror for adjusting rear controls of TV sets. Complete with spring clamp that can be used on a chair or anywhere. Made of heavy metal to prevent distortion.



No. 8198 Tele-Mirror List \$2.75

**G-C SERVICE BENCH MIRROR**

Metal, chrome mirror, large 10" x 16" size. A handy mirror to fasten on the back wall of the bench for adjusting and working on TV sets.



No. 8197 Mirror List \$2.50

**RO-TO DI-POLE INDOOR TV ANTENNA**

A beautiful high-quality antenna. Made of 3 sections, Admiralty Brass Tubing, triple chrome plated. Walnut color plastic base. Sections — closed 16" — open 44".



Complete with 300-ohm twin line, ready to install. List \$9.95



**G-C CHIMNEY CORNER PROTECTORS**

Galvanized corner protectors to go under chimney strapping. Supports strapping and makes it easier to tighten the brackets.

No. List  
8231-G Box of 144 \$5.95

**G-C CHIMNEY CORNER SUPPORTS**

The answer to fastening antennas to weak chimneys. Fasten these angle supports on each corner of the chimney and attach the chimney strapping and brackets. Reinforcing angles are 18" long and are heavily plated.

No. List  
8340 Set of 4 Chimney Supports \$3.95

**G-C BRIDLE RINGS**

Handy bridle rings for tying guy wires, masts, etc. Made of hot-galvanized steel.

No. List  
8153-E Env. of 4 \$0.40  
8153-D Display 20 Env. 8.00  
8153-G Box of 144 13.00  
8153-M Box of 1000 78.00

**G-C CABLE CLAMPS**

Popular guy wire clamps will hold guy wire securely. Easy to install and easy to use. Made of galvanized steel.

No. List  
8131-E Env. of 2 \$0.50  
8131-D Display 20 Env. 10.00  
8131-G Box of 144 32.00  
8131-M Box of 1000 169.50

**G-C GUY WIRE THIMBLES**

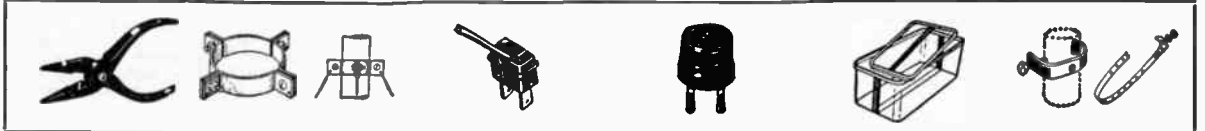
Made to quickly fasten and hold securely guy wires and cables. Prevents wire from breaking and loosening. Galvanized steel.

No. List  
8132-E Env. of 2 \$0.40  
8132-D Display 20 Env. 8.00  
8132-G Box of 144 13.65  
8132-M Box of 1000 81.95

**G-C 300-OHM FIBRE HEAD WIRING NAILS**

Specially made for nailing down 300-ohm twin line. Makes installation easy and does not affect characteristic of the wire.

No. List  
8020-E Env. 20 \$0.40  
8020-D Display 20 Env. 8.00  
8020-G Box of 144 1.25  
8020-M Box of 1000 8.50



**G-C TV PLASTIC PLIERS**

An insulated long nose plier that is absolutely shock proof. It is non-magnetic. Will stand up to 6000 volts. Handy for working on set while it is "hot."

No. List  
8387 Plastic Pliers \$1.50  
8387-D Display 12 18.00

**G-C UNIVERSAL GUY WIRE MAST CLAMPS**

Will fit masts 3/4" to 3" split type. Clamps can be put on by slipping over end of mast or be put on the mast after it is up. Fits any size mast by using more or less of the clamping sections, to fit the desired size.

No. List  
8374 Clamp \$1.50

**G-C ANGLE PLUG**

New, quick assembling, angle plug. No screws, no soldering. Simply strip wires and assemble.

No. List  
8360-E Brown, each \$0.16  
8360-D Display 40 6.40  
8361-E Ivory, each .16  
8361-D Display 40 6.40

**G-C FOREIGN ADAPTERS**

For connecting American type male plug to Continental style and British style plug.

No. List  
8378 Adapter for Continental Plug \$0.25  
8379 Adapter for British Plug .25

**G-C PLASTIC STOCK BOXES & TRAYS**

Clear polystyrene boxes for stocking small parts, screws, nuts, etc. Supplied with covers.

No. List  
8022 4x4x2 1/2" \$0.55  
8023 4x8x2 1/2" 1.10  
Round, 4 oz. Paint Jar with Screw Cap. 4000 4-oz. \$0.30

**G-C GROUND CLAMPS**

C Type Clamp for masts up to 1 1/2" dia.

No. List  
8120 Each \$0.25  
8120-C Box of 100 20.00  
Popular Strap type to fit 3/4" to 2".  
8121 Each \$0.10  
8121-C Box of 100 9.00



**G-C CARBIDE TIP MASONRY DRILLS**

Drill is carbide tipped and has a spiral fluted body. It makes holes easily and accurately in hardest masonry.

No. Size List  
8096 1/4" \$3.75  
8097 3/8" 4.00  
8098 1/2" 4.75  
8099 3/4" 6.00

**G-C MINI-MAX STRIP**

Used for connecting 67 1/2-volt "B" batteries, such as Eveready 455, 466, Burgess XX80, XX-45.

No. List  
8115 Connectors \$0.30

**G-C MODERN TEST LEAD ANGLE TIP**

New, attractive, full insulated, molded plastic angle phone tip plugs. Takes wires up to .140 diameter.

No. List  
8149 Red, each \$0.50  
8149-C Red, per 100 45.00  
8150 Black, each .50  
8150-C Black, per 100 45.00  
8149-D Display: 10 red, 10 black 10.00

**G-C BASE BOARD CLIPS**

Handy clips to run wires around base and avoid nailing.

No. List  
8345-E Env. of 25 \$0.40  
8345-D Display 20 Env. 8.00  
8345-G Box of 144 2.10  
8345-M Box of 1000 12.50

**G-C INTERLOCK CABLE CORD**

"Television Safety Cord"

Replacement cord for RCA, Philco, G-E, Admiral, and others. It has regular molded plug on one end, and special rubber plug on other. 6 ft. long. — Underwriters approved.

No. List  
8200 Reg. TV Cord \$0.75  
8201 Spec. Zenith Cord .75

**G-C AUTO RADIO TUNER**

A tuner tool to adjust sets when radio is removed from set and the cables are removed. One end has a square tip and the other end has a V shape to fit various type shafts. Plastic handle in middle.

No. List  
8285 Auto Tuner \$0.40  
8285-D Display of 20 8.00



**G-C SKI-HI TELEVISION TOWERS**

G-C Ski-Hi Towers are made of 5/8" steel tubing and 1/4" solid steel rods. All electrically welded — triangular steel construction. Light weight. Finished with two coats of best grade outdoor aluminum enamel. Stronger, superior to other type constructions.

No.	List
8350 28 Feet High—2 Tower Sections and a 10-Foot Mast	\$69.50
8351 38 Feet High—3 Tower Sections and a 10-Foot Mast	89.50
8352 30 Feet High—3 Ten-Foot Tower Sections	79.50
8353 10-Foot Extensions — Fit between Lower and the 2nd Sections of the Regular G-C No. 8852 Tower	29.50

**JOBBERS' SAMPLE TOWER**

No.	List
8354 9-ft. Tower made exactly like No. 8352. Holds masts up to 2". Assembles in 3-ft. sections. Ideal for salesmen's samples	\$33.50



**G-C SPEEDEX SOLDERLESS CONNECTOR KIT**

For television antenna, radio, and electrical work. Complete kit of terminals and a handy tool to install terminals on wire. Kit complete with assortment of terminals.

No.	List
8175 Kit	\$9.95
8176 Tool only	6.60



**G-C SPEEDEX SOLDERLESS TERMINALS**

No.	Fig.	Style No. and Description	Quan.	List
8177		Assortment of 50 Terminals	50	\$1.67
8178	"A"	Small Ring Type No. 6 Screw	50	1.67
8179	"A"	Large Ring Type No. 6 Screw	50	1.67
8180	"A"	Large Ring Type No. 8 Screw	50	1.67
8181	"A"	Large Ring Type No. 10 Screw	50	1.67
8188	"A"	Large Ring Type for 16-14 Wire, No. 10 Screw	50	1.67
8182	"B"	Slotted Tongue Type No. 6 Screw	50	1.67
8294	"B"	Slotted Tongue Type No. 8 Screw	50	1.67
8295	"B"	Slotted Tongue Type No. 10 Screw	50	1.67
8135	"C"	Knife Disconnect	36	1.67
8186	"D"	Butt Connector	45	1.67
8187	"E"	Parallel Connector 22-16 Wire	60	1.67
8189	"E"	Parallel Connector 16-14 Wire	65	1.67
8190	"F"	Disconnect Plastic Tubing	50	1.67
8191	"G"	Connector Plastic Tubing	50	1.67
8192	"H"	Terminal Plastic Tubing	50	1.67
8193	"I"	Hook Type Connector No. 6 Screw	50	1.67



**G-C CHIMNEY STRAP**

Galvanized annealed steel strap with 1/4" punched holes. Very flexible to handle.

No.	Coil	List
8051	12 ft.	\$0.75
8052	100 ft.	5.00



**G-C RCA RECORD ADAPTERS**

Handy fibre adapters will adapt large hole RCA records to the standard shafts of regular turntables.

No.	List
8380-E Env. of 5	\$0.40
8380-D Display 20 Env.	8.00



**G-C 300-OHM 4-IN-1 TOOL AND KIT**

Will work on all types of 300-ohm line. Strips, slits, cuts, and crimps. All in one tool. Supplied individually or with a kit of solderless terminals.

No.	List
8385 TV 4-in-1 Tool	\$5.00
8386 Kit of Tool and Solderless Connectors	7.50



**G-C 300-OHM LINE PROTECTIVE TUBING**

"Improves TV Reception"

A clear plastic tubing to fit over 300-ohm flat line and will protect the line from grounding and rubbing on corners, eaves, etc. It actually protects and water-proofs the line. On coastal cities this has been satisfactorily used to prevent black-out from fog and salt spray.

No.	List
625 Box of 8 ft.	\$0.95
626 Coil of 250 ft.	23.60
627 1000 ft.	79.00

**Round TV Line Tubing**

For Co-ax and hollow line tubing, etc. Green opaque to withstand sun and weather.

No.	List
629 100 ft. coil	\$6.10
630 1000 ft. coil	55.00



**G-C TELEVISION GUY WIRE**

A high grade galvanized steel twisted guy wire.

4-Strand #20 Wire No. (App. 3/8" Dia.) 8107-C 100-ft.	List \$1.30
8107-M 1000-ft. Spool	12.25
6-Strand #20 Wire (Approx. 1/2" Dia.) 8109-C 100-ft. Coil	\$1.75
8109-M 1000-ft. Spool	17.20
Heavy Duty 6-Strand #18 Wire (Approx. 3/8" Dia.) 8375-C 100-ft. Coil	\$3.00
8375-M 1000-ft. Spool	25.00



**G-C MAST GUY WIRE**

"Copperweld Wire Will Not Rust" Made of a solid #18 high strength copper wire. It has 80% copper conductivity which makes it rust-proof and easy to work.

No.	Spool	List
8203	3000 ft.	\$17.00

**THREE-STRAND COPPERWELD**

Three #18 Strands Twisted.

No.	Spool	List
8110	750 ft.	\$11.85



**G-C FLOATING GUY RINGS**

Made of galvanized steel — for 3/4" and 1" O.D. Masts.

No.	List
8055-E Env. of 3	\$0.40
8055-D Display 20 Env.	8.00
8055-G Box of 144	15.00

No.	Mast Size	List
8313	1 1/2" O.D.	.20
8314	1 1/4" O.D.	.20
8315	1 3/8" O.D.	.20
8316	1 1/2" O.D.	.20
8317	2" O.D.	.20



**G-C TURNBUCKLES**

Extra strong — cadmium plated. Size: 3/8" Closed 4/8" Open

No.	List
8056-E Env. of 2	\$0.50
8056-D Display 20 Env.	10.00
8056-G Box of 144	30.00
Size: 4" Closed 5 1/2" Open	
8057-E Env. of 2	.50
8057-D Display 20 Env.	10.00
8057-G Box of 144	32.00
Size: 4 1/2" Closed 6 3/8" Open	
8058 Each	\$0.30
8058-G Box of 144	36.00
Clsd. Opn. ea.	
8065 5 1/2" 7 1/2"	.40
8366 6 3/8" 9 1/2"	.60
8367 7 1/2" 10 1/2"	.80



**G-C MAST STRAPS**

Made of galvanized steel. Used for fastening masts, poles to wells, roofs, etc.

No.	List
8130 Each	\$0.06
8130-G Box of 144	8.00
8130-M Box of 1000	41.65



**G-C U BOLTS**

To fit masts 3/4" to 1 1/2" diameter. Inside max. size 1 1/2" wide x 8" long. Ideal for strapping 2 masts together or for fastening masts to buildings, plate a, etc. Steel, zinc plated.

No.	List
8123 U Bolt	\$0.30
8123-G Box of 144	36.00

Write for Complete  
**G-C CATALOG** on  
**RADIO and TELEVISION PRODUCTS**

## G-C ROUND HEAD MACHINE SCREWS

Steel — Nickel Plated

No.	ENVELOPE	List
296-E	40 Asst. Machine Screws	\$0.40
6038-E	50 Asst. Screws and Nuts	.40
7129-E	50 Asst. 2-56 Screws and Nuts	.40
6001-E	45 Asst. 4-36 Screws	.40
6002-E	45 Asst. 6-32 Screws	.40
6003-E	40 Asst. 8-32 Screws	.40
6004-E	30 Asst. 10-32 Screws	.40
6005-E	60 4-36 x 1/4" Screws	.40
6006-E	50 4-36 x 1/2" Screws	.40
6008-E	40 6-32 x 1/4" Screws	.40
6009-E	35 6-32 x 1/2" Screws	.40
<b>GLASS JAR</b>		
6610	75 Asst. 4-36 and 6-32 Screws	.65
6611	60 Asst. 8-32 and 10-32 Screws	.65
6005	100 4-36 x 1/4" Screws	.65
6008	90 6-32 x 1/4" Screws	.65
6009	85 6-32 x 1/2" Screws	.65

## G-C BRASS ROUND HEAD MACHINE SCREWS

Brass — Nickel Plated

No.	ENVELOPE	List
8500-E	Env. 30 Asst. Screws	\$0.40

## G-C PHILLIPS TYPE ROUND HEAD MACHINE SCREWS

Steel — Nickel Plated

No.	ENVELOPE	List
8510-E	Env. 30 Asst. Screws	\$0.40

## G-C BINDING HEAD MACHINE SCREWS

Steel — Nickel Plated

No.	ENVELOPE	List
7150-E	Env. 50 Asst. Screws	\$0.40

## G-C OVAL HEAD RACK & CABINET SCREWS

No.	ENVELOPE	List
6039-E	80 Asst. Rack Screws & Washers	\$0.40
6543-E	20 10-32 x 3/8" Rack Screws	.40
<b>GLASS JAR</b>		
6628	45 Asst. Screws & Washers	.65

## G-C ORNAMENTAL HEAD SCREWS

Steel — Statuary Bronze — for speakers, baffles, etc.

No.	ENVELOPE	List
1094-E	15 Asst. Screws	\$0.40
<b>GLASS JAR</b>		
6631	50 Asst. Screws	.65

## G-C WOOD SCREWS

Round Head — Steel — Nickel Plated

No.	ENVELOPE	List
6110-E	30 Asst. Sizes	\$0.40
<b>GLASS JAR</b>		
6633	45 Asst. Sizes	.65

## G-C SHEET METAL SCREWS

Hex Head — Slotted — Nickel Plated — Self Tapping Type — With Point "A" Tip

No.	ENVELOPE	List
297-E	25 Asst. Sheet Metal Screws	\$0.40
6092-E	25 No. 6 x 3/8" Sheet Metal Screws	.40
6093-E	25 No. 6 x 1/2" Sheet Metal Screws	.40
6095-E	20 No. 8 x 3/8" Sheet Metal Screws	.40
6096-E	20 No. 8 x 1/2" Sheet Metal Screws	.40
<b>GLASS JAR</b>		
6608	50 Asst. No. 4 & No. 6 Screws	.65
6609	45 Asst. No. 8 & No. 10 Screws	.65

## AUTO SHEET METAL SCREWS

No.	ENVELOPE	List
8102	20 No. 8 x 1/4" Screws	.40

## G-C ESCUTCHEON SCREWS

Round head, slotted type statuary bronze plated. For mount dial and indicator plates, etc.

No.	ENVELOPE	List
1090-E	80 Asst. Escutcheon Screws	\$0.40
<b>GLASS JAR</b>		
6632	50 Asst. Escutcheon Screws	.65

## G-C SPADE BOLTS

Steel — Nickel Plated

No.	ENVELOPE	List
6080-E	20 Asst. Spade Bolts	\$0.40

## G-C KNOB SET SCREWS

Slotted Head Type — Cup Point — Hardened Steel

No.	ENVELOPE	List
1062-E	15 Asst. Set Screws	\$0.40
6061-E	15 Asst. 6-32 Screws	.40
6062-E	15 Asst. 8-32 Screws	.40
6063-E	15 Asst. 10-32 Screws	.40
<b>GLASS JAR</b>		
6605	30 Asst. Set Screws	.65

## G-C ALLEN HEX SET SCREWS

Steel — Hardened — Headless

No.	ENVELOPE	List
7190-E	5 Asst. 4-36 Screws	\$0.40
7195-E	5 Asst. 6-32 Screws	.40
7200-E	5 Asst. 8-32 Screws	.40

## G-C THREADED STEEL ROD

Steel running thread in 6-32 and 8-32 sizes.

No.	ENVELOPE	List
6665-E	Asst. 6-32 and 8-32 Rods	\$0.40

## G-C HEXAGON NUTS

Steel — Nickel Plated

No.	ENVELOPE	List
293-E	35 Asst. Hex Nuts	\$0.40
6041-E	40 4-36 Hex Nuts	.40
6042-E	35 6-32 Hex Nuts	.40
6043-E	30 8-32 Hex Nuts	.40
6044-E	25 10-32 Hex Nuts	.40
<b>GLASS JAR</b>		

6606	60 Asst. 4-36 & 6-32 Hex Nuts	.65
6607	60 Asst. 8-32 & 10-32 Hex Nuts	.65
6045	80 4-36 Hex Nuts	.65
6046	75 6-32 Hex Nuts	.65
6047	60 8-32 Hex Nuts	.65

## G-C BRASS HEX NUTS

Nickel Plated

No.	ENVELOPE	List
7245-E	10 6-32 Hex Nuts	\$0.40
7248-E	25 8-32 Hex Nuts	.40

## G-C MOUNTING NUTS

Steel — Nickel Plated

No.	ENVELOPE	List
For toggle switches, rotary switches, volume controls, etc.		
6050-E	12 Asst. Nuts	\$0.40
<b>GLASS JAR</b>		
6615	25 Asst. Nuts	.65

## G-C TIMMERMAN SPEED NUTS

No.	ENVELOPE	List
6055-E	30 Asst. Speed Nuts	\$0.40
<b>GLASS JAR</b>		
6630	60 Asst. Speed Nuts	\$0.65

## G-C ACORN NUTS

Solid Brass — Nickel Plated

No.	ENVELOPE	List
6030-E	12 Asst. Acorn Nuts	\$0.40
<b>GLASS JAR</b>		
6627	18 Asst. Acorn Nuts	.65

## G-C THUMB NUTS

Brass — Nickel Plated

No.	ENVELOPE	List
6654-E	10 Asst. Thumb Nuts	\$0.40

## G-C WING NUTS

Nickel Plated

No.	ENVELOPE	List
6658-AE	10 Asst. Wing Nuts	\$0.40

## G-C METAL WASHERS

Steel — Nickel Plated

No.	ENVELOPE	List
6150-E	80 Asst. Metal Washers	\$0.40
<b>GLASS JAR</b>		
6612	135 Asst. No. 4 & No. 6 Washers	\$0.65
6614	100 Asst. No. 8 & No. 10 Washers	.65

## G-C LOCK WASHERS

Internal, external, and split types lock washers. For all purposes.

No.	ENVELOPE	List
1717-E	65 Asst. All Types	\$0.40
7320-E	60 Asst. Internal Type	.40
7350-E	60 Asst. External Type	.40
6502-E	60 Asst. Split Type	.40
<b>GLASS JAR</b>		

6614	90 Asst. All Types	.65
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## G-C SPRING TYPE FRICTION WASHERS

No. ENVELOPE List

6190-E	25 Asst. Sizes	\$0.40
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## G-C CUP FINISHING WASHERS

Nickel Plated

No.	ENVELOPE	List
6159-E	40 Asst. Cup Washers	\$0.40
6039-E	30 Asst. Rack Screws & Washers	.40
<b>GLASS JAR</b>		
6628	45 Asst. Rack Screws & Washers	.65

## G-C "C" WASHERS

No.	ENVELOPE	List
6180-E	50 Asst. C-Washers	\$0.40
<b>GLASS JAR</b>		
6636	85 Asst. C-Washers	.65

## G-C COTTER PINS

No.	ENVELOPE	List
6440-E	60 Asst. Cotter Pins	\$0.40
<b>GLASS JAR</b>		
6642	90 Asst. Cotter Pins	\$0.65

## G-C HAIR PIN COTTER SPRINGS

No.	ENVELOPE	List
6475-E	50 Asst. Cotter Springs	\$0.40
<b>GLASS JAR</b>		
6637	75 Asst. Cotter Springs	.65

## G-C FIBRE WASHERS

Best grade hard fibre — flat and extruded types.

No.	ENVELOPE	List
1716-E	8 Asst. Hole Plugs	\$0.40
6512-E	80 Asst. Flat & Extruded Washers	.40
6520-E	40 Asst. Extruded Washers	.40
<b>GLASS JAR</b>		
6634	85 Asst. Flat Fibre Washers	.65

## G-C SNAP BUTTON HOLE PLUGS

No.	ENVELOPE	List
1716-E	8 Asst. Hole Plugs	\$0.40

## G-C SNAP-IN TRIMOUNTS

No.	ENVELOPE	List
1719-E	25 Asst. Trimounts	\$0.40
1727-E	18 Large Size Trimounts	.40
<b>GLASS JAR</b>		
6620	45 Asst. Trimounts	.65

**G-C DIAL CORD CLIPS**

No.	ENVELOPE	List
6220-E	85 Asst. Cord Clips	\$0.40
6621	75 Asst. Cord Clips	\$0.65

**G-C SOLDERING LUGS**

No.	ENVELOPE	List
1019-E	30 Asst. Soldering Lugs	\$0.40
6618	75 Asst. Soldering Lugs	.65

**G-C CABLE HOLDER CLAMPS**

No.	ENVELOPE	List
6250-E	20 Asst. Cable Clamps	\$0.40
6644	40 Asst. Cable Clamps	.65

**G-C GRID CAPS**

No.	ENVELOPE	List
6290-E	12 Asst. Grid Caps	\$0.40
6635	25 Asst. Grid Caps	.65

**G-C FUSE CLIPS**

No.	ENVELOPE	List
6311-E	10 Fuse Clips	\$0.40

**G-C FAHNESTOCK CLIPS**

No.	ENVELOPE	List
6300-E	12 Asst. Fahnestock Clips	\$0.40
6639	30 Asst. Fahnestock Clips	.65

**G-C ANGLES & BRACKETS**

No.	ENVELOPE	List
6260-E	15 Asst. Angles & Brackets	\$0.40

**G-C DIAL PULLEYS**

No.	ENVELOPE	List
6057-E	6 Asst. Dial Pulleys	\$0.40
6638	12 Asst. Dial Pulleys	\$0.65

**G-C KNOB SPRINGS**

No.	ENVELOPE	List
1049-E	16 Asst. Knob Springs	\$0.40
6619	85 Asst. Knob Springs	.65

**G-C RADIO KNOB FELTS**

No.	ENVELOPE	List
1065-E	50 Knob Felts	\$0.40
6641	70 Knob Felts	.65

**G-C DIAL DRIVE AND TENSION SPRINGS**

No.	ENVELOPE	List
1054-E	10 Asst. Dial Drive Springs	\$0.40
1054-SE	10 Asst. Small Dial Drive Springs	.40
6420-E	10 Asst. Small Tension Springs	.40
6421-E	8 Asst. Large Tension Springs	.40
6480-E	10 Asst. Small Phono Springs	.40
6481-E	8 Asst. Large Phono Springs	.40

**G-C COMPRESSION SPRINGS**

No.	ENVELOPE	List
6430-E	20 Asst. Small Springs	\$0.40
6431-E	15 Asst. Large Springs	.40

**G-C RIVETS AND EYELETS**

No.	ENVELOPE	List
1027-E	55 Asst. Rivets & Eyelets	\$0.40
1028-E	60 Asst. Eyelets & Dial Cable Clamps	.40
6900-E	55 Asst. Eyelets	.40
6850-E	60 Asst. Rivets	.40

**G-C CORD STRAIN RELIEFS**

No.	ENVELOPE	List
6675-E	4-Cord Strain Reliefs	\$0.40

**G-C ESCUTCHEON PINS**

No.	ENVELOPE	List
6570-E	100 Asst. Escutcheon Pins	\$0.40

**G-C VOICE COIL DUST FELTS**

No.	ENVELOPE	List
1079-E	25 Asst. Felts	\$0.40
6640	50 Asst. Felts	.65

**G-C RUBBER GROMMETS**

No.	ENVELOPE	List
1039-E	15 Asst. Rubber Grommets	\$0.40
1041-E	12 $\frac{1}{8}$ " ID x $\frac{1}{8}$ " OD Grommets	.40
1042-E	10 $\frac{1}{4}$ " ID x $\frac{1}{4}$ " OD Grommets	.40
1043-E	10 $\frac{3}{8}$ " ID x $\frac{3}{8}$ " OD Grommets	.40

**G-C PURE GUM RUBBER GROMMETS**

No.	ENVELOPE	List
7580-E	12 Asst. Pure Gum Grommets	\$0.40

**G-C RUBBER FEET**

No.	ENVELOPE	List
1075-AE	8 Asst. Feet	\$0.40

**G-C CHASSIS FELT FEET**

No.	ENVELOPE	List
1086-E	4 Asst. Felt Feet	\$0.40

**G-C RUBBER CHASSIS MOUNTS**

No.	ENVELOPE	List
1038-E	10 Asst. Chassis Mounts	\$0.40

**G-C TACK BUMPERS**

No.	ENVELOPE	List
1075-E	10 Tack Bumpers	\$0.40
6624	18 Tack Bumpers	.65

**G-C FELT PADS**

No.	ENVELOPE	List
1069-E	40 Asst. Felt Pads	\$0.40
6623	60 Asst. Felt Pads	.65

**G-C PHONO STYLUS SCREWS**

No.	ENVELOPE	List
1052-E	7 Asst. Stylus Screws	\$0.40

**G-C BUSHINGS AND SPACERS**

No.	ENVELOPE	List
6760-E	12 Asst. Insulated Spacers	\$0.40
6761-E	12 Asst. Metal Spacers	.40

**G-C REDUCING BUSHINGS**

No.	ENVELOPE	List
6751-E	8 Bushings	\$0.40

**G-C TERMINAL STRIP ASSORTMENT**

No.	ENVELOPE	List
6855-E	4 Asst. Terminal Strips	\$0.40

**G-C PICK-UP AND CARTRIDGE SCREW ASSMT.**

No.	ENVELOPE	List
6000-E	60 Asst. Screws, Small Size	\$0.40

**NEW! G-C TELEVISION 300-OHM WIRE STRIPPER**

No.	ENVELOPE	List
8400	TV Stripper	\$1.50

**SPECIAL NOTICE TO QUANTITY USERS**

All G-C hardware as supplied in the assortments on these pages is available in specific sizes and types in packages of a gross and a thousand at attractive prices. Also, on large quantities for industrial users, etc., quantity prices will be quoted. See your Distributor or write the factory for specific information.

# RADIO'S MASTER

Fifteenth Edition

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