

**S. S.**  
**KRESGE**

**1931-1932**

**Radio & Television  
Catalog and  
Service Men's  
Guide**

A Complete Catalog of  
Radio and Television  
Parts and Accessories  
for  
**ENGINEERS  
SERVICE MEN  
EXPERIMENTERS**  
and  
**RADIO SET OWNERS**  
offering exceptional values  
made possible only by the  
Efficient, Large Scale  
Buying and Merchandising  
Operations of the  
**S. S. KRESGE CO.**



Illus. A



Illus. B



Illus. F

STANDARD QUALITY "A," "B" AND "C" BATTERIES

"Royal" and "Banner" Batteries are made for the S. S. Kresge Co. by two of the leading battery manufacturers in the United States.

They are made to meet the most rigid specifications and only the large quantities sold by the S. S. Kresge Stores make possible their sale at these low prices. These batteries sell so fast that fresh stocks are always on hand.

For best results and economy in operation it is important to select batteries of the proper size for the use to which they are to be put.

The Royal, Green Seal and Banner No. 6 Dry Cells are especially designed for ignition, bell ringing and "A" battery use with sets employing dry cell tubes. For best results they should be connected in series—parallel arrangements to provide the required voltage and current capacity.

Wherever space permits, the heavy duty type "B" Batteries such as the Royal Type 534 or Banner Type H-1030 are recommended.

Where space is limited, the Royal Type 533 or Banner Type H-230 batteries should be used.

The Royal Type 536 and Banner Type H-530 batteries are designed for automobile and other portable use where space is limited or the allowable weight must be kept down to reasonable limits.

The Royal Type 531 and Banner Type B-215 batteries are designed for use where a medium duty 22½-volt low height battery is required.

The Royal Type 535 and Banner Type B-515 batteries are designed for use as high voltage "C" batteries and for testing or light duty "B" battery use.

The Royal Type 530 and Banner Type B-23 batteries are designed for low voltage "C" battery use but may be used to advantage as "A" batteries for dry battery tubes for testing purposes, for ohmmeters and other similar applications where the current requirements are low.



Illus. C



Illus. G



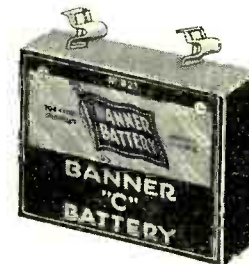
Illus. D



Illus. H



Illus. E



Illus. I



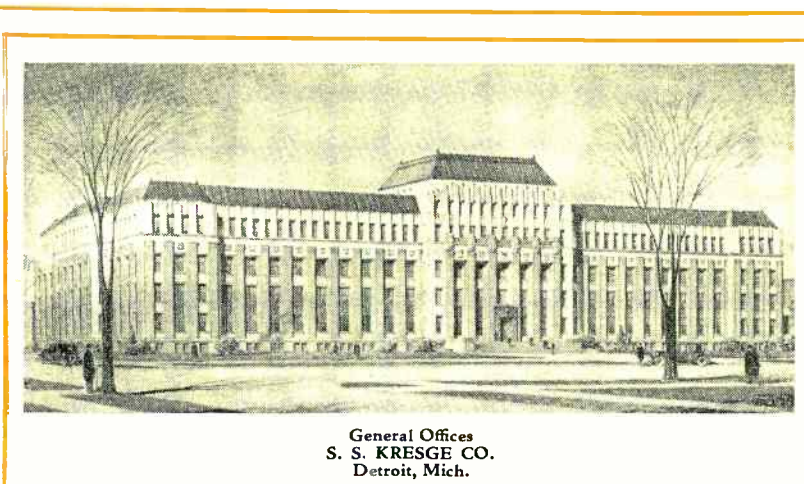
Illus. J

BATTERY SPECIFICATIONS AND PRICES									
Type No.	Ill. No.	For Use As	Max. Volt.	Voltage Taps	Dimensions			Weight Lbs. Oz.	Price Each
					L	W	H		
Green Seal #6 Sq.	D	"A" Bat.	1½	-A, +1½	2"	2"	6"	2	\$ .29
Royal #6 Rd.	C	"A" Bat.	1½	-A, +1½	2"	6"	2"	2	\$ .25
Banner #6 Rd.	E	"A" Bat.	1½	-A, +1½	2"	6 1/8"	2"	2 8	\$ .25
Royal 535	H	"B" or "C"	22½	(-B, +6, +18, +19½, +22½) or (+C, -3, -4½, -16½, -22½)	4 1/8"	2 3/8"	2 3/4"	1 9	\$ .65
Banner B-515	H*	"B" or "C"	22½	(-B, +6, +18, +19½, +22½) or (+C, -3, -4½, -16½, -22½)	4 1/8"	2 3/8"	2 3/4"	1 8	\$ .65
Royal 531	F*	"B" or "C"	22½	(-B, +6, +18, +22½) or (+C, -4½, -16½, -22½)	6 3/4"	4"	3 1/8"	5	\$ .89
Banner B-215	F	"B" or "C"	22½	(-B, +18, +22½) or (+C, -4½, -22½)	6 1/2"	3 1/8"	3"	4 11	\$ .89
Royal 536	G	"B" Bat.	45	-B, +22½, +45	4 1/8"	2 3/8"	5 3/8"	3	\$1.25
Banner H-530	G*	"B" Bat.	45	-B, +22½, +45	4 1/4"	2 1/2"	4 7/8"	3	\$1.25
Royal 533	A*	"B" Bat.	45	-B, +22½, +45	8 1/4"	3 3/8"	7 3/8"	9	\$1.35
Banner H-230	A	"B" Bat.	45	-B, +22½, +45	8"	3 1/8"	7"	9	\$1.35
Royal 534	B	"B" Bat.	45	-B, +22½, +45	8 1/8"	4 3/4"	7 3/8"	13 12	\$1.85
Banner H-1030	B*	"B" Bat.	45	-B, +22½, +45	8"	4 3/8"	7"	12 12	\$1.85
Royal 530	J	"C" Bat.	4½	+C, -4½	4"	1 3/8"	3 1/8"	14	\$ .25
Banner B-23	I	"C" Bat.	4½	+C, -4½	3 7/8"	1 3/8"	2 1/8"	14	\$ .25

Note: (\*) Asterisk indicates battery not illustrated but similar to one shown in illustration designated.

KRESGE'S TREMENDOUS BUYING POWER AND EFFICIENT MERCHANDISING METHODS MAKE POSSIBLE THE EXCEPTIONAL VALUES OFFERED IN THIS CATALOG

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General Offices  
 S. S. KRESGE CO.  
 Detroit, Mich.

**WHY KRESGE'S OFFERS YOU  
 MORE VALUE FOR YOUR MONEY !**

**K**RESGE store managers and sales people are often asked how it is possible for Kresge's to offer such outstanding values at such low prices. The sound, economic reason why Kresge Stores can offer such remarkable values is that the tremendous buying power and efficient merchandising methods of this large syndicate, which owns and operates hundreds of large stores throughout the country, enables it to cut the red tape and eliminate the costly buying and wasteful distribution system for which the buyer ultimately pays when he deals with inefficiently managed concerns. Kresge savings, effected by efficient buying, low storage and turnover costs, unquestioned credit, low sales expense and the elimination of middlemen's profits are passed on to the

consumer in the form of lower prices for standard merchandise. All Kresge merchandise is new, up-to-date, tested material, fresh from the manufacturers' factories. In buying merchandise offered in Kresge Stores, you are assured of dependable apparatus, backed by the guarantee and resources of one of America's foremost merchandising organizations. The prices quoted in this catalog are the prices in effect as this catalog goes to press and are subject to change without notice, up or down, with market conditions. Whenever possible, savings effected in buying are passed on to Kresge customers in the form of lower prices, regardless of the prices quoted in our catalogs.

**At Kresge Stores You Can See and Inspect Before You Buy**

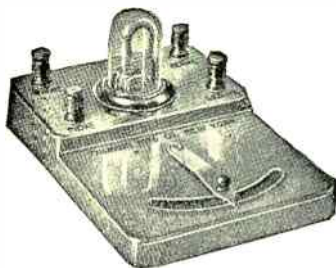
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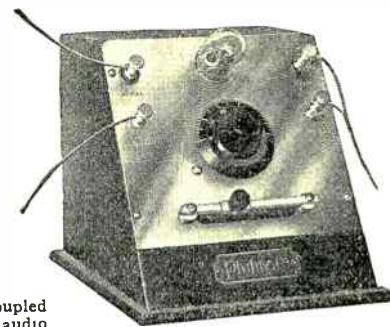
**ALL PARTS AND ACCESSORES LISTED IN THIS CATALOG ARE FOR SALE  
 AT ALL S. S. KRESGE CO. 25c to \$1.00 STORES**



Illus. B



Illus. A



Illus. G



Illus. C

**PILOT SUPER WASP RECEIVER KITS**

**ILLUSTRATION A:—**  
Pilot Type K-115 Super Wasp A. C. Receiver Kit (exclusive of tubes and power pack).  
Price ..... **\$34.50**  
Pilot Type K-110 Super Wasp D.C. Receiver Kit (exclusive of tubes and batteries).  
Price ..... **\$29.50**

The Pilot Super Wasp Receiver Kits are the best-known universal receivers.

Electrically, the K-115 A. C. Super Wasp consists of one stage of screen grid tuned r. f. amplification, a regenerative

detector, one stage of resistance coupled and one stage of transformer coupled audio frequency amplification.

The K-110, D. C. Super Wasp has all the features of the K-115 kit, except that it is designed for battery operation. Its audio amplifier consists of two transformer coupled stages.

The Super Wasp kits, both A. C. and D. C. contain everything necessary to assemble the receivers themselves. No power equipment is included with the A. C. Super Wasp but the Pilot Type K-111 Power Pack described on page 6 is recommended for use with that receiver.

**PILOT SUPER WASP BLUEPRINTS**

Pilot No. BP-110 Blueprint for Pilot D. C. Super Wasp Receiver.  
Price ..... **10c**  
Pilot No. BP-115 Blueprint for Pilot A. C. Super Wasp Receiver.  
Price ..... **10c**

These blueprints give complete details of construction on the Pilot Super Wasp Receivers.

They are printed on high grade paper and are designed to simplify the construction of the receivers.

**PHILMORE 2-TUBE RECEIVER**

**ILLUSTRATION H:—**  
Philmore 2-Tube Receiver (exclusive of tubes).  
Price ..... **\$4.95**

This fine-looking, inexpensive 2-tube receiver, incorporating an efficient non-re-

generative circuit recognized as the most efficient of its kind, gives clear and loud earphone reception of distant stations and loudspeaker volume on powerful stations.

It can be operated either with dry cells, using 199 tubes or with a storage battery using 201A tubes.

**PHILMORE CRYSTAL RECEIVERS**

**ILLUSTRATION I:—**  
Philmore "Little Wonder" Crystal Set, including Philmore supersensitive, adjustable open crystal.  
Price ..... **59c**

**ILLUSTRATION B:—**  
Philmore "Supertone" Crystal Set, including a Philmore supersensitive, adjustable enclosed crystal.  
Price ..... **89c**

**ILLUSTRATION C:—**  
Philmore "Blackbird" Crystal Set, including a Philmore supersensitive, adjustable enclosed crystal.  
Price ..... **\$2.00**

**ILLUSTRATION G:—**  
Philmore "Selective" Crystal Set, including a Philmore supersensitive, adjustable enclosed crystal.  
Price ..... **\$3.25**

These crystal sets, the best available in their respective price classes make possible efficient radio reception of extremely fine tone quality.

The "Little Wonder" and "Supertone" set can be depended upon to give good results within a range of about 25 miles of good stations when used with an efficient antenna, and will bring in more distant stations under good conditions.

The other crystal receivers will give loud, clear reception on more distant stations.

**CRYSTAL DETECTORS AND CATWHISKERS**

Star Catwhiskers of special spring wire, particularly suited for making contact with crystal detectors. Packed three in a box.

Price, per box of three ..... **25c**

Philmore Dustproof Crystal Detector, rigidly mounted on metal base and covered with a glass top which makes it proof against dust and dirt. Can be adjusted easily to obtain the most sensitive spot.  
Price ..... **25c**

**ILLUSTRATION J:—**

- Star Galena Crystal ..... 10c
- Star Steel Galena Crystal ..... 10c
- Star Pyrite Crystal ..... 10c
- Star Silicon Crystal ..... 10c
- Star "B-Metal" Crystal ..... 25c
- Philmore Galena Crystal ..... 10c
- Philmore Synthetic Crystal ..... 20c

All the crystals listed on this page are of the finest grades obtainable and are carefully tested for sensitivity. They are furnished mounted in holders and carefully packed in individual metal boxes.

**GEM MIDGET HAND MICROPHONE**

**ILLUSTRATION L:—**  
Essenbee "Gem" Midget Hand Microphone with complete instructions for installation and operation.  
Price ..... **\$4.25**

The Gem Midget Hand Mike is a new device which will provide much excellent entertainment. It can be used to cut into a radio program with your own announcements, jokes and songs.

**INSULINE MICROPHONE ADAPTER**

**ILLUSTRATION K:—**  
Insuline Molded Bakelite Microphone Adapter.  
Price ..... **60c**

This microphone adapter is designed with a split cathode connection to permit the introduction of a microphone into the detector tube circuit of standard receivers.

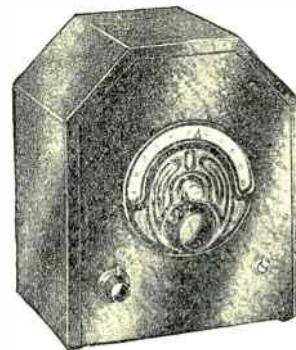
**B. M. S. "VIA-RAD" PHONOGRAPH REPRODUCER**

**ILLUSTRATIONS D, E, F:—**  
B. M. S. "Via-Rad" Phonograph Reproducer complete with reproducer, volume control and adapter.  
Price ..... **\$4.98**

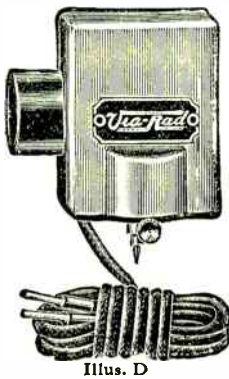
This combination changes any ordinary phonograph into a radio operated instrument of unsurpassed fidelity of reproduc-

tion. Volume can be controlled from a whisper to maximum volume.

It consists of an electric phonograph reproducer (Illustration D), which replaces the ordinary phonograph reproducer, an adapter (Illustration F), which fits into the detector socket of any good radio receiver and a volume control (Illustration E), which is connected between the adapter and the reproducer.



Illus. H



Illus. D



Illus. E



Illus. F



Illus. I



Illus. J

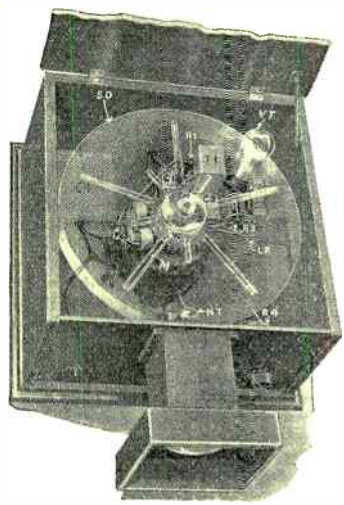


Illus. K



Illus. L

**The Simplest and Most Efficient  
SHORT WAVE AND TELEVISION KITS  
Ever Offered to the Public**



PHANTOM VIEW OF TELEVISION UNIT

The Baird Universal Shortwave and Television Kits are the last words in perfected assemblies that provide all the pleasures of shortwave and television reception at a fraction of the usual cost for thoroughly practical outfits.

The Baird Universal Shortwave Receiver is actually UNIVERSAL in its application. It is simple to build, and easy to operate. It can be used with either a magnetic or dynamic speaker and produces a quality of reproduction equal to any high class broadcast receiver.

It is completely a. c. operated, yet there is no trace of hum EVEN AT LOW WAVE LENGTHS BELOW 50 METERS.

Earphone jack, phonograph pickup plug-in jack, all-aluminum chassis, two stages of individually shielded r. f. screen grid radio frequency amplification, high quality resistance coupled amplifier with uniform response characteristic from 10 to 40,000 cycles and 245 power tube output are a few of the outstanding features of this remarkable receiver.

While this receiver has been designed with special features that make it specially adapted for television it is by no means limited to television reception. It can be used with equal efficiency on the entire shortwave and broadcast band from 15 to 520 meters, and especially to tune in short wave stations all over the world.

A receiver such as this one, capable of amplifying uniformly the television frequencies is absolutely necessary for television reception. Ordinary short wave receivers are not suitable for television reception.

The Baird Television Kit has been especially designed to eliminate all the doubtful points and troubles. It is by no means a novelty or toy, but a thoroughly practical receiver for the many television programs now on the air.

The standard unit is provided with scanning belt and accessories for tuning in the standard 60-hole transmissions but it can readily be adapted to receive 45-hole or 48-hole programs or any other standard system.

**LIST OF PARTS AND SINGLE UNIT PRICES FOR TELEVISION RECEIVER**

No. Req.	Part and Type No.	Price Each
1	No. 151 Television Cabinet.....	\$10.50
1	No. 152 Baird Giant Power Rheostat.....	1.50
1	No. 153 A. C. Switch.....	.40
1	No. 154 Magnet Mounting.....	5.50
1	No. 155 Synchronizing Wheel.....	3.00
1	No. 156 Spider.....	4.50
1	No. 157 Scanning Belt.....	3.95
1	No. 158 Oil Condenser.....	2.55
1	No. 159 Baldor Motor.....	18.00
1	No. 160 Audio Transformer.....	1.95
1	No. 161 Baird Bypass Condenser.....	.75
2	No. 162 Baird Filter Condensers.....	.55
1	No. 163, No. 30 Vitreous Resistor.....	.40
1	No. 164, No. 10 Vitreous Resistor.....	.40
1	No. 165 Pigtail Resistor.....	.20
1	No. 166, 3" Lens.....	2.25
1	No. 167 Television Lamp, 1" plate.....	2.50
2	No. 168, 4-prong Tube Sockets.....	.15
1	No. 169 Fixture Cord and Plug.....	.45
1	No. 170 Hookup Wire, 25 feet.....	.25
1	No. 171 Special Cable and Plug.....	.95
1	No. 173 Hardware Assembly.....	.20



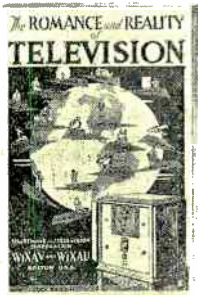
TELEVISION UNIT IN CABINET



SHORT WAVE RECEIVER IN CABINET

**LIST OF PARTS AND SINGLE UNIT PRICES FOR SHORT WAVE RECEIVER**

No. Req.	Part and Type No.	Price Each
1	No. 51 Chassis with 8 sockets, 3 coil shields, 3 tube shields, 2 condensers and one 3-post binding post unit already riveted to chassis.....	\$8.70
3	No. 52 Coil Sockets.....	.20
2	No. 53 Pigtail Resistors.....	.25
3	No. 54, .0001 mfd. Condensers.....	.15
3	No. 55 Screen Grid Clips.....	.10
2	No. 56, .02 mfd. Molded Condensers.....	.75
2	No. 57 Jacks.....	.45
1	No. 58 Condenser Block.....	2.25
1	No. 59 Condenser Block.....	2.75
3	No. 60 R. F. Chokes.....	.75
1	No. 61 Baird 3-gang Variable Condenser.....	5.25
3	No. 62 Electrolytic Condensers.....	1.30
1	No. 63 Baird Power Transformer.....	5.25
1	No. 64 Baird Power Choke.....	4.60
1	No. 65 Baird Gang Resistor.....	2.30
1	No. 66, 3-Condenser Strip.....	1.50
4	No. 67 Knobs.....	.15
1	No. 68, 2-pole Toggle Switch.....	.40
1	No. 69 Speaker Dual Jack Terminal Unit.....	.20
1	No. 70 Combination Potentiometer and Switch.....	.95
1	No. 71, No. 9 Baird Midget Condenser.....	.85
1	No. 72, No. 15 Baird Midget Condenser.....	.85
1	No. 73 Buffer Condenser.....	.85
1	No. 74 Voltage Divider.....	1.35
1	No. 75 Baird Dial and Escutcheon.....	1.35
1	No. 76 Baird Front Panel.....	2.30
2	No. 77 Grid Resistors.....	.15
1	No. 78 Hookup Wire, 40 feet.....	.45
1	No. 79, 3-pole Switch.....	.50
1	No. 80 Dial Bracket and Lamp.....	.25
1	No. 500 Hardware Assembly.....	.75
1	Set of 15 Octocoils to cover 15 to 520 meter Wave Band. Complete Set.....	12.75

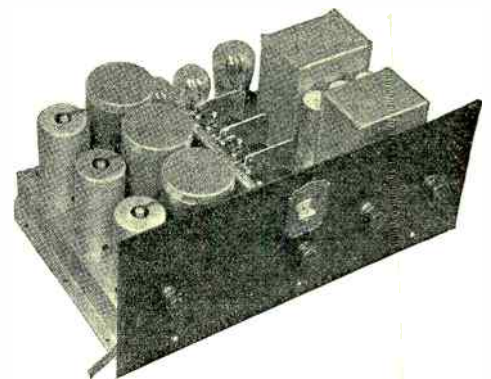


This book gives complete information on short wave and television reception. It contains a complete description with constructional data on how to build a very efficient short wave receiver and also on how to build a television receiver. In addition it gives a very simple explanation of the theory of television and a complete list of shortwave and television stations all over the world. The Romance and Reality of Television. Price..... **15c**

**SPECIAL EXPERIMENTER'S PRICES FOR COMPLETE KITS**

Baird Complete Kit containing all parts necessary to build the shortwave receiver, exclusive of cabinet and tubes. Price..... **\$56.25**  
 Cabinet for Shortwave Receiver. Price..... **\$10.50**  
 Baird Complete Kit containing all parts necessary to build the Television Unit, exclusive of UX-245 amplifier tube, but including Television Neon Lamp and lens to obtain a 3" picture. Price..... **\$58.00**  
 No. 172, 6" Lens for larger picture, if desired. Price..... **\$10.00**

**PARTS FOR TELEVISION OR SHORT WAVE RECEIVER CAN BE BOUGHT INDIVIDUALLY OR IN COMPLETE KITS**



TOP VIEW OF RECEIVER CHASSIS

**ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION**



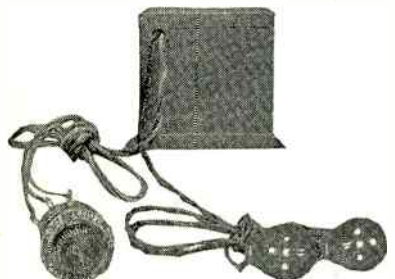
Illus. D



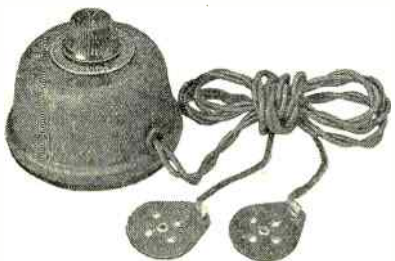
Illus. E



Illus. F



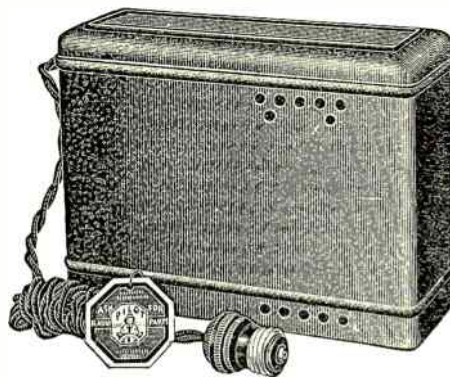
Illus. G



Illus. H



Illus. I



Illus. A



Illus. B



Illus. C

**PILOT FACTORY-ASSEMBLED POWER PACKS**

**ILLUSTRATION A:—**  
Pilot No. K-111 Power Pack for receivers using Type 171A power tubes. **\$16.50**  
Price .....  
Pilot No. K-112 Power Pack for receivers using Type 245 power tubes. **\$19.50**  
Price .....

These high grade power supply units, factory assembled and wired, are enclosed in steel cases, 10" long, 7" high and 3 3/4" wide, attractively finished in black Japanese lacquer. They are provided with suitable ventilating holes and removable tops.

In the No. K-111 unit, the 280 tube fits in the case. In the No. K-112 unit, the tube must be mounted externally.

The No. K-111 power pack has a maximum d. c. output of 60 milliamperes at 220 volts. Lower voltages

of 180, 135, 90 and 45 are available. There are three low voltage windings for a. c. tube filaments; a 5-volt, 1-ampere winding for two 171A tubes; a 2 1/2 volt, 8-ampere winding for four 227, 224 or other tubes of similar filament characteristics and a 1 1/2 volt, 4-ampere winding for four 226 tubes. This power pack is ideally suited for use with the A. C. Super Wasp Receiver.

The No. K-112 power pack will deliver 90 milliamperes at 300 volts with lower voltages taps at 180, 135, 90 and 45 volts. A variable resistance provides control of these lower voltages. There are three filament windings; a 5-volt, 2-ampere winding for the 280 rectifier tube; a 2 1/2-volt, 12-ampere winding for six or seven 224, 227 or other tubes of similar characteristics and a 2 1/2-volt, 3.6-ampere winding for two 245 tubes.

Both power packs are designed for use on 110 to 120-volt, 50 to 60 cycle a. c. power lines.

**LOUDSPEAKER EXTENSION CORDS**

**ILLUSTRATION B:—**  
Birnbach Radio Co. or American Braiding Co., 18-foot Loudspeaker Extension Cords. **25c**  
Price, Each .....  
Birnbach Radio Co. or American Braiding Co., 30-foot Loudspeaker Extension Cords. **39c**  
Price, Each .....

Birnbach Radio Co. or American Braiding Co., 50-foot Loudspeaker Extension Cords. **60c**  
Price, Each .....

These extension cords permit a speaker to be used

at a considerable distance from the receiver. Longer extension cords than the standard length cords listed can be made by connecting two or more extension cords together by means of the extension cord connectors shown in Illustration C and described below.

**EXTENSION CORD CONNECTORS**

**ILLUSTRATION C:—**  
Birnbach Bakelite Extension Cord Connector. **10c**  
Price .....  
American Braiding Co. Bakelite Extension Cord Connector. **10c**  
Price .....

These sturdy Bakelite Extension Cord Connectors are designed to connect together two or more extension cords when longer than standard length extension cords are required.

They are neat in appearance and easy to use. Cord tips can be inserted or pulled out quickly without the use of tools.

**PHONE AND LOUDSPEAKER CORDS**

**ILLUSTRATION D:—**  
American Braiding Co. Lusterized Loudspeaker Cord. Length—5 feet. **15c**  
Price .....

American Braiding Co. Lusterized Double Headphone Cord. Length—5 feet. **20c**  
Price .....

These phone and loudspeaker cords are made of the highest grade American tinsel covered with closely

woven Mercerized braid. Standard Cords are furnished with pin type terminals but may be had with spade terminals if desired.

**STANDARD BATTERY CABLES**

**ILLUSTRATION E:—**  
These battery cables are made of high grade, rubber covered, stranded copper wire.  
The individual wires are in turn covered with braided coverings of different colors and bound together in a sheath that leaves only a few inches at both ends uncovered.  
Cables are all 4 1/4 feet long.  
They serve as the ideal means of making connections between batteries or battery eliminators and receivers.

Trade Name	Type No.	No. of Wires	Price Each
Birnbach	450	5	25c
Lusterized		5	25c
Birnbach	451	6	30c
Birnbach	452	7	30c
Lusterized		7	30c
Birnbach	453	8	39c
Birnbach	454	9	39c
Lusterized		9	39c

**RADIART TONE CONTROLS**

**ILLUSTRATION F:—**  
Radiart De Luxe Full Range Tone Control Wired Complete in Metal Case. **\$2.75**  
Price .....  
**ILLUSTRATION G:—**  
Radiart Type KGP Full Range Skeleton Model Tone Control for Panel Mounting. **\$2.50**  
Price .....

**ILLUSTRATION H:—**  
Radiart Standard Type Tone Control, Wired Complete in Metal Case. **\$1.75**  
Price .....

**ILLUSTRATION I:—**  
Radiart Type KFP Standard Skeleton Model Tone Control for Panel Mounting. **\$1.50**  
Price .....

This series of units is designed to permit the addition of the popular tone control feature to new and existing receivers in which the tone control feature has not been incorporated. Their use permits the operator to control the entire audible scale from deep bass to high treble.

They may be installed easily and quickly in about two minutes. Complete installation instructions are included with all units.

The Full Range Controls are designed for use only on push-pull amplifiers. The Standard Controls may be used with either push-pull or single output tube amplifiers.

**ASSEMBLED AND KNOCKDOWN CONSOLE CABINETS**

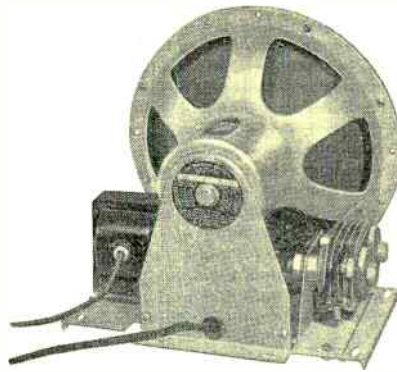
St. John's No. 101 Assembled Radio Console, complete with Speaker Compartment. **\$1.75**  
Price .....  
St. John's No. 112 Knockdown Radio Table Console. All pieces varnished and polished and ready to be assembled. **\$4.25**  
Price .....

These radio table console cabinets are the finest bargains available in radio furniture.

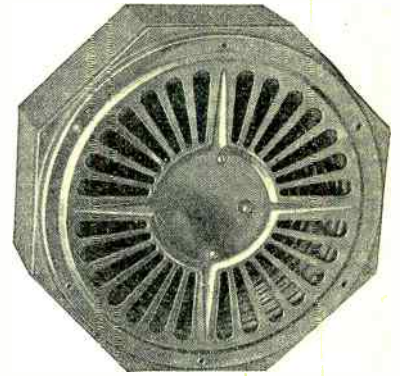
Before placing your order for a radio console or cabinet, visit your nearest Green Front Store and examine these inexpensive, finely built and handsomely finished consoles.



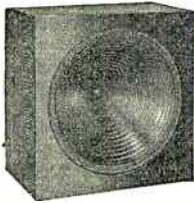
Illus. A



Illus. B



Illus. C



Illus. D



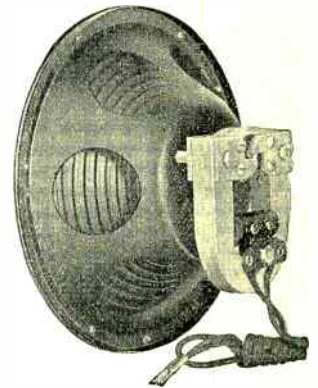
Illus. E



Illus. F



Illus. G



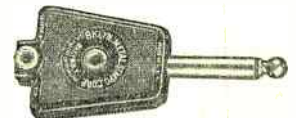
Illus. H



Illus. I



Illus. J



Illus. K

**MUTER ULTRADYNAMIC A. C. SPEAKER**

ILLUSTRATION A:—  
Muter Type 4610 Ultradynamic A. C. Speaker.  
Price (less rectifier tube)..... **\$7.50**  
The Muter Ultradynamic A. C. Speaker gives exceptionally realistic

reproduction. This model uses a 280-type tube and a highly efficient circuit. It can be used with either a single-tube or push-pull amplifier output. The overall dimensions are: height—10 $\frac{3}{4}$ "", width—10 $\frac{1}{4}$ "", depth—7".

**MAGNAVOX DYNAMIC SPEAKER**

ILLUSTRATION B:—  
Magnavox Type 410 Dynamic A. C. Speaker.  
Price, complete ..... **\$12.00**  
This speaker is designed for operation direct from a 105 to 120-volt, 60-cycle, a. c. line. It is provided with

a complete, self-contained rectifier system to furnish the necessary current for the speaker field. The cone is 7 $\frac{3}{4}$ " in diameter. The overall dimensions are: height—9 $\frac{1}{2}$ "", width—8 $\frac{3}{4}$ "", depth—6 5/32".

**UTAH AUTOMOBILE DYNAMIC SPEAKER**

ILLUSTRATION C:—  
Utah Midget Dynamic Speaker for Automobile Use. Type 510B. **\$7.50**  
Price .....  
This speaker makes it possible to enjoy the same high quality Utah Dynamic Speaker reception in the car as at home. It consists of a Utah No. 510, 7" dynamic chassis, with field coil

designed to operate from the 6-volt storage battery (current draw—only 1 amp.) The unit is mounted in an attractive octagon-shaped baffle box cabinet, 8 $\frac{1}{2}$ " wide and 4" deep. The front, metal grille is silk lined to make it dustproof. It is supplied complete with mounting brackets and 5-ft. cord.

**UTAH AUTOMOBILE MAGNETIC SPEAKER**

ILLUSTRATION C:—  
Utah Midget Magnetic Speaker for Automobile Use. Type 400. **\$6.00**  
Price .....  
In outward appearance, this speaker is the same as the Type 510B de-

scribed above, and is mounted in an octagon-shaped box, 8 $\frac{1}{2}$ " wide and 3 $\frac{1}{2}$ " deep. A Utah magnetic chassis is used in place of the dynamic unit.

**NEW UTAH MAGNETIC AND DYNAMIC SPEAKERS**

The following Utah Speakers were added to the Kresge line of speakers just before this catalog went to press, but too late to permit detailed descriptions and illustrations to be included. Ask for details at your nearest Kresge Green Front Store.

No. 6A, 6" Dynamic Speaker..... **\$3.00**  
No. 8S, 8" Dynamic Speaker..... **3.25**  
No. 8A, 8" Dynamic Speaker..... **3.75**  
Auto Type Dynamic Speaker..... **4.95**  
Auto Type Magnetic Speaker..... **4.95**  
Unmounted Magnetic Cone..... **2.50**

**UTAH MOUNTED POWER INDUCTOR SPEAKER**

ILLUSTRATION D:—  
Utah Power Inductor Speaker Chassis mounted in Baffle Box. Type XB. **\$4.00**  
Price .....

This unit consists of the Type XM chassis shown in Illus. H, mounted in an efficient, well constructed baffle box, 9 $\frac{1}{2}$ " high, 9 $\frac{1}{2}$ " wide and 5" deep.

**UTAH LOUDSPEAKER UNITS**

ILLUSTRATION E:—  
Utah Standard Speaker Unit. **\$3.25**  
Price .....  
Utah Big Chief Speaker Unit. **\$2.50**  
Price .....  
The popularity of Utah loud speaker

units is due to their sensitivity, ability to handle great volume without distortion and faithful reproduction. Both units are 3" in diameter, have a  $\frac{3}{8}$ " thread and are supplied with 5-ft. cords.

**STANDARD HEADPHONES**

ILLUSTRATION F:—  
Frost No. 174, 2,000-ohm Phones. Price ..... **\$1.50**  
ILLUSTRATION G:—  
Cannon Ball Dixie, 2,200-ohm Phones. Price ..... **\$1.50**

Brandes Superior, 2,200-ohm Phones. (Not illustrated but similar in appearance to those shown in Ill. G.) **\$2.00**  
Price .....  
These high quality phones are ideal for testing work, portable sets, sick-rooms and for long distance reception.

**INSULINE EXTRA SPEAKER OUTPUT ADAPTER**

ILLUSTRATION I:—  
Insuline Extra Speaker Output Adapter. Type 353. Price ..... **50c**

This adapter is designed to permit the connection of additional speakers to the output of push-pull amplifier receivers without requiring any change in the wiring of the receiver.

**INSULINE EARPHONE ADAPTER**

ILLUSTRATION J:—  
Insuline Earphone Adapter. Type No. 78. Price ..... **89c**

Makes it possible to plug in earphones and disconnect speaker when the rest of the family does not wish to be annoyed by loudspeaker volume.

**B. M. S. BAKELITE AUTOMATIC PHONE PLUG**

ILLUSTRATION K:—  
B. M. S. No. 309 Bakelite Automatic Phone Plug. Price ..... **25c**

This safe, automatic phone plug eliminates all pushing of levers or other manipulation to insert or remove cord tips.

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



Illus. B



Illus. A

**WARD RUNNING BOARD CAR ANTENNA**

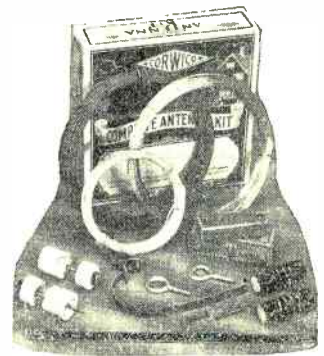
**ILLUSTRATION A:—**  
Ward Automobile Antenna.  
Price ..... **\$3.00**  
This simple, ingenious running board antenna solves the heretofore troublesome problem of making a suitable car antenna installation quick-

ly. The Ward car antenna fits under the running board of any automobile and can be installed in ten minutes at a fraction of the cost of any other type of installation. All metal parts are rust-proof and every exposed part is protected against damage.

**CORNISH WIRE CO. ANTENNA KITS**

**ILLUSTRATION I:—**  
Cornico Type B Outside Antenna Kit. **89c**  
**ILLUSTRATION J:—**  
Cornico Indoor Antenna Packet. **50c**  
Price .....  
These antenna kits contain all the essential parts necessary to construct antenna and

ground systems of various types and furnish an economical combination of such elements. The Type B Antenna Kit contains all materials such as wire, lightning arrester, insulators, leadin strip and ground clamp for an outdoor installation while the Indoor Antenna Packet contains wire, ground clamp and insulated staples for an indoor installation.



Illus. I

**MUTER LIGHT SOCKET ANTENNA PLUG**

**ILLUSTRATION B:—**  
Muter Light Socket Antenna Plug.  
Price ..... **25c**

This black molded Bakelite Antenna Plug screws into any standard lighting socket and eliminates the necessity of an outside antenna.

**INSULINE INSULTENNA AERIAL ELIMINATOR**

**ILLUSTRATION C:—**  
Insuline No. 87 Insultenna.  
Price ..... **\$1.75**  
The Insultenna Aerial Eliminator is a radical departure in antenna devices. It is not a

light socket antenna and has no connection with the electric light current line, hence it eliminates any possibility of a c. hum. The unit is remarkably compact and may be installed anywhere. It may be placed conveniently in the radio console or cabinet.

**INSULINE ANTENNAVOLT AERIAL AND VOLTAGE CONTROL**

**ILLUSTRATION K:—**  
Insuline No. 98 Antennavolt Combination Aerial and Voltage Control.  
Price ..... **\$1.50**  
The Insuline Antennavolt is an ingenious

unit designed to combine the features of an antenna plug to provide a simple and effective antenna connection for a receiver, and a Resistovolt automatic line voltage control to provide voltage regulation of the power supply.



Illus. J

**GILLETT AERIAL CONNECTORS**

**ILLUSTRATION G:—**  
Gillett Aerial Connectors.  
Price, Each ..... **10c**  
Three Gillett Aerial Connectors on every aerial, one at each end of the aerial span and

another at the point where the leadin is taken, will prevent those annoying, rasping noises, often attributed to static and electrical interference but in reality due to poor contacts at the leadin and twisted strands rubbing against each other at each end of the aerial.

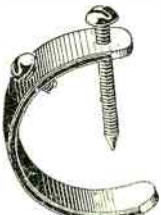
**ANTENNA LEADIN STRIPS**

**ILLUSTRATION L:—**  
Birnback Leadin Strip. **10c**  
Fahnestock Leadin Strip. **10c**  
Muter Flexo Leadin Strip. **10c**  
Corwico Leadin Strip. **5c**  
Price .....

Mueller Dry Ribbon Leadin Strip **10c**  
Price .....  
An approved leadin insulator strip forms one of the simplest, easiest and least expensive methods of bringing a connection from the antenna leadin through the window to the receiver. The units listed here are the finest leadins available.



Illus. K



Illus. D



Illus. E



Illus. F

**STANDARD APPROVED LIGHTNING ARRESTERS**

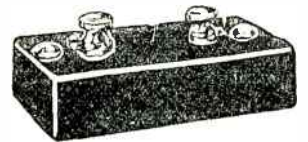
**ILLUSTRATION H:—**  
Muter No. 1,000 Porcelain Lightning Arrester. For indoor or outdoor use. Air gap type with cleanable carbon brushes.  
Price ..... **25c**  
**ILLUSTRATION M:—**  
Union No. 8816 Porcelain Lightning Arrester. For indoor or outdoor use. This is a carbon type arrester.  
Price ..... **25c**  
**ILLUSTRATION N:—**  
Birnback No. 650 Blue Porcelain Lightning Arrester.  
Price ..... **15c**

**ILLUSTRATION O:—**  
Porcelain Products Co. Brownie Lightning Arrester. Especially suited for outdoor installation.  
Price ..... **25c**

The Board of Fire Underwriters and Fire Insurance Companies specifically require that every outside aerial installation be protected by the use of an approved outdoor or indoor lightning arrester. The lightning arresters listed on this page are the best buys on the market and provide full protection at a nominal cost.



Illus. L



Illus. M



Illus. N

**STANDARD GROUND CLAMPS**

**ILLUSTRATION D:—**  
Muter Stamped Ground Clamp.  
Price ..... **10c**  
**ILLUSTRATION E:—**  
Muter Adjustable Ground Clamp.  
Price ..... **5c**  
**ILLUSTRATION F:—**  
Mueller Channel Construction Ground Clamp. For use on 3/8" to 1 1/2" diameter pipes.  
Price ..... **10c**

Fahnestock Type B, Strip Type Ground Clamp fitted with a Fahnestock Clip.  
Price ..... **5c**

Much poor reception is caused by the use of inefficient ground connections which result in high resistance joints in the antenna and ground system. The inexpensive ground clamps listed on this page are designed to provide positive, efficient, negligible resistance ground connections. They are the cheapest insurance for good radio reception.



Illus. H

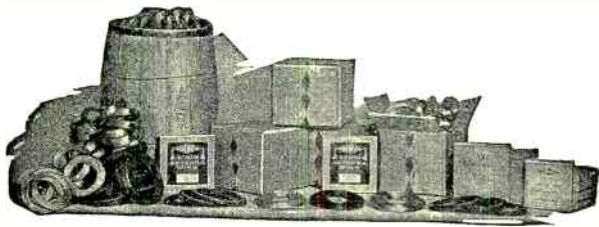


Illus. O

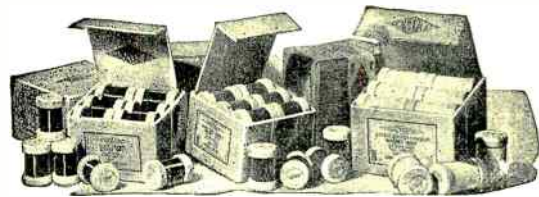


Illus. G





Illus. A



Illus. B

**AERIAL, LEADIN AND GROUND  
BARE AND INSULATED WIRE**

**BARE WIRE**

Corwico Type 55, Size No. 15 Solid Copper Wire.	
50-foot Coil	15c
100-foot Coil	25c
Eureka Type 31, Size 7/23 Stranded Copper Wire.	
50-foot Coil	15c
100-foot Coil	30c
Corwico Type 30, Size 7-Strand Copper Wire.	
85-foot Coil	25c
Corwico Type 64, Size 7/20 Stranded Copper Wire.	
100-foot Coil	75c

**INSULATED WIRE**

Corwico Type 36, Size No. 15 Solid, Enamel Insulated Copper Wire.	
50-foot Coil, in carton	15c
100-foot Coil, in carton	30c
Eureka Type 33, Size 7/23 Stranded, Enamel Insulated Copper Wire.	
50-foot Coil, in carton	20c
100-foot Coil, in carton	40c
Corwico Type 151, Size No. 14 Solid, Rubber Insulated Copper Wire.	
50-foot Coil	50c
Cambricoid Varnished Cambric Insulated Copper Wire.	
100-foot Coil	\$ .50
250-foot Coil	\$1.25
500-foot Coil	\$2.50
1,000-foot Coil	\$5.00
Available in spools at	8 feet for \$ .05
Corwico Type 740, Stranded, Rubber and Weatherproof Braid Insulated Copper Wire.	
100-foot Coil, in carton	35c
Birnbach Colored Rubber Covered Leadin Wire	
25-foot Coil	25c
50-foot Coil	50c

**SHIELDED WIRE**

Corwico Type 191, Size No. 16 Solid, Rubber Insulated and Shielded Copper Wire.	
50-foot Coil	75c
Birnbach, Size 7/24 Stranded, Rubber Insulated and Shielded Copper Wire.	
25-foot Coil	40c
50-foot Coil	75c

**HOOKUP AND BUS BAR WIRE**

Corwico, Size No. 18 Solid, Double Cotton Covered Annunciator Hookup Wire.	
25-foot Coil, in carton	10c
Flexibus, Stranded, Flexible Varnished Cambric Insulated Hookup Wire. Available in Red, Black, Green and Yellow colors.	
5-foot Coil	10c
Corwico, Size No. 18 Stranded, Rubber Covered Hookup Wire. Available in Red, Black and Green.	
10-foot Coil	10c
Corwico, Size No. 18 Twisted Pair, Stranded, Rubber Covered Hookup Wire. Specially designed for filament wiring.	
Available in spools. Price	5 feet for 10c
Braidite Solid Hookup Wire. Covered with a special cotton wrap and cotton braid. Eliminates necessity for stripping insulation for wiring since insulation can be pushed back while soldering. Available in Red, Green and Black colors.	
10-foot Coil	10c
Corwico General Purpose Size No. 18 Stranded, Rubber Covered Wire.	
100-foot spool	75c
Corwico, Size No. 15 Solid, Square Bare Hookup Wire. Available in 2-foot straight lengths.	
Price	Three, 2-foot lengths for 5c
Corwico, Size No. 15 Solid, Round Bare Hookup Wire. Available in 2-foot straight lengths.	
Price	Three, 2-foot lengths for 5c



Illus. J



Illus. C



Illus. E



Illus. F



Illus. G



Illus. H



Illus. I

**MAGNET WIRE**

Corwico Magnet Wire in all standard sizes and insulation. Price, per spool, all types **25c**  
Available in the following standard insulations and sizes. Figures in parentheses indicate length of wire in each spool of the given size of wire.

**ENAMEL INSULATION**

Sizes: 22 (175); 24 (300); 26 (320); 28 (505).  
**GREEN SILK OVER COTTON**  
Sizes: 18 (43); 20 (52); 22 (62); 24 (90); 26 (106); 28 (125).  
**GREEN DOUBLE SILK**  
Sizes: 30 (180); 32 (190); 34 (205); 36 (220).  
**WHITE DOUBLE COTTON**  
Sizes: 18 (55); 20 (85); 22 (110); 24 (140).

**SPAGHETTI TUBING INSULATION**

Mitchell-Rand Type M. R. 10 Spaghetti Tubing Insulation. Available in Black, Red, Yellow and Green in 21-inch lengths. Price, per length **5c**  
Mitchell-Rand Spaghetti Tubing Insulation is made of the highest grade cambric tubing impregnated with the finest insulating varnish obtainable.

**SPECIAL AERIAL WIRES AND TAPES**

**ILLUSTRATION C:—**  
Royale Tape Aerial, a modern convenient adhesive tape aerial that can be strung around a room in a few minutes without tacks or tools. Price **50c**

**ILLUSTRATION D:—**  
MacKenzie Spring Aerial. Contains 125 feet of highly conductive wire in spring form. Ideal for both indoor and outdoor use. Will not rust or tarnish. Price **69c**

**ILLUSTRATION E:—**  
Blue Streak Indoor Aerial. Consists of 65 feet of specially processed stranded wire of high radio frequency conductivity for indoor use. Price **50c**

**ILLUSTRATION F:—**  
Corwico Crimped Indoor Aerial. A crimped, flexible pure copper ribbon designed to provide a large surface and high radio frequency conductivity. Price in 50-foot lengths **25c**

**ILLUSTRATION G:—**  
Corwico "Echo Tape" Indoor Aerial. A flexible metallic ribbon antenna especially designed for indoor use. Can be concealed behind the picture moulding. Price in 50-foot coils **25c**

**AERIAL SYSTEM INSULATORS  
LEADIN INSULATING SCREW EYES**

<b>ILLUSTRATION H:—</b>	
Union No. 9000 Screw Eye, 3" Overall	5c
Porcelain Products No. 1926 Insulating Screw Eye, 3" Overall	5c
Union No. 9001 Screw Eye, 6" Overall	5c
Porcelain Products No. 1925 Insulating Screw Eye, 7 1/4" Overall	5c

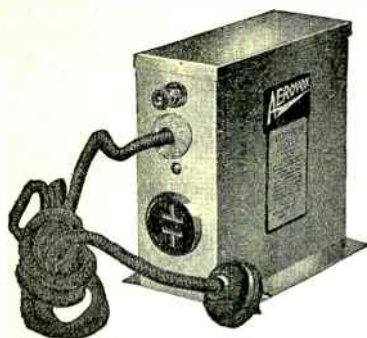
**ANTENNA SUPPORT INSULATORS**

<b>ILLUSTRATION I:—(GLASS)</b>	
Union No. 8130 Glass Insulator, 3 1/2" long	5c
Jenkins No. 8 Glass Insulator, 3 1/2" long	5c
Cornish No. 2 Glass Insulator, 3 1/2" long	5c
Jenkins No. 3 Glass Insulator, 4 1/2" long	5c
Jenkins No. 5 Glass Insulator, 5 1/4" long	10c
<b>ILLUSTRATION J:—(PORCELAIN)</b>	
Porcelain Products No. 3A Med. Joe Brown Glaze Porcelain Insulator, 4" long	5c
<b>ILLUSTRATION K:—(PORCELAIN)</b>	
Porcelain Products No. 8117 White Glaze Porcelain Insulator, 2 1/2" long	2 for 5c
Union No. 8128 Porcelain Insulator, 2 1/2" l.	2 for 5c
Union No. 8122 Porcelain Insulator, 3" long	5c



Illus. K

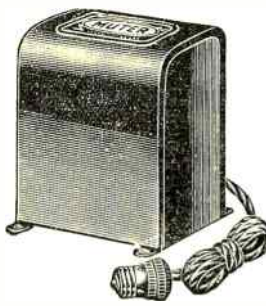
**ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY  
AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION**



Illus. A



Illus. B



Illus. C



Illus. D

**NOISE INTERFERENCE FILTERS**

**ILLUSTRATION A:—**

Aerovox Type IN-24 Interference Filter. Universally adapted to all circuits and designed for all general installations. Price **\$4.00**

**ILLUSTRATION F:—**

Aerovox Type IN-25 Interference Filter. Designed for light duty work to mount on standard wall plate outlets. Screw which mounts it on wall plate serves as ground connection. Price **\$1.50**

**ILLUSTRATION G:—**

Aerovox Type IN-26 Interference Filter. Designed for insertion into extension leads and for connection close to interfering appliance. Light Duty Type. Price **\$1.50**

**ILLUSTRATION C:—**

Muter Type 4800 Junior Interference Filter. Light Duty Type for small motors, etc. Price **\$2.25**

Muter Type 4810 Senior Interference Filter. Heavy Duty Type for suppression of serious interference. Consists of combination capacity and inductance filter and can be used with appliances drawing up to 5 amperes on 110-volt a. c. lines or up to 220 volts d. c. lines. Must not be used with appliances drawing over 5 amperes. Price **\$4.25**

**ILLUSTRATION E:—**

Dongan No. X-319 Junior Interference Filter. Light Duty Type for small motors, etc. Price **\$2.25**

Dongan No. X-320 Senior Interference Filter. Heavy Duty Type for suppression of serious interference. Consists of combination capacity and inductance filter and can be used on appliances drawing up to 3 amperes on 110-volt a. c. lines. Must not be used with appliances drawing over 3 amperes. Price **\$4.00**

**ILLUSTRATION H:—**

Insuline No. 94 Filtevolt Jr. Interference Filter. Light Duty Type for small motors, etc. Price **\$1.75**

The Interference Filters listed above are designed to eliminate interference caused by electrical appliances such as motors, refrigerators, vacuum cleaners, drink mixers, etc.

They are most effective when connected between the appliance which is causing the disturbance and the line so as to prevent the disturbance from being transmitted over the line or radiated through space. When used in that manner, the device should be plugged in between the appliance and the line and the binding post of the interference filter should be connected to the frame of the interfering appliance. If connection to the frame is impossible, the binding post should be connected to ground.

The more expensive, heavy duty types are most effective for troublesome interference but where the interference is not very strong, the less expensive light duty types will often be found completely satisfactory.

Where the interfering appliance cannot be located, the interference can usually be eliminated by connecting the filter between the receiver and the power line outlet, with the binding post of the filter connected to ground.



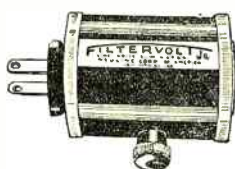
Illus. E



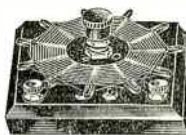
Illus. F



Illus. G



Illus. H



Illus. I



Illus. J



Illus. L



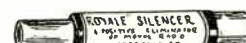
Illus. K



Illus. M



Illus. N



Illus. O

**IGNITION INTERFERENCE FILTERS**

**ILLUSTRATION J:—**

International Resistance Co. Spark Plug Type Interference Suppressor. Price, Each **35c**

**ILLUSTRATION K:—**

International Resistance Co. Distributor Cap Type Interference Suppressor. Price, Each **35c**

**ILLUSTRATION L:—**

International Resistance Co. Cable Type Interference Suppressor for cars that have spark plug cables enclosed, such as Buicks, Chevrolets, La Salles, etc. Price, Each **35c**

**ILLUSTRATION M:—**

Ward Model A, Generator Type Silencer. Price **69c**

**ILLUSTRATION N:—**

Ward Model C, Spark Plug Type Silencer. Price **50c**

**ILLUSTRATION O:—**

Ward Model L, Distributor Type Silencer. Price **50c**

**ILLUSTRATION D:—**

Ward Royale Silencer Kits, consisting of a complete assortment of spark plug, distributor and generator silencers required to completely filter cars of various classes.

Ward Type 6A Kit for 4-cylinder cars. Price **\$3.00**

Ward Type 8A Kit for 6-cylinder cars. Price **\$3.50**

Ward Type 10A Kit for 8-cylinder cars. Price **\$4.00**

To make a satisfactory automobile radio installation which is to be operated while the engine is running, it is important to filter the ignition system of the car, since otherwise, the ignition noises will ruin reception.

To do this, it is necessary to use silencers or suppressors in the spark plug, distributor and generator leads. The units listed above have proved to be the most rugged and effective means of eliminating ignition noises in automobile radio installations.

**AERIAL INTERFERENCE ELIMINATORS**

**ILLUSTRATION B:—**

Essenbee "Clar-A-Tone" Aerial Interference Eliminator. Price **\$1.10**

**ILLUSTRATION I:—**

Steinite Aerial Interference Eliminator. Price **69c**

These Interference Eliminators are designed for connection between the aerial and the receiver. They serve to increase the selectivity of the receiver, thus permitting the operator to tune from station to station without interference from stations on adjoining wavelength bands.

They also help to reduce to some extent electrical interference and static noise which is brought in most strongly by broad tuning receivers.

**USEFUL FORMULAE**

**Ohm's Law for D. C. Circuits**

The relation of electromotive force (E) in volts, the current (I) in amperes and the resistance (R) in ohms in an electrical circuit is called Ohm's Law. It is the fundamental rule governing most electrical calculations and may be expressed in various forms, depending upon the factor for which the equation is to be solved.

The most commonly used form is:

$$E = IR$$

It is remembered easily in this form because the symbols appear in alphabetical order, with the equal sign after the first symbol. Simple transposition gives the other two forms of the equation:

$$I = \frac{E}{R} \text{ and } R = \frac{E}{I}$$

**Ohm's Law for A. C. Circuits**

For alternating circuits, impedance (Z) or combined effect of ohmic resistance, capacitive reactance and inductive reactance must be substituted for the simple resistance of the circuit and the equation becomes:

$$E = IZ$$

where Z is the impedance of the circuit.

**Capacitive Reactance of a Condenser**

The capacitive reactance of a condenser in an a. c. circuit is given by the equation:

$$X_c = \frac{1}{6.28 \times f \times C}$$

where  $X_c$  is the capacitive reactance in ohms,  $f$  is the frequency in cycles per second and  $C$  is the capacity in farads.

**Inductive Reactance of an Inductance**

The inductive reactance of an inductance in an a. c. circuit is given by the equation:

$$X_l = 6.28 \times f \times L$$

where  $X_l$  is the inductive reactance in ohms,  $f$  is the frequency in cycles per second and  $L$  is the inductance in henries.

**Impedance of an A. C. Circuit**

The total impedance of an a. c. circuit due to the combined effect of ohmic resistance, inductive reactance and capacitive reactance is given by:

$$Z = \sqrt{R^2 + (X_l - X_c)^2}$$

in which the symbols represent the impedance, resistance and reactances of the circuit in ohms.

**Peak Value of A. C. Voltage**

In a sine wave a. c. circuit, the peak value of voltage is equal to the effective or nominal voltage of the circuit multiplied by 1.4.

**Resonance in an A. C. Circuit**

When the capacitive reactance in an a. c. circuit just balances the inductive reactance in the circuit, the circuit is said to be in resonance, the only factor acting to limit the flow of current being the ohmic resistance of the circuit.

The frequency at which resonance takes place in a circuit is expressed by the equation:

$$f = \frac{1}{6.28 \sqrt{L \times C}}$$

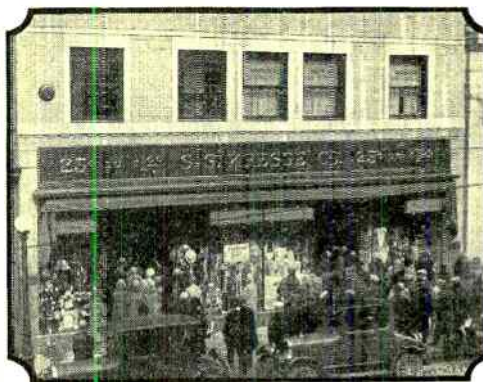
where  $f$  is the frequency in cycles per second,  $L$  is the inductance in henries and  $C$  is the capacity in farads.

**Wavelength—Frequency Conversion**

To change wavelength in meters to frequency in kilocycles, or vice versa, use the following equation:

$$W = \frac{300,000}{F}$$

where  $W$  is wavelength in meters and  $F$  is the frequency in kilocycles. The answer is approximately correct for all practical purposes.



The Store Front of a Typical S. S. Kresge Co. 25c to \$1.00 Green Front Store Where Thrifty Buyers from Miles Around Find "HIGHEST QUALITY" and "BIGGEST VALUES" in Radio, Electrical and General Merchandise

**Resistances in Series**

The total resistance of several resistances connected in series is equal to the sum of the resistances.

$$R_t = R_1 + R_2 + R_3 \text{ etc.}$$

where  $R_t$  is the total resistance and  $R_1, R_2, R_3$  etc. are the resistances of the various units which are connected in series. If the resistances are all equal, the total resistance is equal to the resistance of one multiplied by the number connected in series.

**Resistances in Parallel**

The total resistance of several resistances connected in parallel is given by the equation:

$$R_t = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \text{ etc.}}$$

If the resistances are all equal, the total resistance is equal to the resistance of one divided by the number connected in parallel.

For Complete Information on Radio Magazines and Handbooks see pages 30 and 31.

**Condensers in Parallel**

The total capacity of a number of condensers connected in parallel is equal to the sum of the capacities:

$$C_t = C_1 + C_2 + C_3 \text{ etc.}$$

If the capacities are all equal, the total capacity is equal to the capacity of one condenser multiplied by the number of condensers connected in parallel.

**Condensers in Series**

The total capacity of a number of condensers connected in series is given by the following equation:

$$C_t = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} \text{ etc.}}$$

where  $C_t$  is the total capacity and  $C_1, C_2, C_3$  are the capacities connected in series. If the capacities are equal, the total capacity will be equal to the capacity of one divided by the number of condensers connected in series.

**Power in a Circuit**

The power in a circuit is obtained by using the following equation:

$$P = E \times I = I^2 R$$

where  $P$  is the power in watts,  $E$  is the voltage,  $I$  is the current in amperes and  $R$  is the resistance in ohms.

**USEFUL DATA AVAILABLE FROM MANUFACTURERS**

**Aerovox Research Worker**

The Aerovox Research Worker is a free monthly publication issued by the Aerovox Wireless Corporation to keep radio engineers, experimenters and servicemen abreast of the latest developments in receiver and power supply design, and especially with the proper use of condensers and resistors. The Aerovox Wireless Corporation, Dept. K, 70 Washington St., Brooklyn, N. Y., will be glad to place you on the mailing list for this monthly publication without charge or obligation.

**Condensers and Resistors**

Complete specifications and much valuable information on condensers and resistors and their use is contained in the "Aerovox Condenser and Resistor Manual and Catalog," a copy of which can be obtained free of charge on request to the Aerovox Wireless Corp., Dept. K, 70 Washington St., Brooklyn, N. Y. A very complete line of Aerovox Condensers and resistors is carried by all Kresge Green Front Stores.

**Dry Electrolytic Condensers**

"The Aerovox Hi-Farad Dry Electrolytic Condenser" is the title of a 32-page book containing a wealth of information on all types of electrolytic condensers. It treats in detail the various important factors that affect the operation and life of different electrolytic condensers; the characteristics necessary in filter and bypass condensers to perform their functions satisfactorily and many other subjects of vital importance in the proper use of such condensers. A copy of the booklet can be had free of charge on request to the Aerovox Wireless Corp., Dept. K, 70 Washington St., Brooklyn, N. Y.

Aerovox Dry Electrolytic Condensers are sold in all Kresge Green Front Stores.

**Hard Rubber**

Complete information on the qualities which make hard rubber the ideal dielectric for radio use is contained in a folder "Rubber as a Dielectric for Radio Use," a copy of which can be obtained, free of charge, from the B. F. Goodrich Rubber Co., Dept. K, Akron, Ohio.

Goodrich Hard Rubber Panels are carried in stock in all Kresge Green Front Stores.

**Line Voltage Control**

The importance of Line Voltage Control, a table which shows the proper Lin-A-Trol to use for the various new and old commercial sets now in use, and complete information on the installation of these units in receiver cabinets is contained in a folder titled "Lin-A-Trol Self-Regulating Line Voltage Control. Descriptive Bulletin L-12," a copy of which can be obtained free of charge on request to Lin-A-Trol, Dept. K, 88 Prince St., New York City, N. Y. A complete line of Lin-A-Trols are sold at all Kresge Green Front Stores.

**Mershon Electrolytic Condensers**

"Puncture-Proof Filter Condensers" is the name of a 64-page booklet on the principles and construction of electrolytic condensers and their application to high voltage filter circuits. A copy of this interesting book can be obtained for ten cents on request to the Amrad Corp., Dept. K, 155 E. Ohio St., Chicago, Ill. Mershon Electrolytic Condensers are sold at all Kresge Green Front Stores.

**Resistors**

The "Electrad Catalog" contains complete information and data on the use of Electrad Truvolt Resistors, Royalty Potentiometers and Electrad Attenuators. A copy of this 32-page catalog and manual can be obtained free of charge on request to Electrad, Inc., Dept. K, 175 Varick St., New York City, N. Y. Electrad Resistors, Potentiometers and Attenuators are carried in stock by all Kresge Green Front Stores.

**R. M. A. Resistor Color Code**

A handy Resistor Color Code Chart has been introduced by the International Resistance Co. for the use of engineers and servicemen and can be obtained free of charge on request to the International Resistance Co., Dept. K, 2006 Chestnut St., Philadelphia, Pa. International resistors for replacement use are for sale at all Kresge Green Front Stores.

**Voltmeter Multipliers**

Complete information on how to extend the range of voltmeters and the use of precision resistors to convert milliammeters into high resistance voltmeters is contained in a folder called "Precision Wire Wound Resistors" a copy of which can be obtained free of charge on request to the International Resistance Co., Dept. K, 2006 Chestnut St., Philadelphia, Pa. The resistors required for such purposes can be bought at all Kresge Green Front Stores.

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION

The Hammarlund, Pilot and Eureka variable and adjustable condensers listed on this page represent the finest selection of low cost and high grade condensers available in radio.

Hammarlund condensers need no introduction to radio engineers and experimenters. Their rugged construction, accuracy and low loss characteristics have made them standard for the highest grade receivers and test equipment. Their features include "Parmica" insulation, specially shaped brass plates, full floating rotors, positive contacts, removable shafts and ball and cone bearings.

The Pilot and Eureka units are the best low-priced units available. Pilot "Vaulttype"

condensers shown in Illustrations E, F, G and H are completely enclosed in aluminum covers which serve the double purpose of shielding the units and making them dustproof.

All units have been arranged in the table below for convenience in selecting the proper units. The first group includes single, double, triple and quadruple section variable condensers listed according to the capacity of the sections. The second group includes the various midget variable condensers. The third group includes both single and double section adjustable condensers of the types used for balancing, trimming, neutralizing, oscillator padding and intermediate frequency transformer tuning.

**VARIABLE AND ADJUSTABLE CONDENSERS**

Manufacturer	Type No.	Number of Sections	Cap. of Each Section		Type of Plates†	Illus. No.	Price Each
			Minimum Mmfd.	Maximum Mmfd.			
<b>STANDARD BROADCAST AND SHORT WAVE TUNING CONDENSERS</b>							
Pilot	3022	2		74	CL*	F	\$2.75
Hammarlund	MLW-125	1	10	125	ML*	A	\$2.75
Hammarlund	ML-7	1	6	140	ML	A	\$2.75
Hammarlund	MLW-150	1	14	150	ML*	A	\$2.75
Pilot	1611	1	10	160	CL*	B	\$1.00
Hammarlund	ML-11	1	8	250	ML	A	\$2.75
Hammarlund	ML-17	1	12	350	ML	A	\$2.75
Pilot	1617	1	15	350	CL	B	\$1.00
Pilot	3021	1	20	365	CL	E	\$1.50
Pilot	1623	1	20	500	CL	B	\$1.00
Eureka	450	2	30	350	MWF†	C	\$2.00
Pilot	3042	2	20	365	CL	F	\$3.00
Eureka	451	3	30	350	MWF†	C	\$3.00
Pilot	3063	3	20	365	CL	G	\$4.50
Eureka	452	4	30	350	MWF†	C	\$3.50
Pilot	3084	4	20	365	CL	H	\$6.00

**MIDGET VARIABLE CONDENSERS**

Pilot	J-5	1	10	15	SCL	D	\$ .50
Pilot	J-7	1	12	25	SCL	D	\$ .50
Hammarlund	MC-35S	1	4	35	SCL	I	\$1.00
Hammarlund	MC-50S	1	5	50	SCL	I	\$1.00
Pilot	J-13	1	18	50	SCL	D	\$ .50
Hammarlund	MC-100S	1	6	100	SCL	I	\$1.25
Pilot	J-23	1	23	100	SCL	D	\$ .60
Hammarlund	MC-140M	1	7	140	ML	I	\$1.50
Hammarlund	MC-250M	1	10	260	ML	I	\$2.00

**ADJUSTABLE TRIMMING AND TUNING CONDENSERS**

Hammarlund	EC-35	1	2	35		J	25c
Hammarlund	MICS-60	1	10	60	SCL	K	35c
Hammarlund	EC-80	1	20	100		J	25c
Hammarlund	MICS-140	1	70	140	SCL	K	40c
Hammarlund	MICS-220	1	140	220	SCL	K	50c
Hammarlund	MICD-60	2	10	60	SCL	L	75c
Hammarlund	MICD-140	2	70	140	SCL	L	75c
Hammarlund	MICD-220	2	140	220	SCL	L	85c
Hammarlund	ICD-220	2	140	220	SCL	M	85c

Note †: ML—Midline; CL—Centraline; SCL—Straight Capacity Line; MWF—Midway between straight wavelength and straight frequency line.

Note \*: Indicates condensers with extra wide spacing between plates for shortwave transmitters and receivers.

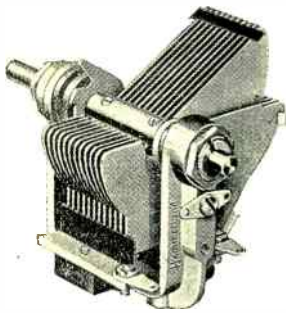
**FLEXIBLE, INSULATED VARIABLE CONDENSER COUPLINGS**

ILLUSTRATION N:—Hammarlund Flexible, Insulated Variable Condenser Coupling.  
Type No. FC.  
Price ..... **50c**

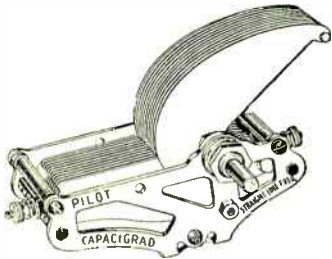
ILLUSTRATION O:—Pilot Flexible, Insulated Variable Condenser Coupling.  
Type No. 12A.  
Price ..... **25c**

Both of these couplings are designed to permit operation of any number of variable condensers or other similar units in tandem without requiring exact shaft alignment.

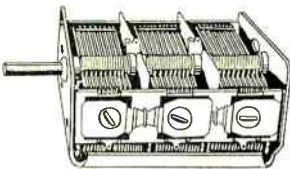
The opposite sides of the coupling are insulated from each other, allowing the operation of the mechanically connected pieces of apparatus as independent electrical units.



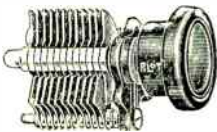
Illus. A



Illus. B



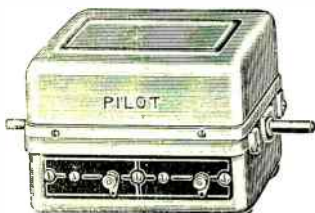
Illus. C



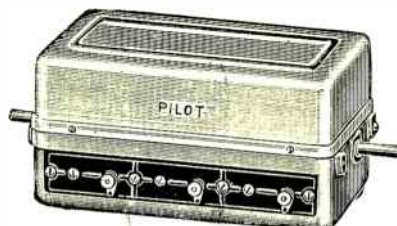
Illus. D



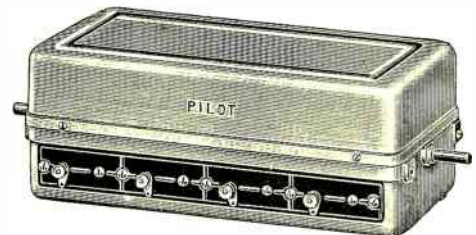
Illus. E



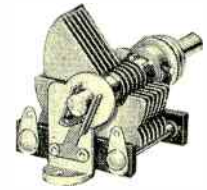
Illus. F



Illus. G



Illus. H



Illus. I



Illus. J



Illus. K



Illus. L



Illus. M



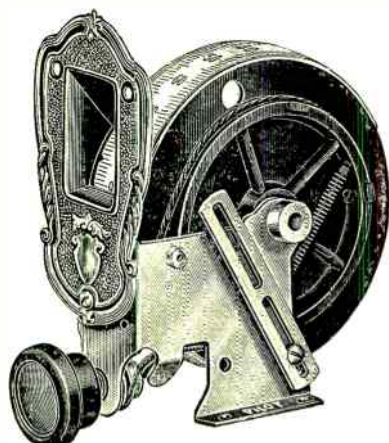
Illus. N



Illus. O

**PILOT DRUM DIALS WITH KNOB CONTROL**

ILLUSTRATION A:—  
Pilot Type 1285 Single Drum Dial with Knob Control.  
Price ..... **\$1.50**  
ILLUSTRATION B:—  
Pilot Type 1283 Double Drum Dial with Knob Control.  
Price ..... **\$2.75**



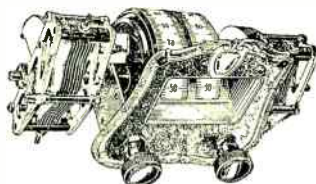
Illus. A

**PILOT-LITE BRONZE PLATE DIAL**

ILLUSTRATION C:—  
Pilot Type 1282 Pilot-Lite Dial with Bronze Plate.  
Price ..... **\$1.00**  
This illuminated dial has large figures

**PILOT KNOB CONTROL ART DIALS**

ILLUSTRATION D:—  
Pilot Type 1278 Black Art Dial. Price ..... **50c**  
Pilot Type 1279 Walnut Art Dial. Price ..... **50c**  
These highly ornamental dials, available in black or walnut finishes can be used to replace less decorative dials.



Illus. B

**PILOT PLAIN BAKELITE DIALS**

ILLUSTRATION E:—  
Pilot Plain Molded Bakelite Dial. Price ..... **25c**  
This dial is designed for use wherever

**EUREKA DRUM DIAL AND ESCUTCHEON PLATE**

Eureka Type 500 Drum Dial. Price ..... **25c**  
ILLUSTRATION F:—  
Pilot Type 501 Escutcheon Plate for use with Type 500 Drum Dial. Price ..... **25c**



Illus. G

**PILOT VARIABLE CONTROL ADJUSTING KNOBS**

ILLUSTRATION G:—  
Pilot Type 1259 (Large Size) Black or Walnut Finish Variable Control Adjusting Knob. Diameter of Knob—1-5/16". Price ..... **10c**  
Pilot Type 1261 (Small Size) Black or Walnut Finish Variable Control Adjusting Knob. Diameter of Knob—7/8". Price ..... **10c**

**MAZDA RADIO PANEL LAMPS**

ILLUSTRATION H:—  
Type T-3, Mazda No. 40, 6-volt, .15-amp. Panel Lamp.  
Type T-3, Mazda No. 41, 2 1/2-volt, .45-amp. Panel Lamp.  
Price, each ..... **10c**



Illus. D

**PILOT TUBE AND PLUG-IN COIL SOCKETS**

ILLUSTRATION I:—  
Pilot Type 216, 4-prong Base Mounting Socket for use where wiring is done on socket side of subpanel.  
Pilot Type 217, 5-prong Base Mounting Socket. Exactly the same as the Type 216 socket except that it is made for 5-prong tubes.  
Price, Each ..... **15c**  
ILLUSTRATION J:—  
Pilot Type 214, 4-prong Subpanel Socket with screw type terminals. Price ..... **10c**  
Pilot Type 215, 5-prong Subpanel Socket with screw type terminals. Price ..... **15c**

**MANUFACTURER'S TYPE SUBPANEL SOCKETS**

NOT ILLUSTRATED.  
Manufacturer's Type Sockets. Price, All Types, Each ..... **10c**  
Eureka Type 700, 4-prong Wafer Type Socket with Cadmium Plated Positive Wiping Contacts.  
Eureka Type 701, 5-prong Wafer Type Socket with Cadmium Plated Positive Wiping Contacts.  
Muter Manufacturer's Type 4-prong Socket with Guide.



Illus. E

**SCREEN GRID TUBE CONTROL GRID CLIPS**

ILLUSTRATION L:—  
American Radio Hardware Co. Type 80 Screen Grid Clip complete with 6" soldered lead.  
Price ..... **10c**  
These screen grid tube clips are designed for use with coils or other apparatus which

In these Pilot Single and Double Drum Dials, the solid, molded Bakelite drums which carry the condensers are driven by a specially treated cord which is wound around the drum and connects with the pulley on the shaft turned by the control knobs. The dials turn easily, smoothly and without backlash even when used with the heaviest bathtub type variable condensers.

which are easily read. The vernier action is smooth and accurate and the frame is sturdy enough to support fairly heavy multiple condensers. Its handsome appearance, low cost and easy mounting features make it a very popular unit.

A positive friction drive prevents slipping or backlash, even when they are used with heavy triple gang variable condensers. The dial mounts with a single machine screw. The scale is double reading making it suitable for use with both clockwise and counterclockwise condensers.

an inexpensive dial is required. It is 4 inches in diameter and is fitted with a bushing designed for 1/4" shafts. It is graduated from 0 to 100.

This simple drum dial unit is ideally suited for use where low cost is a primary consideration. It consists of a simple drum mechanism, the outer edge of the large drum serving as the adjusting control. It is designed for use with condensers having a 1/4" shaft.

These knobs are molded in genuine Bakelite and are fitted with brass bushings to take 1/4" shafts. All are provided with high grade set screws.

They are ideally suited for use on rheostats, volume controls, trimming condensers and other adjustable controls mounted on the panel. Their use throughout gives a uniform appearance to the controls.

These G. E. Mazda Radio Panel Lamps are the standard units for use in illuminated dials and pilot lights.

The two voltage ratings, 6-volt and 2 1/2-volt, make them adaptable for use in practically every type of d. c. and a. c. receiver.

ILLUSTRATION K:—  
Pilot Type 206, 4-prong Cushion Socket for microphonic tubes. Price ..... **25c**

All Pilot Tube Sockets are made of genuine Bakelite. They are designed to hold the tube prongs firmly but not too tightly. The contact springs and soldering terminals of the sockets are actually one-piece construction so that there is no danger of loose contacts, high resistance joints or noises. All binding posts and terminal lugs are marked by letters molded into the Bakelite forms.

Muter Manufacturer's Type 5-prong Socket with Guide.  
Spaulding Manufacturer's Type 4-prong Socket with fibre locating plate.  
Spaulding Manufacturer's Type 5-prong Socket with fibre locating plate.

These compact, inexpensive and efficient subpanel sockets are of the same construction as those used in the chassis of many of the largest set manufacturers.

Eureka Type 300 Screen Grid Clip, designed to eliminate terminal breakage.  
Price ..... **2 for 5c**

requires a means of making contact with the cap (control grid) terminal of screen grid tubes.



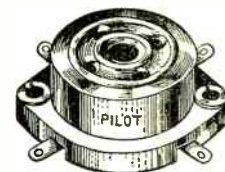
Illus. F



Illus. G



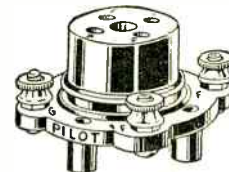
Illus. H



Illus. I



Illus. J

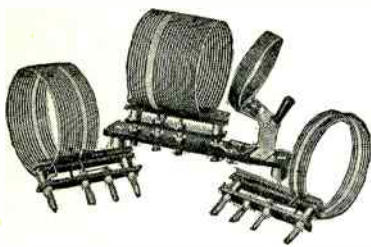


Illus. K



Illus. L

**ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION**



Illus. A

**HAMMARLUND S. W. PLUG-IN COILS**

**ILLUSTRATION A:—**  
Hammarlund Type LWT-4 Set. Price ..... **\$7.00**  
Hammarlund Type LWC-4 Set. Price ..... **\$7.00**

These efficient short wave coil sets are built around the famous Hammarlund self-supporting, space-wound coil material acknowledged as standard for low resistance at high frequencies.

Coil mounts are made of "Par-mica" insulation to reduce losses

to an absolute minimum. The LWT-4 Coil Set consists of a variable primary, plug-in coil mounting base and four plug-in coils to cover the range from 15 to 110 meters.

The LWC-4 coil set consists of a plain base (no variable primary) and four plug-in coils to cover the range from 15 to 110 meters.

The center unit in Illus. A, shows one of the coils plugged into the variable primary base of the LWT-4 Coil Set.

**PILOT MIDGET R. F. TRANSFORMERS**

**ILLUSTRATION D:—**  
Pilot No. 125 Midget Coil Set consisting of 3 coils complete with mounting brackets. Price ..... **75c**

These midget r. f. transformers are designed for use where space

is very limited. They are wound with enamel wire on Formalite tubing forms, 1 3/4" long and 1 1/4" in diameter.

They are designed to cover the 200 to 550 meter broadcast band with .00035 mfd. condensers.

**PILOT SCREEN GRID TUNER**

**ILLUSTRATION C:—**  
Pilot No. 133 Screen Grid Tuner. Price ..... **\$1.00**

The use of this screen grid tuning transformer between a screen grid r. f. amplifier tube and a 201A or 227 detector gives a simple, inexpensive and ex-

traordinarily efficient circuit. A standard screen grid r. f. coupler should be used in the antenna stage.

A .00035 mfd. variable condenser should be used with the tuner to cover the 200 to 550 meter broadcast band.

**EUREKA SCREEN GRID R. F. TRANSFORMERS**

**ILLUSTRATION F:—**  
Eureka No. 100 Coil Kit consisting of three matched r. f. coils, for 2-stage circuits. Price ..... **\$1.75**

Eureka No. 101 Coil Kit consisting of four matched r. f. coils, for 3-stage circuits. Price ..... **\$2.00**

These highly efficient screen grid circuit r. f. transformers are

space-wound on molded Bakelite forms, using enameled copper wire.

They are sold in matched sets consisting of an aerial coupler and r. f. transformers.

They can be used in practically all circuits employing Type 222, 224 and 232 screen grid tubes and also with the new variable mu, Types 235 and 551 tubes.

**PILOT SPACE-WOUND TRANSFORMERS**

**ILLUSTRATION G:—**  
Pilot Type 175, Space-Wound R. F. Transformers. Price per set of three coils. **\$1.50**

**ILLUSTRATION H:—**  
Pilot Type 176, Plug-In Type Space Wound R. F. Transformers. Price per set of three coils. **\$1.50**

The No. 175 and No. 176 r. f. transformers are the same electrically, the only difference between them being that the No. 176 units are provided with prongs for use as plug-in units. All coils are space-wound on molded Bakelite forms, 2 1/2" high and 1 3/4" in diameter. Their small size and confined magnetic field makes them ideally suited for use where space is limited. They are designed to tune from 200 to 550 meters with a .00035 mfd. variable condenser.



Illus. B

**OCTOCOIL PLUG-IN COILS**

**ILLUSTRATION B:—**  
Color Wavelength of Range Price Each  
Green 16 to 30 85c  
Brown 29 to 58 85c  
Blue 54 to 110 85c  
Red 103 to 225 85c  
Complete Set of 4 Octocoils—Green, Brown, Blue and Red to cover range from 16 to 225 meters. Price ..... **\$3.40**



Illus. C

The scientifically designed, ribbed forms are molded of genuine Bakelite and the coils are space-wound, using Nos. 12, 14, 16 and 25 enameled wire, to tolerances seldom attained in commercial production.

A rugged rim is provided to grasp the coils so as to prevent breakage in inserting or withdrawing the coils from their sockets.

The coils for different wavelength bands are distinguished by different colors. They are 3 3/8" high and 1 1/8" in diameter.

They should be used with .00015 mfd. variable condensers to cover the wavelength ranges indicated.

**BLANK COIL FORMS**

Blank Octocoil Winding Forms for experimenters. Price, each ..... **35c**

Octocoils represent the latest developments in the construction of efficient and rugged short wave coils.

**PILOT "WASP" PLUG-IN COILS**

**ILLUSTRATION J:—**  
Pilot No. 180-4, "Wasp" Short Wave Plug-In Coils. Set of 5 coils. Price ..... **\$4.45**

This set of coils consists of five plug-in coils, each coil designed to cover a separate wavelength range. The entire set, when used in a Pilot "Wasp" or similar straight regenerative

circuit, with a .00016 mfd. variable condenser will cover the range from 17 to 485 meters.

Each coil consists of a molded Bakelite ribbed form with a primary, secondary and tickler winding. The coils are fitted with a handy pull ring to make withdrawal from the socket easy and also to eliminate danger of breakage.

**PILOT SCREEN GRID PLUG-IN COILS**

**ILLUSTRATION E:—**  
Pilot No. 230 Screen Grid Plug-In Coil Kit consisting of one antenna coupler and three interstage transformers. Price ..... **\$4.00**

Circuits using the screen grid tubes require radio frequency transformers of special design.

The No. 230 combination, consisting of an antenna coupler and three interstage transformers is ideally suited for use where a receiver of very high sensitivity

is desired. The coils themselves are enclosed in aluminum cans, 2 1/2" in diameter and 3 1/2" high. Prongs, projecting through the insulating base connect to the terminals of the coils which are rigidly fastened inside the case. The antenna coupler fits into a 5-prong socket. The other coils fit into four prong sockets.

The 200 to 550 meter broadcast band is covered by using .00035 mfd. variable condensers with these coils.

**ROSENBLUM TRANSFORMER AND TUNER**

**ILLUSTRATION I:—**  
Rosenblum Three-Circuit Tuner. Price ..... **\$1.00**

**ILLUSTRATION K:—**  
Rosenblum R. F. Transformer. Price ..... **75c**

These units are the last word in transformers and three-circuit tuners. The three-circuit tuner consists of a primary, secondary and movable tickler coil winding. The winding forms are made of molded Bakelite. Rugged construction, high efficiency, interlocked rotor coil and shaft to prevent loosening are a few of the features of this unit.

The R. F. Transformer is designed for use with the tuner, but is suitable for practically all r. f. circuits requiring a high grade r. f. transformer. Both units are designed to cover the broadcast band with a .00035 mfd. variable condenser.



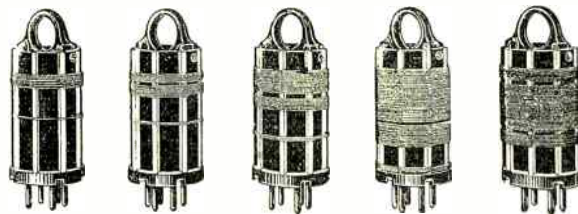
Illus. G



Illus. H



Illus. I



Illus. J



Illus. K

**KRESGE'S TREMENDOUS BUYING POWER AND EFFICIENT MERCHANDISING METHODS MAKE POSSIBLE THE EXCEPTIONAL VALUES OFFERED IN THIS CATALOG**

**RADIO FREQUENCY CHOKE COILS**

**HAMMARLUND R. F. CHOKE COIL**

**ILLUSTRATION A:—**  
Hammarlund No. RFC-85 R. F. Choke Coil. Inductance—85 millihenries. D. C. Resistance—215 ohms. Capacity—3 mmfds. Price ..... **\$1.25**

These choke coils are made by a special helical winding and impregnating process which

makes possible the formation of a large inductance with a minimum of distributed capacity. They have no resonant period within the broadcasting band. At the same time, their extremely low distributed capacity makes them exceptionally well suited for short wave work. They are sealed in a Bakelite case.

**HAMMARLUND SHIELDED R. F. CHOKE COIL**

**ILLUSTRATION G:—**  
Hammarlund No. SPC, 10-millihenry, Radio Frequency Choke Coil. Price ..... **\$1.00**

This shielded, polarized r. f. choke coil has proved its superiority for use in high-gain screen grid receivers.

The coil unit is shielded in an aluminum shell resulting in a construction that gives a minimum external field, permits close, compact design and eliminates undesirable coupling. It has no resonant peak within the broadcast band.

Polarity of winding is indicated on the unit.

**PILOT RADIO FREQUENCY CHOKE COIL**

**ILLUSTRATION H:—**  
Pilot No. 130 R. F. Choke Coil. Inductance 80 millihenries. Price ..... **50c**

This inexpensive radio frequency choke coil

is designed for use in broadcast and short wave receivers, and may be used effectively on wavelengths down to 20 meters.

Its distributed capacity is very low. It is 1" in diameter and 1 1/4" in height.

**EUREKA RADIO FREQUENCY CHOKE COIL**

**ILLUSTRATION B:—**  
Eureka No. 200 R. F. Choke Coil. Inductance—85 millihenries. Price ..... **25c**

This choke coil is made with an open honeycomb coil type winding which reduces distributed capacity to a minimum, giving very high choking effect on wavelengths down as low as 20 meters.

**AUDIO FREQUENCY TRANSFORMERS**

**PUSH-PULL AUDIO FREQUENCY TRANSFORMERS**

**INPUT TRANSFORMERS**

**ILLUSTRATION C:—**  
Dongan No. 5110 Push-Pull Input Audio Frequency Transformer. Price ..... **\$1.75**

**ILLUSTRATION K:—**  
Dongan No. 2130 Diatonik Push-Pull Input Audio Frequency Transformer. Price ..... **\$2.50**

**ILLUSTRATION F:—**  
Pilot No. 426 Push-Pull Input Audio Frequency Transformer. Price ..... **\$2.75**

The use of push-pull circuits, with the high grade push-pull transformers listed in this section make possible the highest quality reproduction possible, free from distortion. When these units are used in properly designed circuits, hum is reduced to an absolute minimum.

The Type 3111 push-pull output transformer is provided with both low and high impedance secondary windings so that it can be used to couple the output of the push-pull stage to

**OUTPUT TRANSFORMERS**

**ILLUSTRATION K:—**  
Dongan No. 2131 Diatonik Push-Pull Output Audio Frequency Transformer. Price ..... **\$2.50**

**ILLUSTRATION F:—**  
Pilot No. 427 Push-Pull Output Audio Frequency Transformer. Price ..... **\$2.75**

**ILLUSTRATION D:—**  
Dongan No. 3111 Push-Pull Output Audio Frequency Transformer, with low and high impedance secondaries. For 245 tubes. Price ..... **\$4.98**

either the low impedance voice coil of a dynamic speaker or to a high impedance magnetic speaker.

The other push-pull output transformers have high impedance secondary windings for coupling to standard magnetic speakers.

They can be used, however, with dynamic speakers which are provided with impedance matching coupling transformers.

**SINGLE STAGE OUTPUT TRANSFORMERS**

**ILLUSTRATION K:—**  
Dongan No. 2129 Diatonik Output Audio Frequency Transformer. Price ..... **\$2.50**

**ILLUSTRATION D:—**  
Dongan No. 3112 Output Transformer. Price ..... **\$4.98**

Because of the high current in the plate circuits of 171A and 245 power tubes, and the necessity for properly matching the output impedance of the power tube and the speaker, an output transformer should be employed to connect the speaker to the output of the power tube.

These output transformers are scientifically designed to give maximum efficiency. The No. 2129 unit can be used to couple the output of a 171A or 245 tube to a magnetic speaker.

The No. 3112 unit is provided with two secondary windings, one of low impedance for use when coupling to the voice coil of a dynamic speaker and the other of high impedance for use when coupling to a standard high impedance magnetic speaker.

**HIGH GRADE SINGLE STAGE A. F. TRANSFORMERS**

**ILLUSTRATION K:—**  
Dongan No. 2128, 3 to 1 Ratio Audio Frequency Transformer. Price ..... **\$2.00**

**ILLUSTRATION F:—**  
Pilot No. 423, 3 1/2 to 1 Ratio Audio Frequency Transformer. Price ..... **\$2.35**

While these transformers are among the leaders in quality of construction and reproduction, their cost is well within reasonable limits.

They are sturdily made with heavy cores and windings to reproduce faithfully all the audio frequencies which give natural reproduction. They are ideally suited for original and replacement use in the higher grade console sets.

**LOW COST SINGLE STAGE A. F. TRANSFORMERS**

**ILLUSTRATION J:—**  
Dongan No. 74, 3 to 1 Ratio Audio Frequency Transformer. Price ..... **\$1.00**

**ILLUSTRATION E:—**  
Pilot No. 413, 3 1/2 to 1 Ratio Audio Frequency Transformer. Price ..... **\$1.35**

**ILLUSTRATION I:—**  
Dongan No. 2127, 3 to 1 Ratio Audio Frequency Transformer. Price ..... **\$1.50**

**ILLUSTRATION J:—**  
Dongan No. 5164, 6 to 1 Ratio Audio Frequency Transformer. Price ..... **\$1.50**

**ILLUSTRATION C:—**  
Dongan No. 3177, 3 to 1 Ratio Audio Frequency Transformer. Price ..... **\$1.50**

The single stage transformers listed in this section are made by leaders in the manufacture of quality transformers at low cost.

These transformers represent the best values obtainable in high grade, inexpensive transformers. They are ideally suited for use as original equipment or replacements in midget sets and in inexpensive console models where low cost is an important factor.

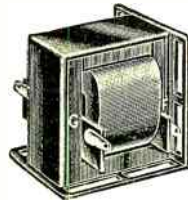
All of these units are enclosed in metal cases and are provided with suitable mounting means and terminals.



Illus. A



Illus. B



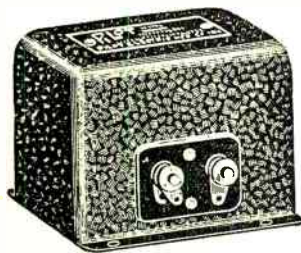
Illus. C



Illus. D



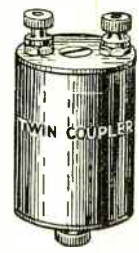
Illus. E



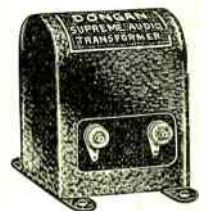
Illus. F



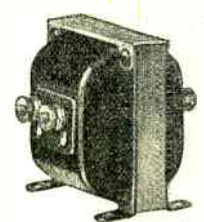
Illus. G



Illus. H



Illus. I



Illus. J



Illus. K

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION

The power transformers listed on this and the opposite page are made by the leading transformer manufacturers for original and replacement use in receivers and power units of every size and description.

The complete characteristics of each transformer, given in the charts, makes the selection of the proper transformer a simple matter, involving only a glance at the chart to determine the transformer having

windings of the proper voltage and current characteristics for any given application.

The units have been arranged into logical groups for convenience.

**POWER TRANSFORMERS FOR ORIGINAL OR REPLACEMENT USE**

Manufacturer and Type No.	Illus. No.	Primary Winding Voltage	Secondary Windings		For Tubes		Dimensions			Price	
			Total* Voltage Rating	Current Rating Amps.	Maximum No.	Types or Equivalent	Len.	Wid.	Hgt.	For 50-60 Cycles Stand.	For 25-30 Cycles Spec'l.

**Group 1: For Receivers with Single or Push-Pull 250 Power Amplifier Tubes**

Radiart No. FC-8	E	105,	950 C.T.	.140	2	231 (Plates)	4 3/4"	3 1/2"	4 1/8"	\$5.00	Not Available
		115,	7.5 C.T.	2.5	2	281 (Fil.)					
		125	7.5 C.T.	2.5	2	250					
		Taps	2.5 C.T.	8.75	6	224, 227, 235					

**Group 2: For Receivers with Single or Push-Pull 245 or 247 Power Amplifier Tubes**

Dongan No. 1951	H	110	750 C.T.	.125	1	280 (Plates)	4 5/8"	3 3/8"	4 1/2"	\$4.98	\$6.23
		to	5 C.T.	2.0	1	280 (Fil.)					
		120	2.5 C.T.	3.0	2	245, 247					
Radiart No. FME-2	C	No Taps	2.5 C.T.	10.5	6	224, 227, 235	3 3/8"	3 1/4"	3 1/2"	\$3.50	Not Available
		110	750 C.T.	.090	1	280 (Plates)					
		to	5	2.0	1	280 (Fil.)					
Radiart No. FB-2	B	120	2.45 C.T.	3.0	2	245, 247	4"	4"	6"	\$4.00	\$5.60
		Taps	2.5 C.T.	3.0	2	245, 247					
		2.5	10.5	6	224, 227, 235						
Radiart No. FC-4	E	105,	700 C.T.	.125	1	280 (Plates)	4 3/4"	3 1/2"	4 1/8"	\$4.00	\$5.60
		115,	5	2.0	1	280 (Fil.)					
		125	2.5 C.T.	3.0	2	245, 247					
Dongan No. 5951	L	Taps	2.5 C.T.	10.5	6	224, 227, 235	4"	3 3/4"	4 3/4"	\$4.50	\$6.30
		110	700 C.T.	.125	1	280 (Plates)					
		to	5	2.0	1	280 (Fil.)					
Dongan No. 7926	J	No Taps	2.5 C.T.	10.5	6	224, 227, 235	4"	4"	5 1/2"	\$4.50	\$6.30
		110	700 C.T.	.125	1	280 (Plates)					
		to	5	2.0	1	280 (Fil.)					
Pilot No. 411	A	120	2.5 C.T.	3.0	2	245, 247	5"	3"	5 1/2"	\$5.90	Not Available
		Taps	2.5	3.6	2	245, 247					
		2.5	12.0	7	224, 227, 235						

**Group 3: For Receivers with Single 245 or 247 Power Amplifier Tubes**

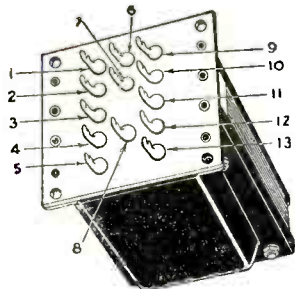
Dongan No. 7939	I	110	700 C.T.	.060	1	280 (Plates)	3 3/4"	3 1/8"	3 3/8"	\$3.00	\$4.20
		to	5	2.0	1	280 (Fil.)					
		120	2.5 C.T.	8.5	4	224, 227, 235					
Dongan No. 6949	L	No Taps	2.5 C.T.	8.5	4	224, 227, 235	3 1/8"	3 3/8"	3 3/4"	\$4.25	\$5.95
		110	700 C.T.	.060	1	280 (Plates)					
		to	5	2.0	1	280 (Fil.)					
Radiart No. FMC-2	C	120	2.5 C.T.	1.5	1	245, 247	3 3/8"	3 3/4"	3 3/4"	\$3.00	\$4.20
		Taps	2.5 C.T.	8.5	4	224, 227, 235					
		110	700 C.T.	.050	1	280 (Plates)					
Radiart No. FMB-2	C	120	2.45 C.T.	1.5	1	245, 247	3 3/4"	2 3/4"	2 1/8"	\$2.50	Not Available
		Taps	2.45 C.T.	7.0	4	224, 227, 235					
		110	700 C.T.	.045	1	280 (Plates)					

Note \*: Indicates total voltage across secondary windings. To find voltage each side of centertap divide by 2. C.T. indicates windings provided with centertap.

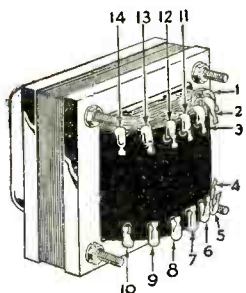
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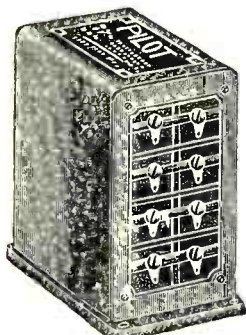
Illus. A



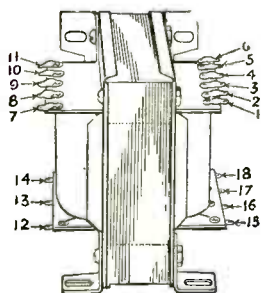
Illus. B



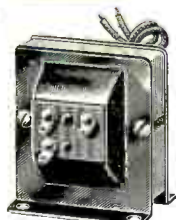
Illus. C



Illus. D



Illus. E



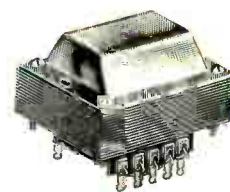
Illus. F



Illus. G



Illus. H



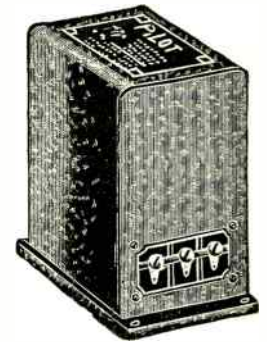
Illus. I

KRESGE'S TREMENDOUS BUYING POWER AND EFFICIENT MERCHANDISING METHODS MAKE POSSIBLE THE EXCEPTIONAL VALUES OFFERED IN THIS CATALOG

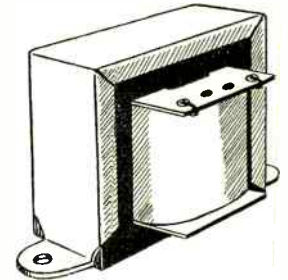


Manufacturer and Type No.	Illus. No.	Primary Winding Voltage	Secondary Windings		For Tubes		Dimensions			Price	
			Total* Voltage Rating	Current Rating Amps.	Maximum No.	Types or Equivalent	Len.	Wid.	Hgt.	For 50-60 Cycles Stand.	For 25-30 Cycles Spec'l.
<b>Group 4: For Receivers with Single or Push-Pull 112A or 171A Power Amplifier Tubes</b>											
Dongan No. 5910	L	110 to 120 No Taps	570 C.T.	.085	1	280 (Plates)	3 1/8"	3 3/8"	3 3/4"	\$4.25	\$5.95
			5	2.0	1	280 (Fil.)					
			5 C.T.	.5	2	112A, 171A					
			2.5 C.T.	1.75	1	224, 227, 235					
			1.5	4.2	4	226					
Dongan No. 7310	G	110 to 120 No Taps	550 C.T.	.085	1	280 (Plates)	4 5/8"	3 5/8"	4"	\$4.98	\$6.23
			5 C.T.	2.0	1	280 (Fil.)					
			5 C.T.	.5	2	112A, 171A					
			2.5 C.T.	1.75	1	224, 227, 235					
			1.5	4.2	4	226					
Radiart No. FC-6	E	105, 115, 125 Taps	550 C.T.	.085	1	280 (Plates)	4 3/4"	3 1/2"	4 1/8"	\$4.00	\$5.60
			5	2.0	1	280 (Fil.)					
			5 C.T.	.5	2	112A, 171A					
			2.5 C.T.	1.75	1	224, 227, 235					
			1.5 C.T.	4.24	4	226					
<b>Group 5: Filament Transformers</b>											
Dongan No. 6527	N	110 to 120 No Taps	5 C.T.	.5	2	112A, 171A	3"	5 1/2"	2 3/4"	\$3.25	\$4.07
			2.5 C.T.	1.75	1	224, 227, 235					
			1.5	4.2	4	226					
Pilot No. 407	D	110 to 120 No Taps	5	.5	2	112A, 171A	5"	3"	5 1/2"	\$4.00	Not Available
			2.5	3.6	2	245, 247					
			2.5	10.0	6	224, 227, 235					
Dongan No. 6957	F	110 to 120 No Taps	2.5 C.T.	3.5	2	224, 227, 235, 245, 247	2 5/8"	2 5/8"	3"	\$1.75	\$2.45
Dongan No. 6958	F	110 to 120 No Taps	5 C.T.	.5	2	112A, 171A	2 5/8"	2 5/8"	3"	\$1.75	\$2.45
<b>Group 6: Miscellaneous High Voltage and Filament Transformers</b>											
Dongan No. 7511	M	110 to 120 No Taps	550 C.T.	.085	1	280 (Plates)	3 3/8"	2 3/4"	3"	\$3.00	\$3.75
			5 C.T.	2.0	1	280 (Fil.)					
Radiart No. FMA-2	K	110 to 120 No Taps	165	.015			3 1/4"	2 3/4"	2"	\$2.00	Not Available
			2.5 C.T.	1.75	1	224, 227, 235, 245, 247					
			2.5 C.T.	3.5	2	245, 247					

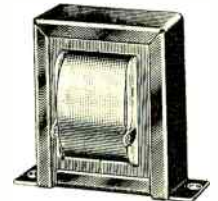
Note \*: Indicates total voltage across secondary windings. To find voltage each side of centertap divide by 2. C.T. Indicates windings provided with centertap.



Illus. R



Illus. Q



Illus. P

**HEAVY DUTY AUDIO AND POWER SUPPLY CHOKE COILS**

The chokes listed in this section are scientifically designed and sturdily built to give satis-

factory service in power supply filters, power tube outputs, audio filter circuits and other

applications requiring the use of high inductance and current capacity.

Manufacturer and Type No.	Price	First Section		Second Section		Illus. No.
		Ind. Henries	Current Cap. Ma.	Ind. Henries	Current Cap. Ma.	
Dongan No. 7930 Single Choke	\$1.50	10	115			P
Eureka No. 250 Single Choke	\$1.00	30	60			Q
Pilot No. 431 Double Choke.	\$1.00	25	90	35	45	R
Dongan No. 7512 Double Choke	\$3.50	30	85	30	85	O

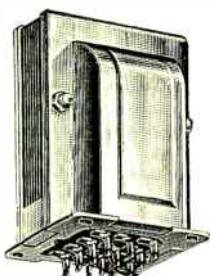
Inductance of chokes is higher when they are used at less than their maximum current carrying capacities.



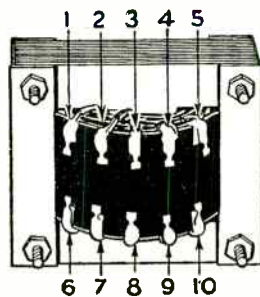
Illus. O



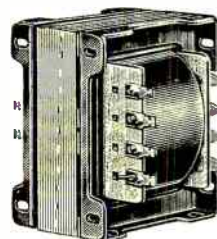
Illus. N



Illus. J



Illus. K

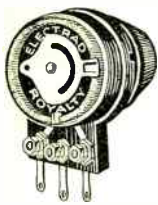


Illus. L

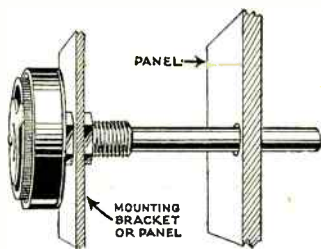


Illus. M

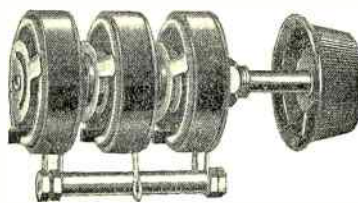
ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



Illus. A



Illus. B



Illus. C



Illus. D

**ELECTRAD ROYALTY POTENTIOMETERS AND VARIABLE RESISTORS**

**ILLUSTRATION A:—**  
Electrad Royalty Potentiometers and Variable Resistors. **\$1.00**  
Price, All Types, Each.

Resistance Range	Type	Safe Working Current
Ohms	No.	Milliamp.
0-2,000	F	37.5
0-5,000	K	23.0
0-10,000	G	16.5
0-25,000	H	10.5
0-50,000	C	7.5
0-100,000	B	5.0
0-200,000	J	4.0
0-500,000	E	2.5
0-700,000	D	2.0

**Megohms**  
0.7 A .2  
Royalty potentiometers and variable resistors are admirably suited for use wherever variable, long-wearing, high resistance, non-inductive potentiometers and variable resistors are required. All units are provided with three terminals, one connecting to the variable arm and the other two connecting to the ends of the resistance element. All three terminals are used when the units are to be employed as potentiometers. For use as a simple variable resistance only the variable arm terminal and one of the resistance element terminals should be used.

Each turn of wire is completely insulated from the others, the wire simply serving to establish the contact between the wiper arm and the resistance element.

The entire range of each unit is covered with less than one complete turn of the knob.

The illustration shows the long shaft assembly in use. The complete assembly consists of the contact arm, bushing, 2" shaft, thrust washer, spring washer and nuts.

The assembly is easily substituted for the standard contact arm and bushing assembly of any Royalty or Tonatron unit by loosening a single nut.

**ELECTRAD EXTENSION SHAFTS**

**ILLUSTRATION B:—**  
Electrad Extension Shaft. **25c**  
Price, complete

These extra length bushings and shafts are very handy for mounting Electrad Royalty Potentiometers and Variable Resistors on extra thick panels or when it is desired to mount the units away from the panel.

**ELECTRAD "T" PAD ATTENUATORS**

**ILLUSTRATION C:—**  
Electrad Royalty "T" Pad Attenuator, complete with instructions for use. **\$2.75**  
Price Each, All Types.

Impedance of Line	Use "T" Pad	Impedance of "T" Pad
Ohms	Type	Ohms
200	TR-200	200
500	TR-500	500
5,000	TR-5000	5,000

These Constant Impedance "T" Pad Attenuators are necessary for efficient volume control of microphones, electrical

phonographs, talking picture amplifiers and other sound amplifying and distribution systems.

Their design, construction and use is based on the well-known rule that to obtain maximum power from a generating source, the power absorbing medium should have an impedance equal to that of the generating source.

Their use gives much better results than the use of the usual potentiometer and variable resistance methods of volume control.

**ELECTRAD "L" PAD ATTENUATORS**

**ILLUSTRATION D:—**  
Electrad Super-Tonatron "L" Pad Attenuator, complete with instructions for use. **\$3.00**  
Price Each, All Types.

Impedance of Line	Use Super-Tonatron "L" Pad	Impedance of "L" Pad
Ohms <td>Type <td>Ohms</td> </td>	Type <td>Ohms</td>	Ohms
200	LS-200	200
500	LS-500	500
5,000	LS-5000	5,000

Since an "L" Pad Attenuator will often satisfactorily fill

the requirements for constant impedance volume control, the Electrad Super-Tonatron "L" Pad Attenuator has been designed for such use.

These units consist of two variable resistance elements of the Super-Tonatron type so connected together that single control is obtained with one element serving as a series resistor and the other as a shunt resistor.

**PILOT VOLUME CONTROLS**

**ILLUSTRATION H:—**  
Pilot Volumgrad Volume Control Potentiometers. **75c**  
Price, Each

Type No.	Resistance Range	Maximum Voltage*
940	0-50,000	140
941	0-100,000	200
942	0-200,000	280
945	0-500,000	450

Note\*: This is maximum voltage which can be applied safely across resistance element of potentiometer.

These variable high resistance potentiometers are designed especially for volume and oscillation control circuits.

Volume can be adjusted from zero to maximum with a single turn of the knob. The case is molded Bakelite, 2" in diameter. The variable arm is insulated from the shaft to permit the unit to be mounted on metal panels if desired. The maximum watt dissipation of these units is 1/2 watt.



Illus. E



Illus. F



Illus. G



Illus. H



Illus. I

**CENTRALAB REPLACEMENT VOLUME CONTROLS**

Since much of the trouble experienced with receivers is due to faulty volume controls, the following line of Centralab high grade volume controls fills a long-felt want.

In addition to providing suitable replacement units, a few well-chosen units can be

used as a complete kit of variable resistors for servicing receivers. All of these units employ the efficient and noiseless Centralab rocking disc contact and are fitted with long shafts. They are compact in size to fit any receiver.

**ABBREVIATIONS USED IN TABLES**

Complete information on the characteristics and uses of these units is contained in the Centralab Volume Control Guide, a description of which will be found on page 31 of this catalog.

L. H.—Resistance increases with clockwise rotation.

**ABBREVIATIONS USED IN TABLES**

R. H.—Resistance increases with counterclockwise rotation.

Sym.—Symmetrical Taper.

Max. Res.—Maximum Resistance.

Cent. Res.—Resistance reading at center position or half turn.

Inf.—Infinite Resistance.

**CENTRALAB JUNIOR RADIOHM REPLACEMENT VOLUME CONTROLS**

**ILLUSTRATION E:—**  
(Except with two terminals.)  
Centralab Junior Radiohm Replacement Volume Controls.

Price, Each **\$1.35**

Type No.	Max. Res. Ohms	Cent. Res. Ohms	Taper
70-200	Inf.	200	L.H.
70-201	Inf.	3,000	L.H.
70-202	75,000	3,000	R.H.
70-203	500,000	35,000	R.H.

The No. 70-200 is designed for use as a shunt resistance volume control across antenna or r.f. transformer primary.

The No. 70-201 is for use as a shunt resistance across tuned grid circuits.

The No. 70-202 is for use as a variable r. f. grid bias resistor.

The No. 70-203 is for use as a variable voltage control in series in r. f. plate leads.

**CENTRALAB JUNIOR POTENTIOMETER REPLACEMENT VOLUME CONTROLS**

**ILLUSTRATION E:—**  
Centralab Junior Potentiometer Replacement Volume Controls.

Price, Each **\$1.35**

Type No.	Max. Res. Ohms	Cent. Res. Ohms	Taper
72-100	10,000	1,000	L.H.
72-102	15,000	3,000	R.H.
72-102	25,000	2,500	L.H.
72-103	50,000	25,000	Sym.

The Nos. 72-100 and 72-102 units are designed for use as antenna or r. f. transformer primary shunt controls.

The No. 72-103 is for use as a variable voltage control in the screen grid lead.

The No. 79-006 has a special taper and grounded bushing and is designed for combined control of antenna and "C" bias.

**CENTRALAB TWIN JUNIOR REPLACEMENT VOLUME CONTROLS**

**ILLUSTRATION F:—**  
Centralab Twin Junior Replacement Volume Controls.

Price, Each **\$2.25**

These units consist of two matched units, insulated from each other but mounted together for operation from the same shaft. No. 74-515 is for Temple Sets. No. 74-600 is for Victor 1929-30 replacements.

Type No.	Max. Res. Ohms	Cent. Res. Ohms	Taper
74-515	10,000	5,000	Sym.
74-600	4,000	300	L.H.
74-600	4,000	300	L.H.

These units consist of two matched units, insulated from each other but mounted together for operation from the same shaft. No. 74-515 is for Temple Sets. No. 74-600 is for Victor 1929-30 replacements.

Type No. 74-515 Twin Control Front 10,000 5,000 Sym. Rear 500,000 125,000 L.H.

Type No. 74-600 Twin Control Front 4,000 300 L.H. Rear 4,000 300 L.H.

**FROST VOLUME CONTROLS**

**ILLUSTRATION G:—**  
Frost Volume Control Potentiometers.

Price, Each **50c**

No. 890—	0 to 50,000 Ohms.
No. 891—	0 to 100,000 Ohms.
No. 892—	0 to 200,000 Ohms.
No. 895—	0 to 500,000 Ohms.

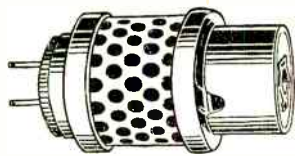
dividual cartons, complete with Bakelite insulating discs and fibre washers so that they can be mounted on metal panels without grounding the shell terminal to the panel. They are supplied without knobs.

These high grade metal shell variable high resistance potentiometers are furnished in individual cartons, complete with Bakelite insulating discs and fibre washers so that they can be mounted on metal panels without grounding the shell terminal to the panel. They are supplied without knobs.

**PILOT VARIABLE HIGH RESISTANCE**

**ILLUSTRATION I:—**  
Pilot No. 350, 40 to 10,000,000 Ohm Resistograd Variable High Resistance.

Price **50c**  
This unit has a "jumpless" range from 40 ohms to 10 megohms, which is covered in four turns of the knob, giving a smooth, even control. The resistance element is absolutely non-inductive and non-packing. It is rated at 20 watts. The case is ribbed to radiate the heat generated during normal operation. The unit is furnished complete with knob.



Illus. A

**VITROHM LINE VOLTAGE REDUCERS**

**ILLUSTRATION A:—**  
Ward Leonard Type 507-109 (Red Label) Vitrohm Line Voltage Reducer for use with sets, the input of which does not exceed 65 watts and 0.6 amperes.

Price ..... **\$1.50**

Ward Leonard Type 507-109A (Green Label) for use with sets of more than 66 watts, 0.6 ampere, but less than 130 watts, 1.2 ampere.

Price ..... **\$1.50**

Ward Leonard Type 507-109B (Blue Label) for use with sets of more than 130 watts, 1.2 amperes, but less than 285 watts, 2.6 amperes.

Price ..... **\$1.75**

Radio receivers, made for operation from the power lines, are designed, usually, to operate at a predetermined line voltage. Where the line voltage exceeds the arbitrary value assumed by the set manufacturer, damage to the a-c tubes may result, unless means are used to reduce the line voltage to a value, or to one below that, at which the set is designed to operate.

Ward Leonard Vitrohm Line Voltage Reducers are designed to reduce the voltage of the power source to that required by the receiver.

**INSULINE LINE VOLTAGE CONTROL**

**ILLUSTRATION D:—**  
Insuline Type No. 99 Resistovolt.

Price ..... **\$1.00**

(See Page 8 for description of the Insuline Antennavolt combination Resistovolt and Antenna Plug.)

This unit is designed to eliminate tube burnouts due to excessive line voltage. It is

made for use with receivers using over six tubes and will automatically keep the voltage supply constant over a wide range of fluctuations.

The Resistovolt should be plugged into an electrical outlet and the receiver plug inserted into the Resistovolt receptacle.

**EUREKA COMBINATION VARIABLE RESISTANCE AND SWITCH**

**ILLUSTRATION F:—**  
Eureka No. 800 Combination 3,000-ohm Variable Resistance and a-c Snap Switch.

Price ..... **\$1.00**

This variable wire-wound resistance unit and switch is ideally suited for use as a

variable grid bias resistance or for any other purpose where a variable resistance capable of carrying safely, a current of 35 milliamperes is required.

The switch is sturdily built for a. c. switching use.

**CENTRALAB GIANT RHEOSTAT**

**ILLUSTRATION G:—**  
Centralab No. 48-151, 150-ohm, 50 watt Giant Rheostat and Potentiometer.

Price ..... **\$1.50**

This sturdy rheostat and potentiometer may be used

wherever a heavy duty rheostat or potentiometer of this resistance value is required.

It is ideally suited for use as a speed control rheostat for television motors.

**FROST RHEOSTATS AND POTENTIOMETERS**

**ILLUSTRATION H:—**  
Frost Type 200 Rheostats, available in resistance values of 6, 10, 20 and 30 ohms.

Price, Each ..... **25c**

Frost Type 204 Potentiometer, 400 ohms.

Price ..... **25c**

Frost Type 204 Potentiometer, 10,000 ohms.

Price ..... **40c**

These rugged, well-designed and well-built units are available in resistance values to

suit all standard rheostat and potentiometer requirements.

Exactly the same construction is used in both rheostats and potentiometers except that rheostats have two terminals and potentiometers have three terminals.

They are furnished in individual cartons, complete with Bakelite bushings and fibre washers for mounting on metal panels if desired. Knobs are not included.



Illus. B

**LIN-A-TROL LINE VOLTAGE CONTROLS**

**ILLUSTRATION B:—**  
Lin-A-Trol Automatic Line Voltage Controls, complete with mounting sockets and instructions for connecting.

Price, Each ..... **\$2.00**

**Lin-A-Trol**

**Recommendations**

For Sets Having Input Rating of Approximately	Use Lin-A-Trol Type
55 watts	No. 5-L-5
65 watts	No. 6-L-5
75 watts	No. 7-L-5
90 watts	No. 8-L-5
100 watts	No. 9-L-5
110 watts	No. 10-L-5
120 watts	No. 11-L-5
130 watts	No. 12-L-5

The Lin-A-Trol Automatic Line Voltage Control regulates both low and high voltage with equal efficiency. It contains a specially designed controlling element enclosed in a glass bulb.

This controlling element automatically changes in resistance as the line voltage varies so that under all line voltage conditions between 100 and 135 volts, the Lin-A-Trol maintains set voltage and current absolutely within the limits required for proper and safe set performance and operation.

Lin-A-Trols can be mounted easily in any radio set.



Illus. D



Illus. E

**AMPERITE AUTOMATIC FILAMENT VOLTAGE CONTROLS**

**ILLUSTRATION C:—**  
Amperite Automatic Filament Voltage Controls.

Price, Each ..... **65c**

**Amperite Recommendations**

Type of Tube Rated	Proper Volt. Source	Type
5.0	.25 6.0	1A
5.0	.5 6.0	112
5.0	.75 6.0	3A
5.0	1.0 6.0	4A
5.0	.132 6.0	622
2.0	.06 6.0	6-30
2.0	.13 6.0	6-31
3.3	.06 6.0	6V-199
3.3	.06 4.0	4V-199
3.3	.06 4.5	4V-199
1.5	1.05 1.5+	226
2.5	1.75 2.5+	227

Two or more tubes of similar filament characteristics connect

ed in parallel count as one tube having a current rating equal to the total of the tubes that are connected in parallel.

Amperite automatic filament voltage controls have been recognized as the outstanding method for keeping tubes operating at maximum efficiency and reducing the cost of tube replacements due to premature decrease in performance because of the application of excessive voltage to the filaments.

The use of Amperites in place of other methods of filament control guarantees the perfect regulation required to bring the utmost in clarity, volume and tone quality out of the tubes under every varying battery and filament voltage supply condition.



Illus. F



Illus. G

**MUTER TUBESTAT FIXED RHEOSTAT**

**ILLUSTRATION E:—**  
Muter Tubestat Fixed Rheostat for Filament Control.

Price, Each ..... **25c**

Type No. 1700 for use with one 201A tube on 6 volts.  
Type No. 1702 for use with two 201A tubes on 6 volts.  
Type No. 1725 for use with one 222 tube on 6 volts.

These units consist of a permanent resistance wire, hermetically sealed in a glass tube, and are recommended for reducing the voltage of an "A" battery source to the filament voltage required by the tube when the filament voltage of the tube is not critical to slight variations.



Illus. H



Illus. I

**PILOT ADJUSTABLE RESISTANCE**

**ILLUSTRATION I:—**  
Pilot Adjustograd, Adjustable Fixed Resistor, 0 to 1,000 ohms, Type 1001.

Price ..... **25c**

This compact adjustable resistance is intended for use as an oscillation suppressor in

tuned r. f. circuits. The resistance element is wound with Nichrome wire and is housed in a molded Bakelite shell. The unit is adjusted by means of a screw projecting through the top of the case.

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION

**ELECTRAD ADJUSTABLE RESISTORS**

**ILLUSTRATION H:—**  
Electrad Type B, Adjustable Fixed Resistors.  
Size—2" long.  
Rating—25 Watts.

**STANDARD VALUES**

Type No.	Res. Ohms	Price
B-20	2,000	59c
B-50	5,000	59c
B-100	10,000	69c

These Electrad Truvolt Adjustable Fixed Resistors are especially recommended for use in eliminators and power packs.

Through the use of the sliding clip feature the units can be adjusted to any exact re-

**ILLUSTRATION H:—**  
Electrad Type D, Adjustable Fixed Resistors.  
Size—6" long.  
Rating—75 Watts.

**STANDARD VALUES**

Type No.	Res. Ohms	Price
D-20	2,000	\$1.25
D-50	5,000	\$1.25
D-80	8,000	\$1.50
D-100	10,000	\$1.50

quired value within the limits of the resistors.

By using additional sliding clips, intermediate values (taps) can be obtained.

This feature makes them especially valuable in service and experimental work.



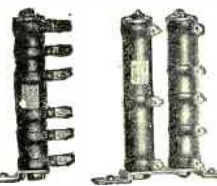
Illus. A



Illus. B



Illus. C

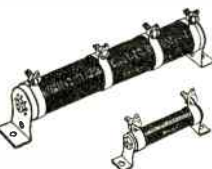


Illus. D

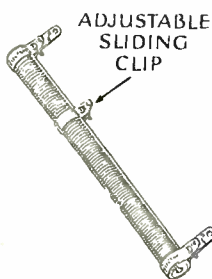
Illus. E



Illus. F



Illus. G



Illus. H

**AEROVOX PYROHM RESISTORS**

**ILLUSTRATION A:—**  
Aerovox Type 992, Pyrohm Vitreous Enamel Fixed Resistors.  
Size—2" x 7/16" Overall.  
Rating—15 Watts.  
Price, Each ..... **45c**

**STANDARD VALUES**

Ohms	Ohms	Ohms
300	700	1,200
350	750	1,250
400	800	1,500
500	1,000	1,750
650	1,100	2,000

Aerovox Type 994, Pyrohm Vitreous Enamel Fixed Resistors.

Size—4" x 7/16" Overall.  
Rating—32 Watts.

**STANDARD VALUES**

Resistance	Price Each
500	60c
1,000	60c
1,500	60c
2,000	60c
2,500	60c
3,000	60c
4,000	60c
5,000	60c
6,000	75c
8,000	75c
10,000	75c

Aerovox Type 996, Pyrohm Vitreous Enamel Fixed Resistors.  
Size—6" x 3/4" Overall.  
Rating—100 Watts.

**Resistance**

Ohms	Price Each
500	\$1.00
1,000	\$1.00
1,500	\$1.10
2,000	\$1.10
2,500	\$1.00
3,000	\$1.00
4,000	\$1.00
5,000	\$1.00
6,000	\$1.00
7,500	\$1.00
8,000	\$1.00
10,000	\$1.00
15,000	\$1.00
25,000	\$1.25
30,000	\$1.25
35,000	\$1.25

Aerovox Pyrohm Vitreous Enamel Resistors are made of the best grade resistance wire, wound on a refractory tube and coated with a porcelain enamel which is fired on and protects the wire against moisture, oxidation and mechanical injury. The ends of the wire are brazed to the terminals to insure positive contact.

**ELECTRAD ADJUSTABLE SLIDING CLIPS**

**ILLUSTRATION H:—**  
Electrad Adjustable Sliding Resistor Clips.  
Price, Each ..... **5c**

These adjustable clips may be slipped over Electrad Type B and Type D units to take off taps at any desired intermediate values.

**ELECTRAD FLEXIBLE RESISTORS**

**ILLUSTRATION J:—**  
Electrad Type 2G, Flexible Fixed Resistors.  
Length—6" with pigtails.  
Rating—3 Watts.  
Price, Each ..... **30c**

**STANDARD VALUES**

Type No.	Resist. Ohms	Max. Current Ma.
2G-100	100	173
2G-500	500	77
2G-750	750	63
2G-1000	1,000	54
2G-1500	1,500	44
2G-2000	2,000	38
2G-5000	5,000	24

These resistors are wire-wound on a flexible core and covered with impregnated fabric. Pigtail terminals are provided at each end. They form a very handy unit for laboratory, experimental and replacement use, since they can

**ILLUSTRATION J:—**  
Electrad Type 3G, Flexible Fixed Resistors.  
Length—12" with pigtails.  
Rating—6 Watts.  
Price, Each ..... **60c**

**STANDARD VALUES**

Type No.	Resist. Ohms	Max. Current Ma.
3G-2000	2,000	54
3G-3000	3,000	44
3G-4000	4,000	38
3G-10000	10,000	24

be bent or coiled into almost any desired shape.

They are especially suited for repairing an open section in a voltage divider or tapped resistor, since the unit can be coiled around the core of the open section and the ends of the unit soldered to the terminals of the open section.

**AEROVOX RESISTOR MOUNTINGS**

**SMALL MOUNTINGS**

Type	Illus.	Price Each
H1	B	10c
H2	C	15c
V1	D	10c
V2	E	15c

**LARGE MOUNTINGS**

Type	Price
HH1	B 25c
HH2	C 25c
VV1	D 15c
VV2	E 25c

Aerovox Pyrohm Resistor mountings are available in four distinct types as illustrated, with a small and large size unit in each type.

The small size mountings are designed for use with the Type 992 and 994 Pyrohm Resistors. The large size units are for use with the Type 996 Pyrohms.

**PILOT VOLTAGE DIVIDER RESISTOR**

**ILLUSTRATION G:—**  
(Upper Tapped Unit).  
Pilot Type 960 Voltage Divider Tapped Resistor.  
Price ..... **75c**

This voltage divider is for use with any "B" power pack designed to give an output of

180 to 220 volts d. c. at the output of the filter chokes.

Taps are provided for lower voltages. The unit is wound with Nichrome wire on a porcelain tube and is impregnated with a black elastic coating to protect the unit against dampness and corrosion.

**ELECTRAD VOLTAGE DIVIDERS**

**ILLUSTRATION K:—**  
Electrad Type C245 B-2, Tapped Voltage Divider. Designed for use in power packs to operate 245 amplifiers. The complete unit consists of two Type C, Electrad Truvolt units mounted on an insulating bracket. It has a total resistance of 14,700 ohms, divided into seven sections, adjustable to any desired values by means of the sliding clips.  
Price ..... **\$1.75**

**ILLUSTRATION L:—**  
Electrad Type 250 B-3, Tapped Voltage Divider. Designed for use in power packs to operate 210 or 250 amplifiers. The complete unit consists of three Type C, Electrad Truvolt units mounted on an insulating bracket. The total resistance is 21,000 ohms divided into eight sections, adjustable to any required values by means of the sliding clips.  
Price ..... **\$2.50**

**FROST WIRE-WOUND RESISTORS**

**ILLUSTRATION F:—**  
Frost Wire-Wound Suppressor and Bias Resistors.  
Price, Each ..... **15c**

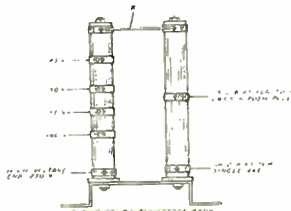
**STANDARD VALUES**

Ohms	Ohms	Ohms
750	1,250	2,000
1,000	1,500	2,250

These resistance units are

wound on die-cut flexible Bakelite. Tinned copper terminal brackets are clamped on to the resistance element under heavy pressure and "staked" into the Bakelite strip.

They are ideally suited for use as grid suppressors and grid bias resistors.



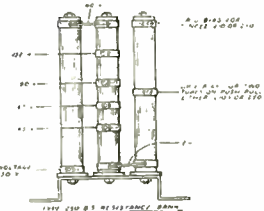
Illus. K



Illus. I



Illus. J



Illus. L

**ILLUSTRATION I:—**  
Muter Candohm Resistors.  
**STANDARD VALUES**

Type No.	Resist. Ohms	Watts Rating	Price Each
CG-20	20	1 1/2	10c
CG-40	40	1 1/2	10c
CG-60	60	1 1/2	10c
G-100	100	1 1/2	10c
G-200	200	1 1/2	10c
G-300	300	1 1/2	10c
G-500	500	1 1/2	10c
G-1000	1,000	1 1/2	10c

These resistance units are practical, durable, efficient, accurate and have a liberal heat dissipating ability. They are

**MUTER CANDOHM RESISTORS**

**STANDARD VALUES**

Type No.	Resist. Ohms	Watts Rating	Price Each
F-100	100	2 1/2	15c
F-200	200	2 1/2	15c
F-300	300	2 1/2	15c
F-500	500	2 1/2	15c
F-750	750	2 1/2	15c
F-1000	1,000	2 1/2	15c
F-2500	2,500	5	20c
F-5000	5,000	5	25c
F-10000	10,000	7 1/2	25c
F-20000	20,000	10	25c

very popular as replacement units and are used extensively by radio servicemen.

**INTERNATIONAL  
GRID LEAK TYPE FIXED RESISTORS**

**ILLUSTRATION A:**—  
International Type MR-4, Grid  
Leak Type Fixed Resistors.  
Dimensions—2"x½" Overall.  
Rating—2 Watts. **20c**  
Price, Each

STANDARD VALUES		
Ohms	Ohms	Ohms
50	2,250	15,000
75	2,500	20,000
100	3,000	25,000
150	3,500	30,000
200	4,000	40,000
250	5,000	50,000
500	6,000	75,000
750	7,000	100,000
1,000	7,500	125,000
1,250	8,000	150,000
1,500	9,000	175,000
1,750	10,000	200,000
2,000	12,500	250,000

**ILLUSTRATION A:**—  
International Type MF-4,  
Grid Leak Type Fixed Resis-  
tors.  
Dimensions—2"x¾" Overall.  
Rating—1 Watt. **15c**  
Price, Each

STANDARD VALUES		
Ohms	Ohms	Megohms
500	10,000	.1
750	15,000	.2
1,000	20,000	.25
1,500	25,000	.3
2,000	40,000	.5
2,500	50,000	1.0
3,000	60,000	2.0
5,000	75,000	3.0
6,000	cont. in	5.0
	Megohm	7.0
	Column	10.0

**INTERNATIONAL  
PRECISION FIXED RESISTORS**

**ILLUSTRATION B:**—  
International Type WW-1,  
Precision Fixed Resistors.

STANDARD VALUES	
Resistance	Price Each
Ohms	
10,000	\$1.50
50,000	\$1.50
100,000	\$2.00
200,000	\$2.00
400,000	\$3.00
500,000	\$3.00

These resistors are de-  
signed to meet the exacting  
requirements of units for use  
as multipliers in extending  
the range of voltmeters and

**ILLUSTRATION A:**—  
International Type MF-4½,  
Grid Leak Type Fixed Resis-  
tors.  
Dimensions—1"x¼" Overall.  
Rating—½ Watt. **15c**  
Price, Each

STANDARD VALUES		
Ohms	Ohms	Ohms
500	5,000	50,000
1,000	20,000	75,000

International Resistors  
have long enjoyed an en-  
viable reputation in the  
Radio Industry because of  
their high quality, uniform-  
ity, freedom from noise in  
operation, conservative rat-  
ing and ability to stand up  
without change in charac-  
teristics even under the severest  
operating conditions.

Thousands of servicemen  
have learned the value of  
standardizing on Interna-  
tional Resistances for origi-  
nal and replacement use.  
(See page 31 for the de-  
scription of the International  
Resistor Replacement Guide,  
a remarkable service book  
that simplifies and speeds up  
set repairing.)

All International MF-4½,  
MF-4 and MR-4 units are  
furnished complete with pig-  
tail leads. These leads may  
be clipped off when the resis-  
tors are to be used in  
standard grid leak mount-  
ings.

millimeters, and for use as  
fader or attenuation units,  
bridge arms, ohmmeters  
and other similar testing in-  
struments where a high de-  
gree of accuracy and con-  
sistency of characteristics in  
service are required.

They are wire-wound non-  
inductively and are thorou-  
ghly impregnated. Special  
processes eliminate the possi-  
bility of open terminal contacts  
or shorted turns.

They are warranted to an  
accuracy of 1% of marked  
value.

**MUTER GRID LEAK TYPE FIXED RESISTORS**

**ILLUSTRATION E:**—  
Muter Type 700 Series Grid  
Leak Type Resistors. **10c**  
Price, Each

STANDARD VALUES		
Meg- ohms	Meg- ohms	Meg- ohms
.1	1.0	3.0
.25	2.0	5.0

Muter Grid Leak Type

Fixed Resistors consist of a  
permanent resistance element,  
hermetically sealed in a sub-  
stantial glass tube.

They are fitted with nick-  
eled brass end caps and will  
fit all standard grid leak  
mountings.

They are individually test-  
ed and are guaranteed ac-  
curate.

**FROST ADJUSTABLE  
HUM BALANCING POTENTIOMETERS**

**ILLUSTRATION I:**—  
Frost Type 106, 6-ohm Hum  
Balancer.  
Frost Type 120, 20-ohm Hum  
Balancer. **20c**  
Price, Each

These rugged, compact  
units are designed especially  
to smooth out the a-c ripple  
in a-c tube receivers. They  
are used in place of center-

tapped fixed resistors, to  
permit adjustment of the tap  
to the best point for hum-  
free operation.

They are provided with a  
slotted shaft and may be ad-  
justed with a screwdriver.  
They may be mounted in any  
convenient place on the sub-  
panel or chassis.



Illus. A



Illus. B



Illus. C



Illus. D



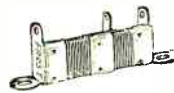
Illus. E



Illus. F



Illus. G



Illus. H

**AEROVOX  
GRID LEAK TYPE FIXED RESISTORS**

**ILLUSTRATION C:**—  
Aerovox Type 1092 Metal-  
ohm Fixed Resistors. **10c**  
Price, Each

**ILLUSTRATION D:**—  
Aerovox Type 1090 Fixed  
Resistors. **10c**  
Price, Each

STANDARD VALUES		
Type 1090 and 1092	Meg- ohms	Meg- ohms
.1	2.0	6.0
.25	3.0	7.0
.5	3.5	8.0
.75	4.0	9.0
1.0	5.0	10.0

Aerovox Grid Leak Type  
Fixed Resistors are made in  
two types. The Type 1090  
units are made by impreg-

nating a special insulating  
material with a high grade  
resistance compound. The  
resistance element is fitted  
with metal ends and sealed  
in a glass tube with metal  
caps.

The Type 1092 units are  
built around an element  
which consists of a metallic  
deposit on a glass rod and  
sealed in a glass tube. The  
properties of the deposit used  
permits the use of a sub-  
stantial coating which is ca-  
pable of carrying, without  
change in resistance, the cur-  
rents used in resistance and  
impedance coupled amplifiers.

Both types are permanent,  
accurate and noiseless.

**AEROVOX CARBON FIXED RESISTORS**

**ILLUSTRATION F:**—  
Aerovox Type 1094, Carbon  
Fixed Resistors.  
Dimensions—1¾" x ¼"  
Overall. **20c**  
Price, Each

STANDARD VALUES		
Ohms	Ohms	Ohms
500	7,500	100,000
750	9,000	150,000
1,000	10,000	200,000
1,500	12,500	250,000
2,000	15,000	300,000
2,500	20,000	350,000
3,000	25,000	500,000
5,000	50,000	1,000,000
	75,000	

These carbon resistors are  
the latest development in  
non-inductive resistors de-  
signed for comparatively  
heavy duty service.

The end pieces are force-  
fitted to the resistance ele-  
ment to prevent noisy oper-  
ation.

The wire leads are made  
of soft, tinned copper wire  
and are attached so that  
they can be bent in any di-  
rection without danger of  
breakage.

The wire leads can be  
clipped off to permit the unit  
to be mounted in any stand-  
ard grid leak mounting.

**AEROVOX LAVITE FIXED RESISTORS**

**ILLUSTRATION G:**—  
Aerovox Type 1098, Lavite  
Non-Inductive Fixed Resistors.  
Size—1 27/32" x ½" Over-  
all. **50c**  
Max. Rating—3 Watts  
Price, Each

STANDARD VALUES		
Ohms	Ohms	Ohms
1,000	20,000	100,000
2,000	25,000	200,000
5,000	30,000	250,000
10,000	50,000	500,000
15,000	75,000	

Aerovox Lavite Non-  
inductive Resistors are ideally

sued for use wherever a  
non-inductive resistor of com-  
paratively high current car-  
rying capacity is required.

The resistance element  
consists of a heavy deposit  
on a corrugated insulating  
rod, fitted with metal contact  
ends.

They are standard in size  
to fit any standard grid leak  
mounting. The metal ends  
are threaded to take 4/36  
screws which can be used for  
mounting on subpanels.

**GRID LEAK RESISTOR MOUNTINGS**

**ILLUSTRATION L:**—  
Aerovox Type 1049, Single  
Resistor Mounting. **15c**  
Price

**ILLUSTRATION M:**—  
Aerovox Type 1050, Double  
Resistor Mounting. **25c**  
Price

**ILLUSTRATION K:**—  
Muter Type 825, Single Re-  
sistor Mounting. **10c**  
Price

The Aerovox and Muter

grid leak mountings listed in  
this section meet every re-  
quirement for efficient oper-  
ation.

The bases are made of  
molded Bakelite to prevent  
losses from leakage between  
terminals and the springs  
are made of phosphor bronze  
to hold the grid leaks firmly  
and give good contact.

In using grid leak type re-  
sistors, it is important to  
select a good mounting.

**CENTER-TAPPED FIXED RESISTORS**

**ILLUSTRATION H:**—  
Frost Center-Tapped Fixed  
Resistors. Available in values  
of 6, 10 and 20 ohms total  
resistance. **20c**  
Price, Each

**ILLUSTRATION J:**—  
Pilot Center-Tapped Fixed  
Resistors. Available in values  
of 10, 20, 50 and 75 ohms  
total resistance. **15c**  
Price, Each

Muter Candohm Center-Tap-  
ped Fixed Resistors. Type CG.  
Available in resistance values  
of 20, 40 and 60 ohms total  
resistance. **10c**  
Price, Each

These center-tapped fixed  
resistors are specially de-  
signed for use across a-c tube  
filaments to obtain the elec-  
trical center of such fila-  
ments.



Illus. I



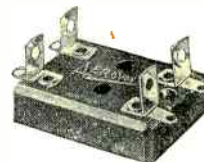
Illus. J



Illus. K



Illus. L



Illus. M

**ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY  
AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION**



Illus. A



Illus. B



Illus. C

**AEROVOX MICA MOULDED CONDENSERS**



Illus. D

**ILLUSTRATION A:—**  
Aerovox Type 1450 Mica Moulded Condensers. Retest Voltage—1,000 volts D. C.

Standard Capacities Mfds.	Price Each
.00007; .0001; .00015; .0002; .00025; .0005; .001.....	20c
.002; .005; .006.....	25c
.01 .....	40c

**ILLUSTRATION D:—**  
Aerovox Type 1475 Mica Moulded Condensers, with Grid Leak Mounting Clips. Retest Voltage—1,000 volts D. C.

Standard Capacities Mfds.	Price Each
.0001; .00015; .00025; .0005.....	25c

**ILLUSTRATION E:—**  
Aerovox Type 1460 Mica Moulded Condensers, Retest Voltage—600 volts D. C.

Standard Capacities Mfds.	Price Each
.00005; .0001; .0002; .00025; .00035; .0005; .001; .002.....	10c

Aerovox Mica Condensers are moulded in genuine Bakelite, which seals and protects the condenser element against extreme temperatures, moisture or chemical action. The dielectric is of

the finest grade India Ruby Mica, the plates are tinfoil and the condenser element is thoroughly impregnated. The capacity of the element is pre-determined by a patented process. The Type 1450 units are standard for all applications where the ability to stand comparatively high voltages is important. The Type 1475 units

are the same as the Type 1450 units in every respect except that they are provided with grid leak mounting clips. The Type 1460 condensers are designed for use in lower voltage circuits where low cost and compactness are very important considerations. In every other respect they are the same as the Types 1450 and 1475 in quality.

**MUTER TINYMOLD AND METAL END MICA CONDENSERS**



Illus. E



Illus. F

**ILLUSTRATION B:—**  
Muter No. 350 Series, Tinymold Mica Moulded Condensers.

Standard Capacities Mfds.	Price Each
.0001; .00025; .0005; .001; .002 .....	10c

Note: The .00025 mfd. unit is furnished with grid leak mounting clips.

**ILLUSTRATION C:—**  
Muter No. 600 Series, Metal End Mica Condensers.

Standard Capacities Mfds.	Price Each
.0001; .00025; .0005; .001; .002 .....	20c
.006 .....	25c
.01 .....	39c

Muter Tinymold Mica Condensers are made with a molded Bakelite casing which protects the units against moisture and mechanical injury. Muter Metal End Mica Condensers are constructed of carefully selected, uniform mica and brass electrodes which are retained under even pressure by Bakelite plates.

**AEROVOX BYPASS CONDENSERS**

Aerovox Bypass Condensers are available in three general types specially suited for bypass and light duty filter work. The Type 250 and 350 units consist of non-inductive sections of high insulation resistance, sealed in attrac-

tive, moulded Bakelite cases. They are ideal for use in radio and audio frequency bypass circuits, for resistance and impedance coupled amplifiers or for any other purpose where a compact, high insulation resistance, non-inductive condenser is required. The Bakelite case prevents leakage between terminals and accidental grounds between the terminals and the case. The Type 200-S, 300-S, 400-S, 207, 307 and 407 General Purpose Condensers consist of thoroughly impreg-

nated, non-inductive sections sealed in metal cans and provided with convenient terminals and mounting feet. The 200-S, 300-S and 400-S units are designed for flat mounting while the 207, 307 and 407 units are designed for mounting on end.



Illus. G



Illus. H

AEROVOX GENERAL PURPOSE CONDENSERS				
Flat Mounting Type				
Type No.	Cap. Mfds.	D.C. Work. Volt.	Illus. No.	Price
200-S	.05	200	G	\$ .25
200-S	.1	200	G	\$ .25
200-S	.25	200	G	\$ .40
200-S	.5	200	G	\$ .40
200-S	1.0	200	G	\$ .60
200-S	2.0	200	G	\$1.00
200-S	4.0	200	G	\$1.75
300-S	.05	300	G	\$ .35
300-S	.1	300	G	\$ .35
300-S	.25	300	G	\$ .50
300-S	.5	300	G	\$ .60
300-S	1.0	300	G	\$ .75
300-S	2.0	300	G	\$1.25
400-S	.05	400	G	\$ .35
400-S	.1	400	G	\$ .50
400-S	.25	400	G	\$ .50
400-S	.5	400	G	\$ .75
400-S	1.0	400	G	\$1.00
400-S	2.0	400	G	\$1.50

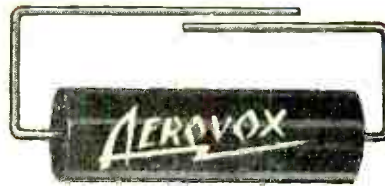
AEROVOX BAKELITE CASE CONDENSERS				
Type No.	Cap. Mfds.	D.C. Work. Volt.	Illus. No.	Price
250	.05	200	F	\$ .40
250	.1	200	F	\$ .40
250	.25	200	F	\$ .40
250	.5	200	F	\$ .60
250	1.0	200	F	\$ .60
350	.05	300	F	\$ .40
350	.1	300	F	\$ .40
350	.25	300	F	\$ .60
350	.5	300	F	\$ .60

AEROVOX GENERAL PURPOSE CONDENSERS				
Upright Mounting Type				
Type No.	Cap. Mfds.	D.C. Work. Volt.	Illus. No.	Price
207	.05	200	H	\$ .25
207	.1	200	H	\$ .25
207	.25	200	H	\$ .40
207	.5	200	H	\$ .40
207	1.0	200	H	\$ .60
207	2.0	200	H	\$1.00
207	4.0	200	H	\$1.75
307	.05	300	H	\$ .35
307	.1	300	H	\$ .35
307	.25	300	H	\$ .50
307	.5	300	H	\$ .60
307	1.0	300	H	\$ .75
307	2.0	300	H	\$1.25
407	.05	400	H	\$ .35
407	.1	400	H	\$ .50
407	.25	400	H	\$ .50
407	.5	400	H	\$ .75
407	1.0	400	H	\$1.00
407	2.0	400	H	\$1.50

KRESGE'S TREMENDOUS BUYING POWER AND EFFICIENT MERCHANDISING METHODS MAKE POSSIBLE THE EXCEPTIONAL VALUES OFFERED IN THIS CATALOG



Illus. A



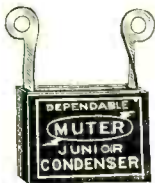
Illus. B



Illus. C



Illus. D



Illus. E



Illus. F



Illus. G



Illus. H

The paper condensers listed on this page are all non-inductively wound, using high grade dielectric material, carefully tested to prevent any possibility of breakdown when the units are used at their rated working voltages.

All of the units listed are ideally suited for use as bypass, buffer, coupling and filtering condensers in power supply, radio frequency and audio frequency circuits requiring units of the capacity and voltage characteristics indicated.

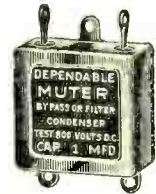
The Aerovox condensers shown in Illustrations F, G, and H; the Potter con-

densers shown in Illustrations J, K, L and M and the Muter condensers shown in Illustration I are all hermetically sealed in drawn metal containers provided with handy mounting feet. Terminals in these units are brought out through insulating strips centered in large holes in the cans to prevent leakage and short circuits to the cans.

The Aerovox condensers shown in Illustrations A and B and the Potter condensers shown in Illustration C are sealed in insulating tubes.

The units shown in Illustrations A and C are provided with convenient mounting feet which also serve as the terminals of the units. The Aerovox unit shown in Illustration B is provided with wire leads by means of which it can be hung from and connected to the receiver wiring.

The Potter Multi-Use units shown in Illustration D and the Muter Postage Stamp Type units shown in Illustration E are designed for use where low cost, very compact units are required.



Illus. I



Illus. J



Illus. K



Illus. L



Illus. M

Type No.	Cap. Mfd.	D.C. Work Volt.	D.C. Test Volt.	Price
<b>AEROVOX TUBULAR COND. TYPE-70. ILLUS. A</b>				
270	.01	200	400	\$ .25
270	.015	200	400	\$ .25
270	.02	200	400	\$ .25
270	.03	200	400	\$ .25
270	.05	200	400	\$ .25
270	.1	200	400	\$ .40
470	.01	400	800	\$ .35
470	.015	400	800	\$ .35
470	.02	400	800	\$ .40
470	.05	400	800	\$ .40
470	.1	400	800	\$ .40
<b>AEROVOX TUBULAR COND. TYPE-80. ILLUS. B</b>				
280	.006	200	400	\$ .20
280	.01	200	400	\$ .20
280	.02	200	400	\$ .20
280	.03	200	400	\$ .20
280	.05	200	400	\$ .20
280	.1	200	400	\$ .20
280	.25	200	400	\$ .25
280	.5	200	400	\$ .25
480	.006	400	800	\$ .20
480	.01	400	800	\$ .20
480	.02	400	800	\$ .20
480	.03	400	800	\$ .20
480	.05	400	800	\$ .25
480	.1	400	800	\$ .25
480	.25	400	800	\$ .35
480	.004	600	1200	\$ .20
680	.006	600	1200	\$ .20
680	.01	600	1200	\$ .20
680	.02	600	1200	\$ .20
680	.03	600	1200	\$ .20
680	.05	600	1200	\$ .25
680	.1	600	1200	\$ .25
1080	.004	1000	2000	\$ .20
1080	.006	1000	2000	\$ .25
1080	.01	1000	2000	\$ .25
1080	.02	1000	2000	\$ .25
1080	.03	1000	2000	\$ .25
1080	.05	1000	2000	\$ .25
<b>POTTER TUBULAR COND. MULTI-USE TYPE. ILLUS. D</b>				
	.02		1500	\$ .20
	.06		1500	\$ .20
<b>POTTER TUBULAR COND. EXTRA-DUTY TYPE. ILLUS. C</b>				
	.1	250	500	\$ .50
<b>MUTER JUNIOR COND. NO. 500 SERIES. ILLUS. E</b>				
551	.01	400		\$ .25
552	.02	400		\$ .25
553	.03	400		\$ .25
554	.04	400		\$ .25
555	.05	400		\$ .25

Type No.	Cap. Mfds.	D.C. Work Volt.	Illus. No.	Price
<b>AEROVOX BYPASS COND</b>				
260	.05	200	F	\$ .25
260	.1	200	F	\$ .25
260	.25	200	F	\$ .35
260	.5	200	F	\$ .35
261	1.0	200	G	\$ .50
261	2.0	200	G	\$ .85
360	.05	300	F	\$ .30
360	.1	300	F	\$ .35
360	.25	300	F	\$ .45
361	.5	300	G	\$ .50
361	1.0	300	G	\$ .75
460	.05	400	F	\$ .35
460	.1	400	F	\$ .50
461	.25	400	G	\$ .50
461	.5	400	G	\$ .60
461	1.0	400	G	\$ .85
461-21	.1-1	400	H	\$ .75
461-31	.1-1-1	400	H	\$1.00
461-225	.25-.25	400	H	\$ .75
<b>POTTER BYPASS COND.</b>				
A-1	.1	160	J	\$ .40
A-2	.25	160	J	\$ .50
A-3	.5	160	J	\$ .50
AA-3	.5	160	L	\$ .69
A-3-3	.5-.5	160	M	\$ .69
A-4	1.0	160	K	\$ .60
AA-4	1.0	160	L	\$ .60
A-103	.5	200	K	\$ .60
AA-103	.5	200	L	\$ .60
A-301	.1	400	J	\$ .60
AA-302	.25	400	L	\$ .69
AA-303	.5	400	L	\$ .85
A-401	.1	500	J	\$ .69
<b>MUTER BYPASS COND.</b>				
525	.1	400	I	\$ .25
506	.25	200	I	\$ .25
507	.5	200	I	\$ .25
508	1.0	200	I	\$ .39

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



**AEROVOX DRY ELECTROLYTIC CONDENSERS**

The dry characteristics of Aerovox Hi-Farad Dry Electrolytic Condensers makes it possible to mount them in any position, upright, inverted or horizontal without danger of spilling or leakage. They are furnished complete with universal mounting rings.

The high filtering action of these units (equivalent per microfarad to that of paper condensers), their low cost and compact design makes it pos-

sible to use higher capacity in filter and audio bypass circuits resulting in better filtering, improved tone quality and marked reduction in hum.

Their self-healing and surge-proof characteristics prevent damage to the condensers from high voltage surges.

Because of their polarized feature they should be used only on rectified a. c. or pulsating d. c. circuits. They must not be used on raw a. c. circuits.

**AEROVOX DRY "A" ELECTROLYTIC CONDENSERS**

Aerovox 6A-Type and E12-Type "A" Power Dry Electrolytic Condensers were developed to meet the demand for efficient, low voltage, high capacity units for use in the filter circuits of "A" eliminators for operation of d. c. tube filaments from rectified a. c. or pulsating d. c. sources.

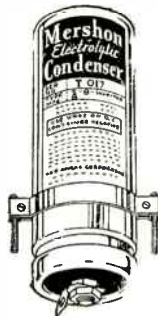
They are also ideally suited for use across the field windings of low voltage dynamic speakers to eliminate the hum due to imperfect filtering. It is important that their peak voltage ratings be not exceeded.

**MERSHON ELECTROLYTIC CONDENSERS**

Mershon Electrolytic Condensers are available in the most commonly used capacities and combinations to suit the requirements of any power supply requirement. They are proved products backed by twenty years of experience

in electrolytic condenser development and ten years of service in radio.

Both upright and inverted units are furnished complete with mountings. Upright units are also supplied complete with covers.



**STANDARD ELECTROLYTIC CONDENSERS**

Type No.	Type of Mounting	Cap. of Sections Mfds.	Total Cap. Mfds.	Max. Peak Volt.	Max. Work. Volt.	Overall Dimensions Len. Dia.	Price
<b>AEROVOX DRY ELECTROLYTIC CONDENSERS</b>							
E5-2	Universal	2	2	500	450	3" 1 3/8"	\$ .75
E5-22	Universal	2-2	4	500	450	4 1/2" 2 1/2"	\$1.00
E5-222	Universal	2-2-2	6	500	450	4 1/2" 3"	\$2.50
E5-2222	Universal	2-2-2-2	8	500	450	4 1/2" 3"	\$3.00
E5-4	Universal	4	4	500	450	3" 1 3/8"	\$1.00
E5-44	Universal	4-4	8	500	450	4 1/2" 2 1/2"	\$1.75
E5-444	Universal	4-4-4	12	500	450	4 1/2" 3"	\$2.50
E5-4444	Universal	4-4-4-4	16	500	450	4 1/2" 3"	\$3.00
E5-5	Universal	5	5	500	450	4 1/2" 1 3/8"	\$1.00
E5-55	Universal	5-5	10	500	450	4 1/2" 2 1/2"	\$2.00
E5-555	Universal	5-5-5	15	500	450	4 1/2" 3"	\$2.50
E5-5555	Universal	5-5-5-5	20	500	450	4 1/2" 3"	\$3.25
E5-6	Universal	6	6	500	450	4 1/2" 1 3/8"	\$1.00
E5-66	Universal	6-6	12	500	450	4 1/2" 2 1/2"	\$2.00
E5-666	Universal	6-6-6	18	500	450	4 1/2" 3"	\$3.00
E5-6666	Universal	6-6-6-6	24	500	450	4 1/2" 3"	\$3.25
E5-8	Universal	8	8	500	450	4 1/2" 1 3/8"	\$1.00
E5-88	Universal	8-8	16	500	450	4 1/2" 2 1/2"	\$2.00
E5-888	Universal	8-8-8	24	500	450	4 1/2" 3"	\$3.00
E5-8888	Universal	8-8-8-8	32	500	450	4 1/2" 3"	\$3.50
E5-248	Universal	2-4-8	14	500	450	4 1/2" 2 1/2"	\$3.00
E5-2816	Universal	2-8-16	26	500	450	4 1/2" 3"	\$3.25
E5-10	Universal	10	10	500	450	3" 2 1/2"	\$1.75
E5-12	Universal	12	12	500	450	3" 2 1/2"	\$1.75
E5-14	Universal	14	14	500	450	3" 3"	\$1.75
E5-16	Universal	16	16	500	450	3" 3"	\$2.00
E5-20	Universal	20	20	500	450	4 1/2" 2 1/2"	\$3.00
E5-30	Universal	30	30	500	450	4 1/2" 3"	\$3.25
E100-10	Universal	10	10	115	100	3" 1 3/8"	\$1.25
E100-50	Universal	50	50	115	100	4 1/2" 1 3/8"	\$2.00
E100-100	Universal	100	100	115	100	4 1/2" 2 1/2"	\$3.25
E25-10	Universal	10	10	25	20	3" 1 3/8"	\$1.00
E25-50	Universal	50	50	25	20	3" 1 3/8"	\$1.25
E12-1500	Universal	1500	1500	12	10	4 1/2" 2 1/2"	\$2.00
E12-2000	Universal	2000	2000	12	10	4 1/2" 2 1/2"	\$2.50
E12-4000	Universal	4000	4000	12	10	4 1/2" 3"	\$4.00
6A-2000	Upright	2000	2000	12	10	5 1/2" x 4 1/2" x 1 1/2"	\$2.25
6A-4000	Upright	4000	4000	12	10	5 1/2" x 4 1/2" x 2 1/2"	\$3.00

**MERSHON ELECTROLYTIC CONDENSERS**

S-8 Upr.	Upright	8	8	400	340	4 1/8" 1 3/4"	\$1.25
S-8 Inv.	Inverted	8	8	400	340	4 1/8" 1 3/8"	\$1.25
S-18 Upr.	Upright	18	18	400	340	4 1/8" 1 3/4"	\$1.75
S-18 Inv.	Inverted	18	18	400	340	4 1/8" 1 3/8"	\$1.75
D-8 Upr.	Upright	8-8	16	400	340	4 1/8" 2 1/2"	\$2.25
T-8 Upr.	Upright	8-8-8	24	400	340	4 1/8" 3"	\$3.50

**EUREKA ELECTROLYTIC CONDENSERS**

400	Inverted	8	8	500	430	4 1/2" 1 1/4"	\$1.00
401	Universal	8-8	16	575	450	4 1/2" x 3" x 1"	\$2.00

**PAPER CONDENSER FILTER BLOCKS**

**AEROVOX PAPER CONDENSER FILTER BLOCKS**

**ILLUSTRATION A:**—  
Aerovox Type A-400 Filter Condenser Block consisting of one 2-mfd., 400 volts d. c. working voltage section and two 2-mfd., 300 volts d. c. working voltage sections. Price ..... **\$3.75**

Aerovox Condenser blocks consist of non-inductively wound paper filter condenser sections sealed together in a single can and connected together

**ILLUSTRATION A:**—  
Aerovox Type B-400 Filter Condenser Block consisting of one 2-mfd., 400 volts d. c. working voltage section and two 4-mfd., 300 volts d. c. working voltage sections. Price ..... **\$5.00**

with one terminal common to each section. They are for use in power supply units designed for a 280 rectifier and 171A power tubes.

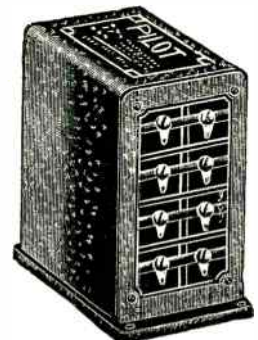
**PILOT PAPER CONDENSER FILTER BLOCK**

**ILLUSTRATION B:**—  
Pilot No. 421 Filter Condenser Block. Total capacity—11 mfd., consisting of one 2-mfd., 400 volts d. c. working voltage rating section, one 3-mfd., 400 volts d. c. working voltage section, one 3-mfd., 300 volts d. c. working voltage section and three 1-mfd., 300 volts d. c. working voltage sections. Price ..... **\$4.98**

This Pilot filter condenser block is especially designed for use with the Pilot No. 411 power transformer and Pilot No. 431 double choke units but it may be used in any other power supply and bypass circuit requiring a block of the same characteristics. The Filter condenser block is enclosed in a handsome steel case, finished in black Japanese lacquer.



Illus. A

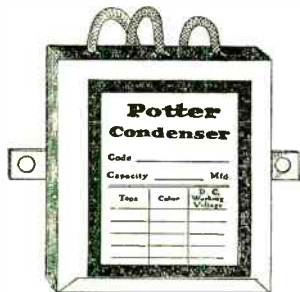


Illus. B





Illus. A



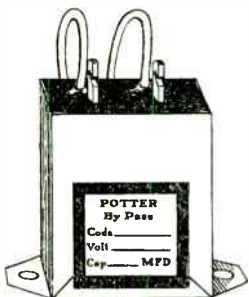
Illus. B



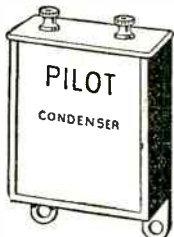
Illus. C



Illus. D



Illus. E

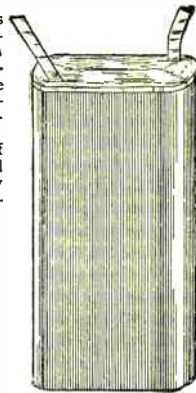


Illus. F

**REPLACEMENT CONDENSER SECTIONS**

The condenser units listed in this section are designed for use in replacing blown condenser sections in standard receiver and power unit assemblies. They are all non-inductively wound and thoroughly impregnated and sealed to protect them against moisture and mechanical injury. The Aerovox Replacement Condenser Sections listed are in every respect the same as the sections used in Aerovox mounted condensers. The only difference is that they are sealed in cardboard boxes instead of metal cans for economy and convenience for replacement use.

The Potter Replacement Condenser Cartridges are coated with a hard, black wax which thoroughly seals them and protects them from moisture. They are made of the best materials available to produce long and dependable life. Each cartridge carries a label giving instructions covering the repair of filter condenser blocks. The Muter Replacement Condensers consist of standard Muter condenser sections doubly sealed in a special protective compound and ready for use to replace blown out sections in standard power packs.



Illus. G



Illus. H



Illus. I



Illus. J

Type No.	Cap. Mfds.	D.C. Work. Volt.	Dimensions in inches	Price
<b>AEROVOX REPLACEMENT CONDENSERS ILLUSTRATION A</b>				
200-SU	.5	200	2 1/8 x 1 1/8 x 1/8	\$ .30
200-SU	1.0	200	2 1/8 x 1 1/8 x 3/8	\$ .45
200-LU	1.0	200	4 5/8 x 1 3/8 x 1/2	\$ .45
200-SU	2.0	200	2 1/8 x 1 1/8 x 1 1/8	\$ .75
400-SU	1.0	400	2 1/2 x 1 1/4 x 1 1/8	\$ .75
600-LU	1.0	600	4 5/8 x 2 x 3/4	\$ .75
1000-LU	1.0	1000	4 5/8 x 2 1/8 x 1 1/8	\$1.25
<b>MUTER REPLACEMENT CONDENSERS ILLUSTRATION H</b>				
545C	1.0	200	4 1/2 x 1 3/4 x 1/4	\$ .35
565C	1.0	400	4 1/2 x 1 3/4 x 3/8	\$ .55
575C	1.0	600	4 1/2 x 1 3/4 x 7/8	\$ .75

Cap. Mfds.	D.C. Work. Volt.	Dimensions in inches	Price
<b>POTTER REPLACEMENT COND. ILLUSTRATION G</b>			
.1	200	1 1/8 x 1 1/8 x 1/4	\$ .20
.25	200	1 1/8 x 1 1/8 x 1/4	\$ .25
.5	200	1 1/8 x 1 1/8 x 3/8	\$ .30
1.0	200	1 1/8 x 1 1/8 x 1/2	\$ .50
1.0	200	2 3/4 x 1 1/4 x 1/2	\$ .50
2.0	200	1 1/8 x 1 1/8 x 1 1/8	\$ .60
2.0	200	2 3/4 x 1 1/8 x 1/2	\$ .60
1.0	400	2 3/4 x 2 x 1/2	\$ .69
2.0	400	3 7/8 x 2 1/4 x 3/8	\$ .85
1.0	600	3 7/8 x 2 1/4 x 3/8	\$ .85
2.0	600	3 7/8 x 3 1/8 x 1	\$1.75
2.0	600	5 x 2 3/8 x 1/2	\$1.75
1.0	1000	3 7/8 x 3 1/8 x 1 1/8	\$1.25
1.0	1000	5 x 2 3/8 x 1/2	\$1.25

**POTTER CONDENSER SEALING WAX**

Potter No. 1 Condenser Sealing Wax. Price, per pound **15c**

In repairing condenser blocks, it is very important to seal the sections in the containers in order to eliminate any danger of damage from

moisture and mechanical injury. Potter No. 1 sealing wax, available in handy one-pound packages is especially designed for such work. Complete instructions on how to use it are included in each package.

**POTTER REPLACEMENT CONDENSER UNITS FOR POPULAR FACTORY-BUILT SETS**

**ILLUSTRATION B:**—Potter Type 5497 Replacement Block, for replacement use in Atwater Kent Models 40, 42, 46, 52, 37, 38 and 39. Atwater Kent Part No. 9497. Consists of three .25 mfd. sections. Price **85c**

**ILLUSTRATION C:**—Potter Type 5180 Replacement Unit, for replacement use in Atwater Kent battery sets. Atwater Kent Part No. 9575. Consists of one .25 mfd. section. Price **85c**

Potter Type 5665 Replacement Unit, for replacement use in Radiola Models Nos. 16, 17, 41, 50, 60 and 62. Consists of one 1.2 mfd. section. (Not Illustrated.) Price **\$1.00**

**ILLUSTRATION D:**—Potter Type 5553 Replacement Unit, for replacement use in Majestic No. 90B Receiver. Consists of one .5 mfd. section. Price **85c**

**ILLUSTRATION E:**—Potter Type SM-30-B Replacement Block for replacement use in Silver-Marshall No. 30 Receiver. Consists of three .1 mfd. sections. Price **75c**

These condensers are designed for replacement use in standard receivers and power packs and are specially designed to fit into such units. They can be installed in receivers at a lower cost than would be required to replace the blown out sections.

**STANDARD FILTER AND BYPASS CONDENSERS**

The following bypass and filter condenser units are designed to meet all bypass and filter requirements of radio frequency, audio frequency and power supply circuits requiring the use of comparatively high capacity condensers capable of withstanding the voltages ordinarily met with in such circuits.

They are all non-inductively wound, thoroughly

impregnated, sealed in metal cans and provided with convenient terminals and mountings.

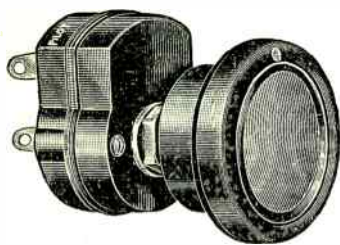
Any number of individual sections can be arranged in a group of uniform appearance for circuits requiring several capacities.

They are all conservatively rated and have a high factor of safety for continuous operation at their rated voltages without danger of breakdown.

Type No.	Cap. Mfds.	D.C. Work. Volt.	Illus. No.	Price
<b>AEROVOX FILTER CONDENSERS</b>				
202	1.0	200	I	\$ .75
202	2.0	200	I	\$1.00
202	4.0	200	I	\$1.75
302	1.0	300	I	\$ .85
302	2.0	300	I	\$1.25
302	4.0	300	I	\$2.00
402	1.0	400	I	\$1.00
402	2.0	400	I	\$1.50
402	4.0	400	I	\$2.50
602	1.0	600	I	\$1.50
602	2.0	600	I	\$2.25
602	4.0	600	I	\$4.00

Type No.	Cap. Mfds.	D.C. Work. Volt.	Illus. No.	Price
<b>MUTER FILTER CONDENSERS</b>				
566	2.0	400	I	\$ .75
575	1.0	600	J	\$ .75
<b>PILOT BYPASS AND FILTER CONDENSERS</b>				
801	1.0	180	F	\$ .39
9302	2.0	300	—	\$ .75
9501	1.0	500	—	\$ .75

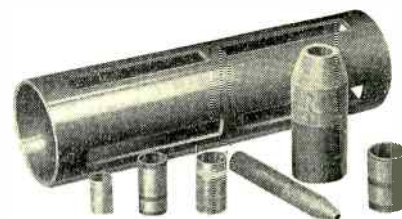
ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



Illus. A



Illus. F



Illus. G

**GOODRICH OR HOOD HARD RUBBER PANELS**

All Goodrich and Hood hard rubber panels are 7" wide and 3/16" thick.  
 Length 12" 18" 21" 24" 28"  
 Price \$.60 \$.90 \$1.05 \$1.20 \$1.40  
 Hood Panels not available in 28" size.

rich and Hood panels is the best insulating material obtainable for radio use. This type of hard rubber provides a fine smooth surface, an insulation of minimum losses and a material which can be cut and drilled with ease without chipping.

**ALUMINUM GOODS MFG. CO. ALUMINUM PANELS**

All aluminum panels are 7" wide and are made of No. 8 gauge Aluminum (approximately 1/8" thick).  
 Length 12" 15" 18" 21" 24"  
 Price \$.60 \$.75 \$.90 \$1.05 \$1.20

These aluminum panels are made of the best grade aluminum and provide high conductivity, light weight and maximum rigidity. Their use as panels and subpanels makes possible the construction of modern, compact, light weight, easily wired receivers.

**SPAULDING BAKELITE TUBING**

ILLUSTRATION G:—  
 Spaulding Rolled Bakelite Tubing. Available in 2 1/2", 3 1/2" and 4 1/2" lengths in the following outside diameters:—1"; 1 1/4"; 1 1/2"; 1 3/4"; 2"; 2 1/4"; 2 1/2"; 2 3/4"; 3"; 3 1/4" and 3 1/2".  
 Prices of different diameters are the same for equal lengths.

Spaulding Rolled Bakelite Tubing is produced by an improved process that gives the tubing all the advantages and none of the disadvantages of molded tubing.

It is made from sheets of fine grained stock, impregnated throughout and rolled into a dense, homogeneous structure that is resistant to chipping, bending and breaking.

It retains its shape under abnormal stress and pressure.

**HEAVY DUTY SNAP SWITCHES**

ILLUSTRATION A:—  
 Pilot Type 44 Knob Control Snap Switch. **35c**  
 Price  
 Pilot Type 46 Toggle Lever Control Snap Switch. Same as Type 44 but with toggle lever instead of knob control. **30c**  
 Price

ILLUSTRATION B:—  
 Frost Type 21349, H & H, 3-point, Single Pole, Double Throw Toggle Switch. **25c**  
 Price  
 Frost Type AC609 H & H Single Pole, Single Throw Toggle Switch. **25c**  
 Price

These single-hole mounting snap switches have been designed to meet the exacting requirements of present day receiver and power

circuits and can be used to make and break standard voltage power circuits with absolute safety.

**MUTER MIDGET KNIFE SWITCHES**

ILLUSTRATION M:—  
 Muter Type 900, Single Pole, Single Throw Midget Knife Switch. **10c**  
 Price  
 ILLUSTRATION N:—  
 Muter Type 925, Single Pole, Double Throw Midget Knife Switch. **10c**  
 Price

ILLUSTRATION O:—  
 Muter Type 950, Double Pole, Double Throw Midget Knife Switch. **25c**  
 Price  
 These tiny switches have countless applications in general or experimental radio work. They may be used for battery chargers, switching from long to short antenna, speaker to televisor and in all types of test apparatus.

**REPLACEMENT RECTIFIER UNITS**

ILLUSTRATION C:—  
 B-L Electric Mfg. Co. Type C-210 Single Wave, 2 1/2 ampere rectifier with double connector in screw type base. **\$3.25**  
 Price

of practically every charger and power unit.  
 The B-L Type C-210 units are designed for replacement use on low voltage chargers and "A" eliminators drawing not more than 2 1/2 amperes and using a transformer whose secondary does not exceed 25 volts. They may be used as replacements for bulb type rectifiers of similar rating.

ILLUSTRATION D:—  
 Chemitron Rectifier Cells. **55c**  
 Price per jar

The Chemitron Rectifier Cells are specially designed for use as replacements in Philco Types A and AA, "A" and "B" eliminators. They are also suitable for use in Willard, Exide, Vesta, Ferbend, Balkite B and other similar eliminators which employ chemical rectifier cells.

Price per set of 4 jars. **\$2.20**

G. E. 2-ampere Tungar Tube Rectifiers are the ideal replacement units for Tungar 2-ampere battery chargers and "A" eliminators using double-contact screw base.

ILLUSTRATION E:—  
 G. E. 2-ampere Tungar Rectifier Tube. New Style Type. **\$3.50**  
 Price

For Raytheon and Vacuum Tube Rectifiers See Chart on Back Cover of This Catalog.

This series of rectifier units has been carefully selected to meet the rectifier requirements

**SIGNAL TELEGRAPH INSTRUMENTS**

ILLUSTRATION H:—  
 Signal Type R-68 Key and High Frequency Buzzer Code Practice Set. **\$2.50**  
 Price

The Type R-68 practice set has been designed especially for amateurs, boy scouts and others who are interested in learning the code or improving their speed. It consists of a sturdy telegraph key and a high frequency buzzer which gives a pleasing signal tone. The code is printed on a little brass plate fastened to the base.

ILLUSTRATION I:—  
 Signal Type M-112 Key and Sounder Code Practice Set. **\$3.25**  
 Price

The Type M-112 practice set employs a sounder instead of a buzzer and is intended for those who wish to become accustomed to the signal sounds obtained in signal offices using a standard sounder.

ILLUSTRATION J:—  
 Signal Type 112-K Junior Key. **\$1.65**  
 Price

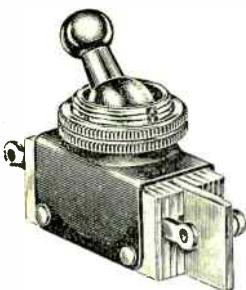
All units are made in accordance with approved practice. Nickelplated key levers, enameled key bases and frames, coin silver contacts and aluminum sounding bars make these units attractive in appearance and efficient in operation.

ILLUSTRATION K:—  
 Signal Type 112-S Telegraph Sounder, Resistance—4 ohms. **\$2.00**  
 Price

The buzzers are adjustable and are enclosed in black, crystallized finished cases.

ILLUSTRATION L:—  
 Signal Type R-60 High Frequency Adjustable Buzzer. Resistance—2 ohms. **89c**  
 Price

These units are ideally suited for both practice and actual telegraph line construction.



Illus. B



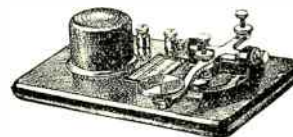
Illus. C



Illus. D



Illus. E



Illus. H



Illus. I



Illus. J



Illus. K



Illus. L



Illus. M



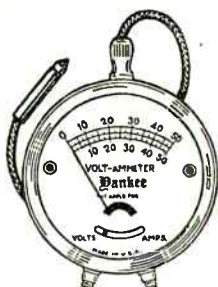
Illus. N



Illus. O



Illus. A



Illus. B

**YANKEE PLUG-IN TEST METERS**

**ILLUSTRATION H:—**  
Yankee No. 264, 0 to 300 volts d. c. for taking plate voltage readings at tube sockets.  
Price ..... **\$2.00**  
Yankee No. 265, 0 to 8 volts a. c. for taking filament voltage readings at tube sockets.  
Price ..... **\$1.75**  
**ILLUSTRATION F:—**  
Yankee No. 267, 5-prong adapter for use with No. 264 and No. 265 plug-in meters when testing in 5-prong sockets.  
Price ..... **50c**

These plug-in test meters are designed to simplify the taking of voltage readings at tube sockets without the necessity of getting to the connections under the chassis.

All that is necessary to take a reading at the tube is to remove the tube and insert the wood and Bakelite handle into the tube socket.

The meters are sturdily built and are provided with unbreakable crystals and new zero adjustment.

**INSULINE TEST LEADS**

**ILLUSTRATION D:—**  
Insuline Type 355, Set of Two Test Leads with Tip Prods and Terminals.  
Price, per set ..... **50c**  
Insuline Type 995, Set of Two Test Leads with Tip Prods and Spade Type Terminals.  
Price, per set ..... **50c**

These test leads can be attached quickly and easily to any meter or other testing instrument.

The handles are made of sturdy insulating tubing, one red and the other black for polarity identification, and the ends are provided with handy test prods.

**ELECTRIC SOLDERING IRONS**

**ILLUSTRATION J:—**  
Briton Electric Soldering Iron.  
Price ..... **\$1.00**  
Extra Tips for Briton Electric Soldering Iron.  
Price, Each ..... **25c**  
**ILLUSTRATION K:—**  
Samson Type K-82 "Klik-Switch" Electric Soldering Iron. Complete with two soldering tips.  
Price ..... **\$1.00**

The two irons listed herewith are the finest obtainable. They are designed for use on 110 to 120 volt a. c. or d. c. lines.

The Briton Iron has a heating element of the finest grade chrome-nickel wire fitted into a ventilated shank.

The Samson Iron is provided with a handy switch in the handle.

**SELF-FLUXING SOLDER**

**ILLUSTRATION I:—**  
Kester Rosin-Core Solder in handy box. Price ..... **25c**  
Kester Metal Mender Acid-Core Solder in box. Price ..... **25c**  
Rosin-Core Solder in 5-ft. Coil. Price ..... **10c**  
Acid-Core Solder in 5-ft. Coil. Price ..... **10c**

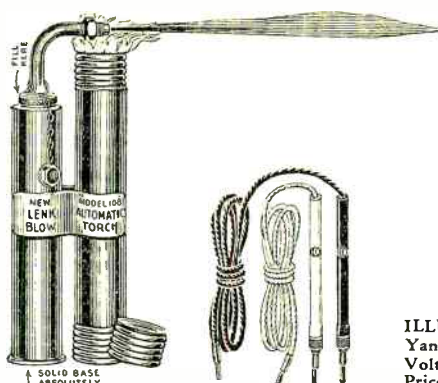
Kester self-fluxing solder is used wherever soldering operations are required. It is made of virgin tin and lead of the highest grades obtainable, and the fluxes used are the result of years of research.

The flux required in soldering operations is contained in the core of the solder strip.

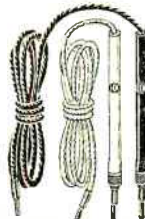
**SHIELD BRAND SOLDERING PASTE**

Mitchell-Rand, Shield Brand Non - Corrosive Soldering Paste, 2-oz. can. Price ..... **10c**

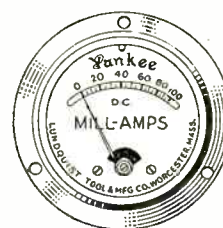
Shield Brand soldering paste is absolutely non-corrosive and requires no particular skill to use.



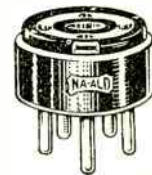
Illus. C



Illus. D



Illus. E



Illus. F

**YANKEE POCKET METERS**

**ILLUSTRATION A:—**  
Yankee No. 101, 0 to 50 Voltmeter.  
Price ..... **50c**  
**ILLUSTRATION B:—**  
Yankee No. 108, Combination 0 to 50 Voltmeter and 0 to 50 Ammeter.  
Price ..... **60c**

"B" and "C" batteries but may also be used on a. c. circuits.

Since they are of the low resistance type they should be used for instantaneous testing only and should not be used for continuous operation or for testing battery eliminator circuits where high resistance meters are required.

These pocket meters are designed for testing "A",

**YANKEE D. C. MILLIAMMETERS**

**ILLUSTRATION E:—**  
Yankee D. C. Panel Milliammeters.  
Price, Each ..... **\$1.00**  
No. 341—0 to 50 Ma. d. c.  
No. 343—0 to 100 Ma. d. c.  
No. 347—0 to 300 Ma. d. c.  
These sturdily built and

accurate d. c. panel milliammeters are ideally suited for use on test panels, receivers, transmitters and power supply units whenever an accurate check on operating conditions must be kept.

**YANKEE LINE VOLTAGE TESTER**

**ILLUSTRATION G:—**  
Yankee No. 266, 0 to 150 Volts a.c. Plug-in Line Voltage Tester.  
Price ..... **\$2.00**  
This a. c. meter, in highly polished black Bakelite case is furnished with a

standard cord and plug which may be plugged into any lamp socket or wall outlet to obtain a quick and accurate reading of the line voltage at that particular point without danger of short circuit or shock.

**LENK AUTOMATIC BLOW TORCH**

**ILLUSTRATION C:—**  
Lenk Type 108 Automatic Blow Torch.  
Price ..... **69c**  
This high grade, automatic, inexpensive blow

torch is ideal for outdoor and indoor use where an intense flame is desired for soldering or other heating. This torch burns ordinary denatured alcohol.

**NEUTRALIZING AND ALIGNING TOOLS**

**ILLUSTRATION L:—**  
Insuline Type 996, Insulated Neutralizing and Aligning Tools.  
Price, per set ..... **\$1.00**  
This handy set of two useful tools is an absolute necessity for accurate and efficient adjustments of neu-

tralizing and trimming condenser adjustments.

They are made of the finest insulating materials and finished with nickel-plated brass nibs. The screwdriver fits into the duplex wrench, making it a four-tools-in-one set.

**MUELLER BATTERY AND TEST CLIPS**

**ILLUSTRATION M:—**  
Mueller No. 48-B Cadmium Plated Small Size Clip, 1 3/4" long, 9/16" jaw spread, 10-lb spring. Price ..... **5c**  
Mueller No. 24-A Lead Plated Medium Size Clip, 2 1/2" long, 1" jaw spread, 17-lb. spring. Price ..... **10c**  
These battery and test lead clips are recognized as

the best available means for providing a quick, simple and positive contact between leads and terminals of batteries and parts.

They are ideally suited for experimental use.



Illus. I



Illus. J



Illus. K

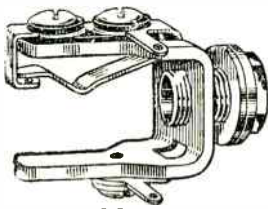


Illus. L



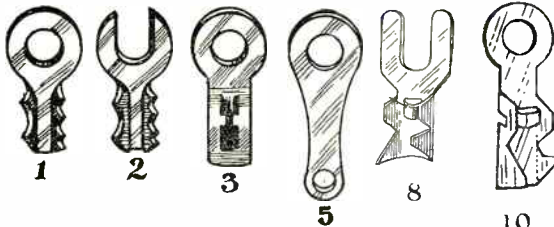
Illus. M

**ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION**



**FROST-RADIO**

Illus. A



Illus. B



Illus. C

**FROST PHONE JACK**

**ILLUSTRATION A:—**  
Frost Type 953, Single Open  
Circuit Short Jack. **20c**

This small jack projects only  
1" behind the panel. It is  
sturdily built, cannot get out  
of adjustment, is self-cleaning

and holds the plug in a firm  
grip. Contacts are of Sterling  
silver. Frame is nickelplated  
brass. It is furnished with  
an insulating washer which  
permits mounting on metal  
panels without danger of short-  
ing the frame to the panel.

**AMERICAN PHONE TIP JACKS**

**ILLUSTRATION C:—**  
American Radio Hardware Co.  
Type 15 Phone Tip Jacks, two  
tip jacks on a card. **10c**

These simple, reliable tip  
jacks insure positive electrical

contact between the jack ter-  
minal and the phone tips in-  
serted into them. They are  
ideal for use on binding post  
strips, loudspeaker outlets, vari-  
able taps and subpanel plug-  
in connections.

**STANDARD BINDING POSTS**

**ILLUSTRATION N:—**  
Eby Ensign Type Moulded Binding Posts. Standard Markings  
Available:—ANT.; GND.; A+; A—; B—; B Det. +;  
B. Amp. +; C+; C—; Speaker +; Speaker —. **10c**

**ILLUSTRATION M:—**  
Hoosick Falls Composition Top Binding Posts. Standard Markings  
Available:—Aerial; Ground; A Battery —; A Battery +;  
B Battery —; B Battery +; C Battery +; C Battery —;  
Speaker. **2 for 5c**

These binding posts are the  
best posts available in their  
respective classes.

Eby binding posts are recog-  
nized as the finest of binding  
posts available and are stand-  
ard equipment in the highest  
grade standard and custom  
built receivers and radio equip-  
ment.

They are made with pat-  
ented, one-piece construction  
and non-removable, polished  
Bakelite tops which unscrew  
sufficiently to allow wires to

be threaded into the hole in  
the stem. They are furnished  
complete with nut and solder-  
ing lug and are available with  
plain tops or with the mark-  
ings listed.

Where low cost is a main  
consideration, the Hoosick  
Falls binding posts are recom-  
mended. They are furnished  
complete with mounting screw,  
heavy collar and composition  
top, either plain or engraved  
with any of the markings  
listed.

**FAHNESTOCK SPRING CLIPS**

**ILLUSTRATION J:—**  
Fahnestock Type No. 3 Single Spring Connecting Clip. Size—  
1-1/16" long. **5 for 5c**

**ILLUSTRATION K:—**  
American Radio Hardware Co. Type No. 41 Single Spring Con-  
necting Clip. Size—3/4" long. **8 for 5c**

American Radio Hardware Co. Type No. 42 Single Spring Con-  
necting Clip. Size—1" long. **8 for 5c**

**ILLUSTRATION L:—**  
American Radio Hardware Co. Type No. 45 Double Spring Con-  
necting Clip. Size—1 1/4" long. **2 for 5c**

Spring connecting clips are  
the handiest means of making  
good contact between terminals  
and wire. They are ideal for

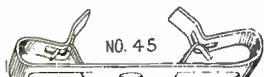
experimental hookups because  
they provide a quick and posi-  
tive method of making and  
breaking circuit connections.



Illus. J



Illus. K



Illus. L



Illus. D

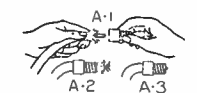


Illus. E



Illus. F

**JUST A MINUTE!**



The Universal Sleeve "A" has an  
internal thread. Screw it on end of  
wire.



Expose 1/2" of bare wire. Insert  
wood screw "B" locking wire to  
sleeve.



Screw on any of our standard  
Screw Grip Tips shown at left.

Illus. G



Illus. H



Illus. I



Illus. M

**ILLUSTRATION B:—**  
American Radio Hardware Co. Soldering Lugs.  
Type No. 1, Closed End Soldering Lug. Packed 24 to an  
envelope. **5c**

Type No. 2 Open End Soldering Lug. Packed 24 to an  
envelope. **5c**

Type No. 3, Closed End, Solderless Terminal. Packed 24 to an  
envelope. **5c**

Type No. 5, Flat, Closed End Long Soldering Lug. Packed 24  
to an envelope. **5c**

Type No. 8, Large, Open End Soldering Lug. **5c**

Type No. 10, Large, Closed End Soldering Lug. **5c**

These terminals fill the  
many requirements for cords,  
cables and binding post ter-  
minals. All are designed for  
soldered connections to the

wires except the Type No. 3  
which is a solderless type ter-  
minal, which will hold wire and  
make good contact without sol-  
dering.

**SOLDER AND SOLDERLESS CORD TIPS**

**ILLUSTRATION D:—**  
American Radio Hardware Co. Cord Tip Assortment, consisting  
of 6 standard cord tips for phone, loudspeaker or test leads, packed  
in an envelope. **5c**

**ILLUSTRATION O:—**  
American Radio Hardware Co. Easy Soldering Phone Tips. Packed  
10 to an envelope. **10c**

These phone tips are very  
easily soldered as can be seen  
readily from the illustration.

They eliminate the usual un-  
certainty and difficulty when  
soldering phone tips in the or-  
dinary way. All that is neces-  
sary is to insert the wire into

the shank of the tip until the  
end of the wire can be seen  
at the side hole and then drop  
a bit of solder in the hole. A  
tight connection is assured.

**ILLUSTRATIONS E, F AND G:—**  
Barkeley Non-Solder Cord Tips.

Type No. 632 Fork Tip. **5c**

Type No. 633 Pin Tip. **5c**

These ingenious cord tips  
eliminate the necessity of sol-  
dering connections to such

terminals. All that is neces-  
sary is to insert the bared  
wire through the shank of the  
cord tip, clamp it in with  
the screw and thread the head  
of the tip on the shank as  
shown in Illustration G.

**PHOSPHOR BRONZE FUSE CLIPS**

**ILLUSTRATION H:—**  
American Radio Hardware Co.  
Type 54 Fuse Clip. **5 for 5c**

These fuse clips have been  
carefully designed and accu-  
rately made to insure perfect  
electrical contact and durabil-  
ity. They can be used as  
quick-change contacting mount-  
ings for grid leak and fuse  
type resistors as well as for  
the usual fuses.

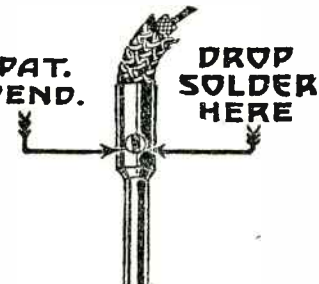
**JEFFERSON RADIO FUSES**

**ILLUSTRATION I:—**  
Jefferson, 1-, 2- and 3-amp.  
Radio Fuses. **5c**

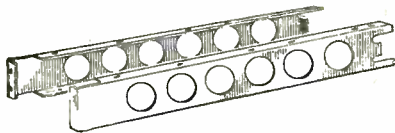
These union fuses are de-  
signed to protect radio sets,  
battery chargers, A and B  
eliminators, etc. against dam-  
age due to excessive current  
surges or a burnout due to  
short circuit. Both the fusible  
strip and the caps are proof  
against corrosion. They will  
carry a 10% overload indefinte-  
ly but will blow at 50% over-  
load.



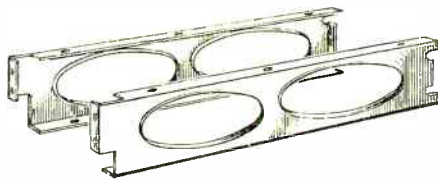
Illus. N



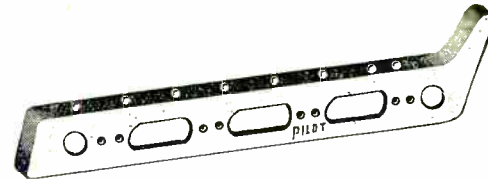
Illus. O



Illus. A



Illus. B



Illus. C

**NICKLEPLATED MACHINE SCREWS**

ILLUSTRATION F:—  
American Radio Hardware Co. Flat, Oval or Round Head  
Nickleplated Machine Screws. Packed 10 to an  
envelope.

Price per envelope of 10 screws..... **5c**  
STANDARD SIZES:— $\frac{1}{2}$ " x 4;  $\frac{3}{8}$ " x 5;  $\frac{3}{4}$ " x 5; 1" x 5.  
6/32; 1" x 6/32.

**NICKLEPLATED WOOD SCREWS**

ILLUSTRATION G:—  
American Radio Hardware Co. Flat, Oval or Round Head  
Nickleplated Wood Screws. Packed 10 to an  
envelope.

Price per envelope of 10 screws..... **5c**  
STANDARD SIZES:— $\frac{1}{2}$ " x 4;  $\frac{3}{8}$ " x 5;  $\frac{3}{4}$ " x 5; 1" x 5.

**MACHINE SCREW, WASHER AND  
NUT COMBINATION**

ILLUSTRATION H:—  
American Radio Hardware Co. Flat, Oval or Round Head  
Nickleplated Machine Screw, Washer and Nut Combination,  
consisting of 12 machine screws and 12 washers and 12 hexa-  
gon nuts to match to each envelope.

Price per envelope of 12 screws, 12 washers and  
12 nuts..... **10c**  
STANDARD SIZES:— $\frac{1}{2}$ " x 6/32;  $\frac{3}{4}$ " x 6/32; 1" x 6/32.

**NICKLEPLATED HEXAGON NUTS**

ILLUSTRATION I:—  
American Radio Hardware Co. 6/32 Hexagon Nuts,  $\frac{1}{4}$ " be-  
tween flats. Packed 20 to an envelope.

American Radio Hardware Co. 6/32 Hexagon Nuts, 5/16"  
between flats. Packed 15 to an envelope.  
American Radio Hardware Co. 8/32 Hexagon Nuts,  $\frac{1}{4}$ " be-  
tween flats. Packed 20 to an envelope.  
American Radio Hardware Co. 8/32 Hexagon Nuts, 5/16"  
between flats. Packed 15 to an envelope.  
Price per envelope..... **5c**

**NICKLEPLATED BRASS WASHERS**

ILLUSTRATION I:—  
American Radio Hardware Co. No. 6 Nickleplated Brass  
Washers for 6/32 screws. Outside diameter— $\frac{3}{8}$ ". Packed  
25 to an envelope.

Price per envelope of 25 washers..... **5c**  
American Radio Hardware Co. No. 8 Nickleplated Brass  
Washers for 8/32 screws. Outside diameter— $\frac{3}{8}$ ". Packed  
25 to an envelope.  
Price per envelope of 25 washers..... **5c**

**FIBRE WASHER ASSORTMENT**

American Radio Hardware Co. Type No. 5 Fibre Washer  
Assortment, consisting of a number of fibre washers of the  
various sizes found most useful in insulating mounting  
screws and other parts when mounting them on metal panels  
and subpanels.

Price..... **25c**

**RADIO WALL PLATE OUTLETS**

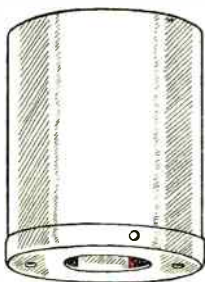
ILLUSTRATION M:—  
American Radio Hardware Co. Aerial and Ground Wall  
Plate Outlet.

ILLUSTRATION N:—  
American Radio Hardware Co. Speaker Wall Plate  
Outlet.  
Price, Each..... **25c**

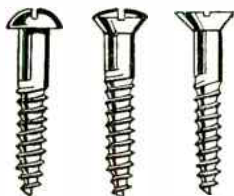
These Radio Wall Plates designed to mount on standard  
switch boxes, furnish a neat and convenient way of wiring  
a room, apartment or home for radio.



Illus. I



Illus. K



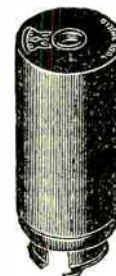
Illus. F



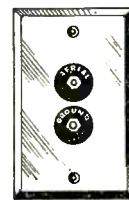
Illus. H



Illus. I



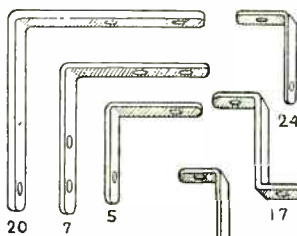
Illus. L



Illus. M



Illus. N



Illus. D



Illus. E



Illus. F



Illus. G

**SUBPANEL MOUNTING BRACKETS**

ILLUSTRATION D:—  
Amer. Radio Hardware Co. Type No. 7 Aluminum Bracket.  
Size— $6\frac{3}{4}$ " long x  $2\frac{1}{2}$ " high.  
Price..... **10c**

ILLUSTRATION A:—  
Amer. Radio Hardware Co. Type No. 8 Aluminum Bracket.  
Size— $8\frac{1}{2}$ " long x 1" high.  
Price..... **10c**

ILLUSTRATION B:—  
Amer. Radio Hardware Co. Type No. 9 Aluminum Bracket.  
Size—9" long x 2" high.  
Price..... **15c**

ILLUSTRATION B:—  
Amer. Radio Hardware Co. Type No. 11 Aluminum Bracket.  
Size—11" long x 2" high.  
Price..... **20c**

ILLUSTRATION C:—  
Pilot Type No. 37 Nickle Plated Metal Bracket. Size—  
9" long x  $1\frac{1}{4}$ " high.  
Price..... **25c**

These subpanel mounting brackets have been carefully  
selected to provide suitable units for practically every form  
of receiver and power unit assembly.

**NICKLEPLATED ANGLE BRACKETS**

ILLUSTRATION E:—  
Amer. Radio Hardware Co. No. 5 Nickleplated Angle  
Bracket. Size 1" x 1".  
Price..... 3 for **5c**

Amer. Radio Hardware Co. No. 7 Nickleplated Angle  
Bracket. Size  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ ".  
Price..... 2 for **5c**

Amer. Radio Hardware Co. No. 20 Nickleplated Angle  
Bracket. Size 2" x 2".  
Price..... **5c**

Amer. Radio Hardware Co. No. 8 Nickleplated Straight Grid  
Leak Bracket. (This item is not illustrated in Illus. E.)  
Price..... 8 for **5c**

Amer. Radio Hardware Co. No. 16 Nickleplated Curved  
Grid Leak Bracket.  
Price..... 8 for **5c**

Amer. Radio Hardware Co. No. 11Z, "Z" Type Coil  
Bracket. Size  $\frac{3}{4}$ ".  
Price..... 6 for **5c**

Amer. Radio Hardware Co. No. 24L, "L" Type Coil  
Bracket. Size 1".  
Price..... 6 for **5c**

These brass, nickleplated angle brackets are ideally suited  
for use in mounting coils, panels, subpanels and other  
similar pieces of apparatus.

**COIL AND TUBE SHIELDS**

ILLUSTRATION J:—  
Hammarlund Type TS Tube Shield. Designed with special  
ventilating cutouts and rubber grommet to protect control  
grid terminal. Mounting screws and screen grid clip packed  
with each shield.  
Price..... **35c**

ILLUSTRATION L:—  
Pilot Type 222S Tube Shield designed especially for use  
with Pilot Type 216 and 217 sockets. Made of aluminum  
and provided with screen grid outlet.  
Price..... **50c**

ILLUSTRATION K:—  
Eureka Type 600 Coil Shield designed especially for use  
with No. 100 and No. 101 Eureka Screen Grid Coil Kits.  
Complete with coil mounting brackets.  
Price..... **25c**

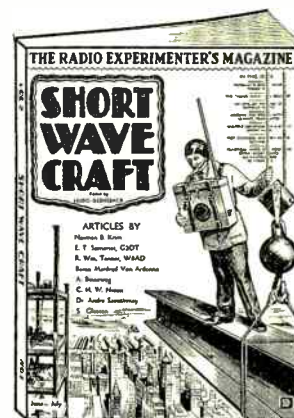
ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY  
AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



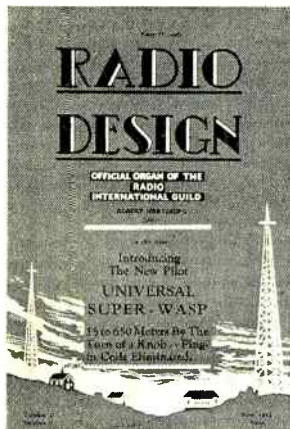
Illus. B



Illus. A



Illus. E



Illus. C



Illus. D



Illus. G

**RADIO NEWS MAGAZINE**

**ILLUSTRATION A:—**  
Radio News Magazine.  
Issued monthly.  
Price, per issue.....**25c**  
"If It's Radio News—It's in Radio News." That's the promise that Radio News makes—and keeps. Each month, its pages are not only full of up-to-date information—but they contain the **ADVANCE NEWS**,—hot from the laboratories and experimental stations.

Radio today is the fastest growing industry and to keep abreast of the latest developments you should read the magazine that is recognized as the leading magazine in the field. News from the manufacturers, radio in aviation, television, broadcasting, servicing, data sheets, laboratory experiments, new tubes and apparatus, everything connected with radio is served up in its pages in pleasing, easily understood language.

**RADIO CALL BOOK MAGAZINE**

**ILLUSTRATION B:—**  
Radio Call Book Magazine.  
Issued quarterly.  
Price, per issue.....**50c**  
This quarterly magazine is recognized as one of the leaders in reporting the progress being made in the radio art. Each issue contains a com-

pletely revised, up-to-date list of domestic and foreign broadcast, short wave and television stations, theoretical and practical feature articles, and wiring diagrams, response curves and service data on the leading radio receivers.

**RADIO DESIGN MAGAZINE**

**ILLUSTRATION C:—**  
Pilot's "Radio Design Magazine."  
Issued quarterly.  
Price, per issue.....**15c**  
Radio Design, one of the peppiest and most interesting little radio magazines published, is issued four times a year. It is devoted entirely to tech-

nical and constructional "dope" for the radio fan. Each issue contains articles by prominent radio technicians such as Robert Hertzberg, David Grimes, Robert S. Kruse, Zeh Bouck and other well-known radio writers. The short wave material is of special interest.

**RADEX RADIO INDEX MAGAZINE**

**ILLUSTRATION D:—**  
Radex Radio Index Magazine.  
Issued monthly.  
Price, per issue.....**25c**  
The Radex Radio Index contains a complete list of all broadcasting stations in North America. Stations are listed in order according to wavelengths and frequencies, according to

location and according to call letters. They are also listed in accordance with chain program features. Dial settings can be filled in opposite stations tuned in. The list is corrected monthly. In addition, each issue contains many interesting, non-technical articles on radio and the improvement of programs.

**SHORT WAVE CRAFT MAGAZINE**

**ILLUSTRATION E:—**  
Short Wave Craft Magazine.  
Issued every other month.  
Price, per issue.....**50c**  
Short Wave Craft is the only magazine that publishes short wave material exclusively. It is written for the

experimenter and the articles contain real, live data on short wave developments, construction, theory and practice. All theoretical discussions are free of any higher mathematics, making it a practical magazine for everyone.

**TELEVISION NEWS MAGAZINE**

**ILLUSTRATION F:—**  
Television News Magazine.  
Issued every other month.  
Price, per issue.....**50c**  
Television News is the only publication devoted exclusively to the latest wonder—Television. This magazine

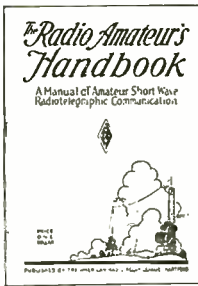
contains, in each issue, the latest developments in television, constructional article on television receivers and transmitters, articles on the past and future of television and translated articles of the leading foreign authorities in this new art.

**THE RADIO PICTORIAL MAGAZINE**

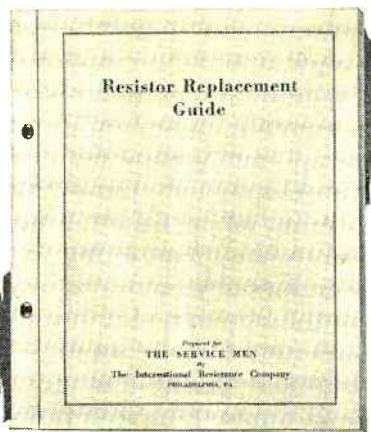
**ILLUSTRATION G:—**  
The Radio Pictorial Magazine.  
Issued quarterly.  
Price, per issue.....**10c**  
The Radio Pictorial is a complete, illustrated news-review radio magazine and permanent log book. It contains all the features that make a log book or station directory a nec-

essity for the listener-in, together with a directory of the chain programs on the air. In addition, it is filled with illustrations and bits of studio gossip about Radio Personalities that helps the listener to know the performer and thus to enjoy the programs all the more.

**KRESGE'S TREMENDOUS BUYING POWER AND EFFICIENT MERCHANDISING METHODS MAKE POSSIBLE THE EXCEPTIONAL VALUES OFFERED IN THIS CATALOG**



Illus. A



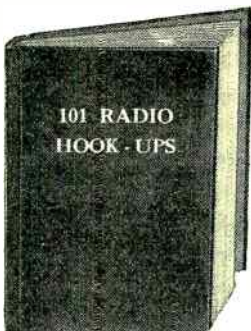
Illus. B



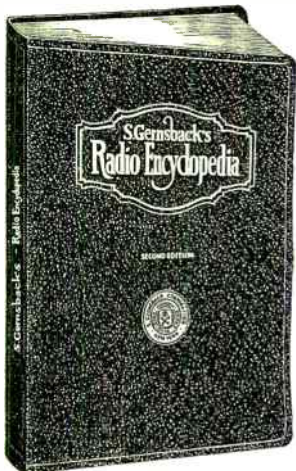
Illus. C



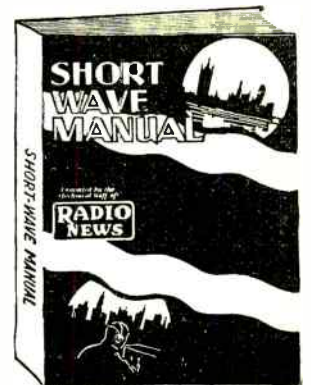
Illus. D



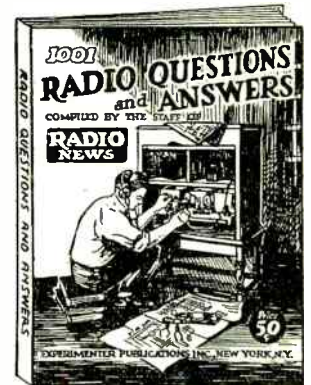
Illus. E



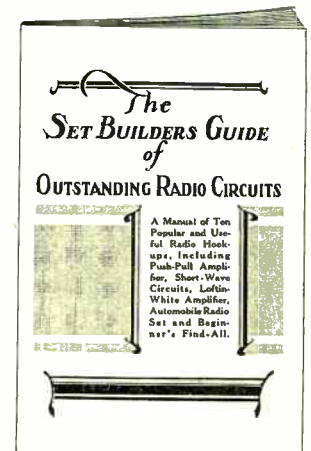
Illus. F



Illus. G



Illus. H



Illus. I

**QST RADIO AMATEUR'S HANDBOOK**  
**ILLUSTRATION A:**—  
 Radio Amateur's Handbook. **\$1.00**  
 Price .....  
 This book, published by QST Magazine, contains a wealth of information on the design and construction of transmitters and receivers for the amateur short wave bands, and considerable data of value to every engineer, experimenter and serviceman.

**INTERNATIONAL RESISTOR REPLACEMENT GUIDE**  
**ILLUSTRATION B:**—  
 International Resistor Replacement Guide. **25c**  
 Price .....  
 This remarkable book gives the value, code and position in the circuit of each resistor. It simplifies and speeds up set repairing. Servicemen the country over find this manual an absolute necessity for efficient servicing.

**CENTRALAB VOLUME CONTROL GUIDE**  
**NOT ILLUSTRATED.**  
 Centralab Volume Control Guide. **25c**  
 Price .....  
 The failure of volume controls in the many receivers now in service is creating a demand for replacement volume controls. This guide gives the characteristics of a large number of standard receivers and their special volume control requirements.

**RIDER'S "TROUBLESHOOTER'S MANUAL"**  
**ILLUSTRATION C:**—  
 John F. Rider's "Troubleshooter's Manual." **\$4.25**  
 Price .....  
 This manual is by far the most complete and comprehensive volume devoted to servicing and troubleshooting. In addition to a wealth of servicing data, it contains the wiring diagrams, with values, of hundreds of old and new receivers of practically every radio manufacturer.

**RIDER'S "RADIO MATHEMATICS"**  
**NOT ILLUSTRATED.**  
 Rider's Radio Mathematics. **\$2.00**  
 Price .....  
 This book explains, in simple, straightforward language, the mathematical principles so necessary to a thorough understanding of radio theory and practice, and shows the application of mathematical principles to radio problems.

**RIDER'S "PRACTICAL TESTING SYSTEMS"**  
**NOT ILLUSTRATED.**  
 John F. Rider's "Practical Testing Systems." **\$1.00**  
 Price .....  
 This handy book contains a complete collection of accurate and practical testing circuits, including tube testers, capacity measuring circuits, signal generators, oscillators, tube voltmeters, ohmmeters and continuity testers.

**TROUBLE FINDER AND SERVICE MANUAL**  
**ILLUSTRATION D:**—  
 Trouble Finder and Service Manual. **50c**  
 Price .....  
 This manual contains much information of great value to both the amateur and professional serviceman. The data in it is based on the personal experience of the staff and well-known contributors to Radio News Magazine.

**101 RADIO HOOKUPS**  
**ILLUSTRATION E:**—  
 Radio News' "101 Radio Hookups." **25c**  
 Price .....  
 This Radio News publication contains complete diagrams and descriptions of the most popular receivers, short wave transmitters, amplifier units and test apparatus used in radio.

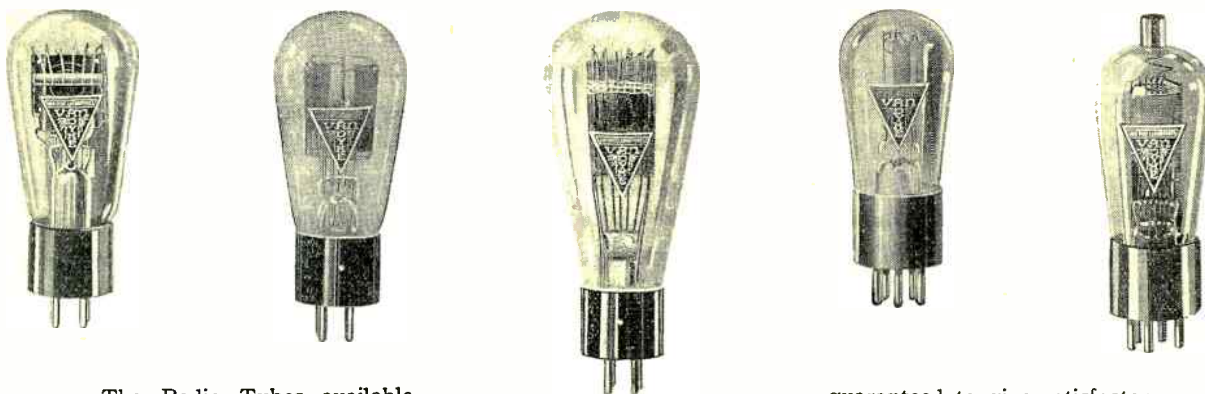
**S. GERNSBACH'S RADIO ENCYCLOPEDIA**  
**ILLUSTRATION F:**—  
 S. Gernsbach's Radio Encyclopedia. Red Morocco-Keratol Binding. **\$3.25**  
 Price .....  
 This 352-page, 9" x 12" Radio Encyclopedia is a complete working handbook containing up-to-the-minute, detailed explanations and descriptions of every word, phrase, formula, abbreviation and piece of radio apparatus.

**RADIO NEWS' "SHORT WAVE MANUAL"**  
**ILLUSTRATION G:**—  
 Short Wave Manual. **50c**  
 Price .....  
 This Short Wave Manual, compiled by the Technical Staff of Radio News, is the answer to the demand for an authoritative handbook on short wave work. In it you will find information that will enable you to get best results on short waves.

**1001 RADIO QUESTIONS AND ANSWERS**  
**ILLUSTRATION H:**—  
 Radio News' "1001 Radio Questions and Answers." **50c**  
 Price .....  
 This completely revised edition contains, in ready reference form, answers to questions asked by hundreds of readers of Radio News. The data covers practically every phase of radio with which the average student, experimenter and serviceman is likely to have trouble.

**SET BUILDERS' GUIDE OF RADIO CIRCUITS**  
**ILLUSTRATION I:**—  
 The Set Builders' Guide of Outstanding Radio Circuits. **5c**  
 Price .....  
 The radio circuits presented in this book have been chosen from among hundreds of representative designs. They include push-pull and Loftin-White amplifiers and short wave and automobile receivers.

ALL ITEMS LISTED IN THIS CATALOG HAVE BEEN TESTED FOR RELIABILITY AND ARE DESIGNED TO GIVE SATISFACTORY SERVICE IN OPERATION



The Radio Tubes available at Kresge Stores are the best the market has to offer.

Cunningham Tubes need no introduction to the millions of set owners who have used them consistently in their receivers. They are available at popular prices.

Van Dyke and Volutron Tubes are made for the S. S. Kresge Co. by two of the larg-

est tube manufacturers in the country.

As the construction of each tube progresses from the raw material to the finished product, the tubes are subjected to exhaustive tests which weed out all defective tubes and insure the quality of the tubes sold at Kresge Stores. All tubes are

guaranteed to give satisfactory service.

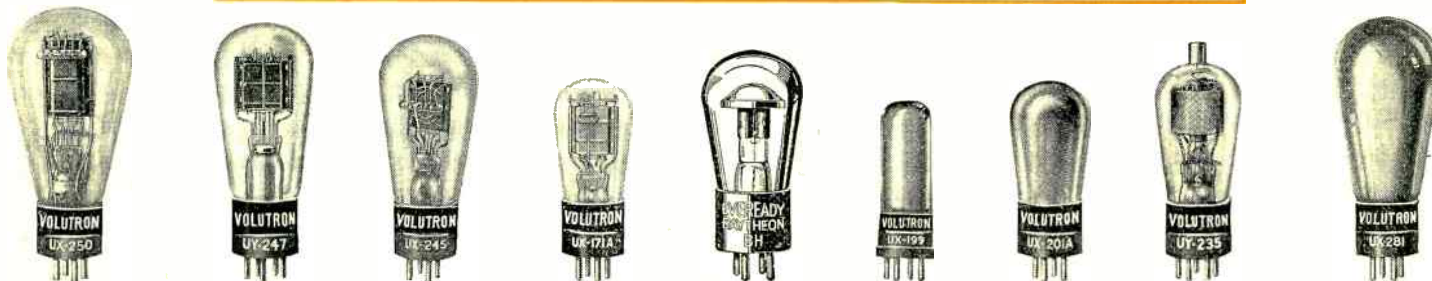
The exceptionally low prices at which these three makes of high grade tubes can be bought at Kresge Stores makes it unnecessary to put up with the annoyance of poor reception due to wornout tubes.

Have your tubes tested at Kresge Stores and replace all wornout tubes with any of the makes listed on this page.



DETECTOR, AMPLIFIER AND RECTIFIER TUBES										
General Type	#Cunningham	Van Dyke		Volutron		Use R-R.F. Amp. D-Det. A-A.F. Amp. P-Power (S)-Screen Grid	Filament		Base	
	Type No.	Type No.	Price	Type No.	Price		Volts	Amps.	Type	Prongs
Dry Battery Type	C-299	UV-199	89c	UX-199	89c	R; D; A	3.3	.06	UV	4
	CX-299	UX-199	89c	UX-199	89c	R; D; A	3.3	.06	UX	4
	CX-330	UX-230	\$1.00	UX-230	89c	R; D; A	2.0	.06	UX	4
	CX-332	UX-232	\$1.50	UX-232	\$1.10	R; D; (S)	2.0	.06	UX	4
6-Volt Storage Battery Type				UX-200A	\$1.50	D	5.0	.25	UX	4
	CX-301A	UX-201A	50c	UX-201A	50c	R; D; A	5.0	.25	UX	4
	CX-112A	UX-112A	75c	UX-112A	89c	R; D; A; P	5.0	.25	UX	4
A.C. Type	CX-322	UX-222	\$1.75	UX-222	\$1.75	R; A; (S)	3.3	.132	UX	4
	C-324	UY-224	\$1.25	UY-224	\$1.00	R; D; A; (S)	2.5	1.75	UY	5
	CX-326	UX-226	65c	UX-226	75c	R; A	1.5	1.05	UX	4
	C-327	UY-227	75c	UY-227	75c	R; D; A	2.5	1.75	UY	5
Power Tubes D.C. and A.C.	C-335	UY-235	\$1.50	UY-235	\$1.00	R; A; (S)	2.5	1.75	UY	5
				UX-120	\$1.50	P (dry batt.)	3.0	.125	UX	4
	CX-331	UX-231	\$1.00	UX-231	89c	P (dry batt.)	2.0	.13	UX	4
	CX-112A	UX-112A	75c	UX-112A	89c	P (d.c. or a.c.)	5.0	.25	UX	4
	CX-371A	UX-171A	75c	UX-171A	89c	P (d.c. or a.c.)	5.0	.25	UX	4
				UX-210	\$3.00	P (a.c.)	7.5	1.25	UX	4
	CX-345	UX-245	89c	UX-245	89c	P (a.c.)	2.5	1.5	UX	4
Rectifiers	C-347	UY-247	\$1.25	UY-247	\$1.00	P (pent.) (a.c.)	2.5	1.5	UY	5
		UX-250	\$3.00	UX-250	\$3.00	P (a.c.)	7.5	1.25	UX	4
	CX-380	UX-280	89c	UX-280	89c	Full Wave	5.0	2.0	UX	4
	CX-381	UX-281	\$2.50	UX-281	\$2.50	Half Wave	7.5	1.25	UX	4
	Eveready Raytheon Type BH	Price	\$3.00		Full Wave	No Filament		UX	4	

Note \*: Cunningham Tubes available at popular prices.



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