

CATALOG **49**

The **RADIO SHACK** Corp.

CABLE ADDRESS · **RADIO SHACK**
167 WASHINGTON ST., BOSTON, MASS., U.S.A.

Everything

in electronics... for communications,
television, sound, test, experimental
and research equipment...

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ONE-SOURCE-OF-SUPPLY distributor

Our 25th Year



COLLINS QUALITY ENGINEERED AMATEUR EQUIPMENT

For Greater Performance



Collins 75A Amateur Receiver

A modern receiver using recently developed and proved electrical circuits and mechanical design. Frequency coverage 3.2 to 30 mc; 80, 40, 20, 15, 11 and 10 meters. Calibrated dial has only the band used lighted for easy reading. Double conversion assures optimum selectivity plus efficient image rejection; image rejection is a minimum of 50 db. even on 10 meters; IF rejection is 70 db. minimum. A 1-microvolt RF signal provides normal output with approximately 6 db. signal to noise ratio. Low impedance antenna input for both balanced and unbalanced lines. High sensitivity, crystal filter for variable selectivity, automatic noise limiter, signal strength meter, automatic volume control, 2.5 watts of output power are available. Operates on 115 volts 50-60 cycles. Size 21 1/8" wide, 12 1/4" high, 13 1/8" deep.

CAT. NO. 36-095 Net Price . . \$375.00



Collins 32V-1 150 Watt Amateur Transmitter

A quality engineered instrument with more desirable features per cubic inch than any other ham transmitter. Permeability tuned, it covers 80, 40, 20, 15, 11 and 10; the 1.6-2mc range is spread over 16 turns of the vernier dial. Tubes: 6SJ7 oscillator; 6AK6 Class A RF buffer; 6AG7 harmonic amplifier; 2-7C5 buffer doublers; 4D32 RF power amplifier; 6SL7 (2) for audio amplifier; 2-807 modulators; 5Z4 LV rectifier; 2-5R4GY HV rectifiers. Audio distortion less than 7% at 90% modulation with 1000 cps. input. Frequency response within 2 db. from 200-3000 cps. Antenna matching network for 50-600 ohms covers all usual requirements. Operates on 110-125 volts 50-60 cycles. May be used for portable or permanent installations. A 1 KW final amplifier may be driven easily with this model.

CAT. NO. 35-001 Net Price . . \$475.00

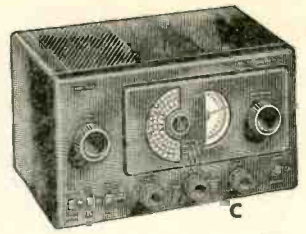
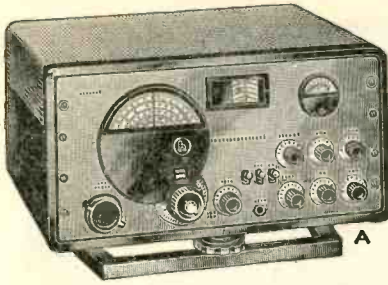


Collins 30K Amateur Transmitter

Designed by engineers who know what you want in a transmitter. All circuits hand-switched, except the antenna tuning network. Two separate plug-in coils are supplied for that — one for 80 and 40 meters, one for 20, 15, 11 and 10 meters. Complete circuit fusing protection. P.T.O. control. Tubes: 4-125A RF power amp.; 6SJ7 speech amp.; 6SN7 AF; 6116 speech clipper; 6B4G modulator driver; 5R4GY low voltage rect.; 2-866A high-voltage rects. Meters: modulator plate current, fil. voltages, power amp. grid current, power amp. plate current, RF output. Controls: plate on-off switch; filament on-off switch; phone-CW switch; audio gain control; filament voltage adjustment; low voltage—tune—operate switch; PA grid tuning; PA plate band-switching; PA plate tuning; PA plate band-switching; antenna loading. Size 22" wide, 16 1/2" deep, 66 1/2" high. 115 volt 60 cycles. Includes Collins 310A exciter unit. Exciter gives cathode keying for fast clean CW. Output fed through 73 ohm coax transmission line to link on grid coil of transmitter. Tubes: 6SJ7 PTO; 6AG7 buffer amplifier; 6AG7 doubler; 807 multiplier; 807 output; 2-VR105 voltage reg.; 2-VR 150 voltage reg.; 5R4GY rect.; 6X5 bias rect.

CAT. NO. 35-002 Net Price with 310A Exciter Unit . . . \$1450.00

HALLICRAFTERS RECEIVERS



(D) Hallcrafters Model S-40A

The finest performing receiver in the popular price field; incorporates many circuit refinements and features never before offered in this price range. Covers 540 kc. to 43 mc. in four bands: 540 to 1700 kc.; 1.7 to 5.35 mc.; 5.35 to 15.7 mc.; 15.7 to 43 mc. Nine tubes: 6SG7 RF amplifier; 6SA7 converter; 6SK7 1st IF; 6SK7 2nd IF; 6SQ7 2nd detector and 1st AF; 6F6G output; 6H6 ANL and gas gate; 6J5GT BFO; and 80 rectifier. Permeability adjusted micro-set coils in RF section. Separate sensitivity and volume gain controls; three-position tone control. Connections for operation with transmitter. Internal FM speaker held in rubber mounts. Black finish steel cabinet with red and gray trim; 18 1/2" wide by 8 1/2" high by 9 1/2" deep. Operates on 105-125 volts AC and draws 75 watts at 117 volts. Audio output 2 1/2 watts. Socket provided for use with external batteries. Draws 3.3 amps heater current at 6 volts and 70 ma. plate current at 270 volts, when used with batteries. **\$99.50**

Model S40U. Same specifications as above but may be used on 110, 130, 150, 220 or 250 volts, 25 to 60 cycles. **\$109.50**

Model SM-40 "S" Carrier-level Meter. **\$16.00**

(A) Hallcrafters Model SX-42

The ultimate in all-wave receivers for world-wide reception covering the entire frequency range from 540 kc. to 110 mc. in six bands: 540 to 1620 kc.; 1.62 to 5 mc.; 5 to 15 mc.; 15 to 30 mc.; 27 to 55 mc.; 55 to 110 mc. Tubes: 6 AG5 1st RF; 6AG5 2nd RF; 6H6 AM rectifier and NL; 7F8 converter; 6SK7 1st IF; 6SG7 2nd IF; 7H7 1st FM limiter amplifier; 7H7 2nd FM limiter; 6H6 discriminator; 6SL7 audio inverter; 6V6 audio output (2); 7A4 BFO and FM tuning meter amplifier; VR 150 voltage regulator; 5U4G rectifier. Electrical bandspread dial calibrated for amateur bands; CW pitch adjustable from panel; four-position switch for phone, FM, AM or CW; receive-standby switch; ANL; AVC switch; six-position selectivity switch with crystal filter operates on frequencies between 540 kc. and 30 mc. Transmitter connection; phono connection. Dual IF transformers: 455 kc. IF for standard operation; 10.7 mc. IF for VHF and FM operation. Two tuned RF stages with miniature tubes for better VHF performance. Permeability adjusted micro-set coils in RF section. Push-pull final audio stage delivers over 8 watts with less than 8% harmonic distortion. Cabinet 20" wide, 9 1/2" high and 16" deep. Set operates on 105-125 volts AC and draws 110 watts at 117 volts. Socket provided for external battery operation. Draws 5 amps at 6 volts DC for heater current and 150 ma. at 270 volts DC for plate current when used with batteries. **\$275.00**

Cat. No. 36-055 Net Price

Model SX-42U Same but for 110, 130, 150, 220 and 250 volt operation at 25 to 60 cycles. **\$287.50**

Cat. No. 36-056 Net Price

Model R42 Speaker for above units. Table type to match receiver with switch for high fidelity reception. **\$34.50**

Cat. No. 36-057 Net Price

Cat. No. 36-058 SX-42 with R-42 speaker. **\$309.50**

Net Price

Cat. No. 36-059 SX-42U with R-42 speaker. **\$322.50**

Net Price

Cat. No. 36-060 B-42 Tilt base for receiver. **\$7.50**

Net Price

(E) Hallcrafters S-53 Receiver

Both performance and price—providing amateurs with the latest communication developments at a moderate cost—make the new S-53 an outstanding Hallcrafters engineering feat. Covers 540 kc. to 54.5 MC. in 5 bands; slide-rule-type dial, accurately calibrated, edge-lighted glass, beautifully colored. Separate bandspread control and scale for fine tuning, with full electrical bandspread. Front panel controls include: r.f. gain, a.f. gain, standby-receive switch, phone-CW switch, tone-control switch, noise-limiter switch, band-selector switch. Speaker-phone switch, phone jack, and phono jack in rear panel. 2 Mc. i.f. for improved image ratio eliminates repeat points within amateur bands. Has voltage-stabilized oscillator, iron-core i.f. transformers, high-sensitivity, latest type series noise-limiter circuit, built-in FM speaker, output 2 1/2 watts. Tube complement: 6C4 oscillator; 6BA6 1st i.f.; 6BA6 2nd i.f.; 6H6 det. AVC, ANL; 6SC7 BFO and last audio; 6K6GT audio output; 5Y3 rect. Operates on 105-125 volts, 50-60 cycles. Cabinet size, 12 1/2 x 6 1/2 x 7 1/2" deep. **\$89.50**

Cat. No. 36-064 S-53 complete with tubes. **\$89.50**

Net Price

Cat. No. 36-065 S-53U for 110, 130, 150, 220 or 250 volts, 25-60 cycles. **\$98.50**

Net Price

(B) Hallcrafters Model SX-43

This quality, precision-engineered receiver offers continuous coverage from 540 kc. to 55 mc. with an additional band from 88 to 108 mc. AM reception on all bands; CW on four lower bands, and FM on frequencies above 44 mc. Automatic noise limiter; electrical bandspread; frequency meter tuning; record player input. Tubes: 6BA6 RF; 7F8 converter oscillator; 6SG7 1st IF; 6SH7 2nd IF and 2nd converter, band 5 AM; 6SH7 3rd IF (10.7 mc.); 6H6 AM detector and noise limiter; 6 AL5 FM detector; 6SQ7 1st AF amplifier; 6J5 BFO second converter oscillator, band 5; 6V6 audio output; 5Y3 rectifier. For operation on 105-124 volts 50-60 cycles. Draws 90 watts at 117 volts. When operated from external batteries the heaters draw 3.8 amps at 6 volts and the plate 105 ma. at 270 volts. **\$189.50**

Cat. No. 36-049 Net Price

Model SX-43U same as above but in voltages: 110, 130, 150, 220 or 250, 25 to 60 cycles AC. **\$199.50**

Cat. No. 36-050 Net Price

R44 Bass-reflex speaker for use with SX 43. **\$24.50**

Cat. No. 36-051 Net Price

(C) Hallcrafters Model S-38

A highly sensitive all-wave receiver, ideal for communications service. Distinctive styling and quality workmanship put it far ahead in the low price field. Four-band coverage: 540 kc. to 32 mc. Band 1, 540-1650 kc.; band 2, 1.65-5 mc.; band 3, 5-14.5 mc.; band 4, 13.5-32 mc. Main dial calibrated in megacycles; electrical bandspread dial for ultra fine tuning. BFO pitch adjustable from front panel. AM-CW switch turns on automatic volume control in AM position. Standby-receive switch. Automatic noise limiter. Antenna terminals for doublet or single wire antenna. Tip jacks for headphones. Internal FM speaker mounted in top of satin-black steel cabinet with gray and red trim. Size, 12 1/2" wide, 6 1/2" high by 7 1/2" deep. Has six tubes: 12SA7 converter; 12SK7 IF amplifier; 12SQ7 second detector, AVC, first AF; 12SQ7 BFO, ANL, 35L6GT second AF; 35Z5GT rectifier. Designed for 105-125 volts AC or DC. Special external resistance line available for 210-250 volts AC or DC operation. Power consumption on 117 volts is 29 watts. **\$49.75**

Cat. No. 36-045 Net Price

220 VOLT CORD ADAPTER. **\$1.41**

Cat. No. 36-046 Net Price

(F) Hallcrafters Model S-47

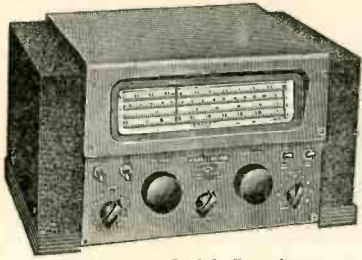
A high-precision, fine quality receiver especially adapted to use in homes, schools or public institutions. It is a 15-tube AM-FM instrument covering 535 kc. to 108 mc. in three bands; band 1, 535 to 1720 kc.; band 2, 5.9 to 18.2 mc.; band 3, 9.9 to 12 mc.; band 2b, 15 to 18 mc.; band 3, 88 mc. Five tuning pushbuttons for AM and five for FM. AFC on FM band. Treble tone and AM selectivity switch. Push-pull 6V6GT's provide 12 watts audio output. AM response essentially flat from 30 to 7500 cps.; FM from 30 to 15,000 cps. Phone connection at rear of chassis. Dual IF transformers—455 kc. for AM and 10.7 mc. for FM. Tubes: 6BA6 RF; 6J6 RF oscillator and AFC; 6BE6 mixer; 3—6SG7 IF; 6SH7 IF; AM detector; 6AL5 FM detector; 6J5 AF; 6J5 bass amplifier; 6SQ7 AF; 6SQ7 phase inverter; 6V6GT power amplifiers; 5U4G rectifier. Operates on 105-125 volts 50-60 cycles. Power drain is 100 watts. Use any speaker with 500-600 ohms input. **\$229.50**

Cat. No. 36-047 Net Price

Model S-47C same as above without cabinet for rack installation. **\$209.50**

Cat. No. 36-048 Net Price

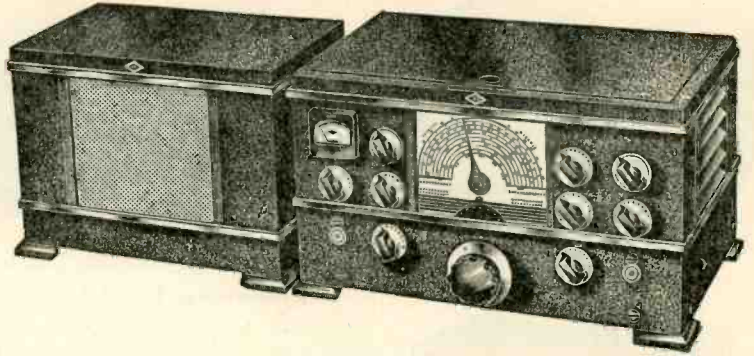
NATIONAL RECEIVERS



National NC-46 Receiver

A professional-appearing, general-coverage receiver with all the latest features for smooth control. Peak performance from 540 kc. to 30 mc. divided into 4 bands—80, 40, 20 and 10 meters. Tubes: 2-6SG7 1F; 6H6 detector limiter; 6SF7 AVC amplifier; 6SJ7 BFO; 6SC7 audio inverter; 2-25L6 push-pull audio output, and 25Z5 rectifier. 5 microvolts sensitivity with 50 milliwatt output over entire range. Audio output 4 watts maximum. Output variation with AVC is less than plus or minus 4 db. with input 10 to 100,000 microvolts. Two-tone gray steel cabinet 9 1/2" h. x 17 1/2" w. x 12 1/2" d. For 105-130 volts AC/DC operation. Complete less speaker.

Cat. No. 36-041 Net Price \$97.50
Cat. No. 36-042 NC-46TS speaker. \$9.90
Net Price



National NC-2-40 D Receiver

A receiver with many newly developed features represents one of the most outstanding developments of the famous National engineering staff. Tubes used are: 6SK7 Tuned RF stage, 6K8 First Detector, 6J5 HF Oscillator, 6SK7 1st IF, 6SK7 2nd IF, 6SL7 Second Detector-Limiter, 6SJ7 AVC, 6SJ7 BFO, 6SN7 1st audio Noise Limiter, 2-6V6 Audio output and 5Y3G as rectifier.

A full-visual dial operated through a 30-1 gear drive is accurately calibrated on ten frequency ranges. Six of these ranges are for general coverage over the total tuning range from 490 to 30,000 KC; four additional ranges provide calibrated bandspread of the amateur 80/40/20/10 meter bands. Automatic range-in-use indicator is built in the dial. Bandspread on amateur bands is extremely generous, covering most or the 180° dial scale; no resetting is necessary to return to any pre-logged station or frequency. Uniform bandspread is provided through a unique tapped coil arrangement similar to that used in the famous HRO receiver, and the same knob used for tuning is used to shift bands.

The sensitivity of the NC-200 is particularly high, with an input signal of only 1 microvolt providing 1 watt of audio output. Newly developed RF coupling circuits provide full sensitivity up to the extreme high end of the tuning range at 30 MC. All RF and IF coils are wound on molded polystyrene coil forms, assuring freedom from circuit losses caused by humidity. All critical components, such as tuning and trimming condensers, are insulated with isolantite, to insure high stability at all frequencies.

Temperature compensation in the high frequency oscillator, RF stage, and first detector circuits reduces frequency drift to a negligible value. Six step selectivity is provided by a new type of crystal filter with equal utility for either phone or CW reception. Other important features are: wide range adjustable series-valve-noise limiter, calibrated signal level meter, provision for battery operation in emergencies, standby switch, separate 10" PM speaker in matching metal cabinet, attractive modern cabinet finished in two-tone gray and chrome, self-balancing phase inversion circuit, 8 watts undistorted audio output, image ratio of better than 30 db., separate high frequency oscillator and first detector tubes, absolute minimum of inherent circuit noise, and an attenuator type tone control.

All controls are conveniently grouped for maximum simplicity in operation. Controls include: combination tuning and bandchange knob, RF and AF gain controls, BFO on-off and variable pitch, 3 position all-plate-standby switch, Crystal selectivity, Crystal phasing. For the critical amateur and commercial operator, the high selectivity and sensitivity provide a type of overall performance never before available in a receiver so moderately priced.

Two-tone gray cabinet 19 1/2 x 10 1/2 x 15 1/2". Operates on 110-120 or 220-240 volts 50-60 cycles. With tubes, less speaker.

Cat. No. 36-036 Net Price \$236.25
Cat. No. 36-037 10" speaker. Net Price \$16.44



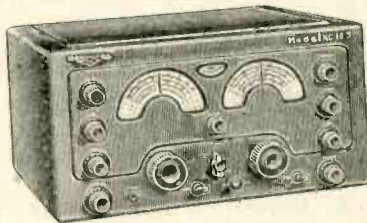
National HFS Receiver

A new versatile receiver/converter with an unusual frequency range, 27 to 250 mc., and with fine selectivity characteristics. Circuit is basically superheterodyne-superregenerative, with 1f./converter output channel at 10.7 mc. Equally adaptable as a converter in conjunction with a conventional superhet tuning to 10.7 mc. or as a complete VHF receiver for AM, FM, and CW; to use as a high fidelity FM unit, simply connect converter output to 10.7 mc. FM 1f. channel. Storage rack inside cabinet for six plug-in coils which cover 178-250, 120-178, 80-120, 56-80, 41-60, 27-42 mc. Controls include: tuning dial, trimmer control, regeneration control, audio gain, int-ext switch, converter-output control, and B plus/OFF switch. Tube complement: 6AK5 1st det.; 9002 h.f. osc.; 6SG7 1f. amp.; 6SK7 2nd det.; 6J5 1st audio; 6V6GT/G audio output and 6J5 converter output. 5" PM speaker built in. Size, overall: 16 1/2" x 8 1/2" x 8 1/2". Finished in smooth gray enamel.

Cat. No. 36-128 Model HFS receiver including coils. Net Price \$142.00
Cat. No. 36-129 Type 5886 Power Supply, 115/230 volts 50-60 cycles. Net Price \$22.43
Cat. No. 36-130 Type 6868 Vibrator Power Supply 6 volts DC. Net Price \$34.16
Cat. No. 36-131 TB-1 Tilt Base. Net Price \$3.95

National NC-173 Receiver

A new communication receiver covering from 540 kc. to 31 mc., and 48 to 56 mc. on the 6-meter amateur band. Bandspread tuning knob and dial for 80, 40, 20, 10 and 5 meter amateur bands. Tubes: 5Y3GT/G rectifier; VR150 voltage regulator; 6V6 audio output; 6SJ7 audio; 6H6 noise limiter; 6SJ7 BFO; 6AC6 AVC; 6H6 2nd detector, AVC and NL; 2-6SG7 1F; 6J5 voltage-regulated HF oscillator; 6SA7 1st detector; 6SG7 tuned RF with antenna compensator. Double-diode noise limiter with variable threshold control effective on both CW and phone. Six positions from broad to sharp provided on new crystal filter, with phasing control for attenuation of interference. Output 3.5 watts. Smooth gray cabinet 19 1/2 x 10 1/2 x 12 1/2". Operates on 110-120 or 220-240 volts 50-60 cycles. May be operated on batteries in emergency. Cabinet similar to NC-183. Complete with tubes and speaker. Cat. No. 36-033 Net Price \$189.50



National NC-183 Receiver

The very latest in circuit design is incorporated in this modern, quality communications receiver. Has calibrated amateur bandspread with gear drive tuning dials for 6, 10-11, 20, 40 and 80 meter bands. Two RF stages on all bands with image rejection 40 db. at 28 mc. Double-diode noise limiter effective on both phone and CW. Six steps of selectivity on new type crystal filter, from the broad 1st step to the extremely sharp 6th step. "S" meter built in with adjustable sensitivity for both phone and CW. Stability assured by temperature compensation and voltage regulator. Phono input jack on rear panel provides for connecting a high-impedance record player pickup. Accessory socket permits connection of FM adaptor, crystal calibrator, etc. Uses 14 tubes plus rectifier and voltage regulator. Range of frequency 0.54 to 31 mc. plus 48 to 56 mc. for 6 meter amateur band. Operates on 110-120 volts or 220-240 volts 50-60 cycles. With tubes, less speaker. \$268.00

Cat. No. 36-038 Net Price \$14.00
Cat. No. 36-039 NC-183TS 10" Speaker. Net Price \$16.95
Cat. No. 36-040 NFM-83 FM Adaptor. Net Price

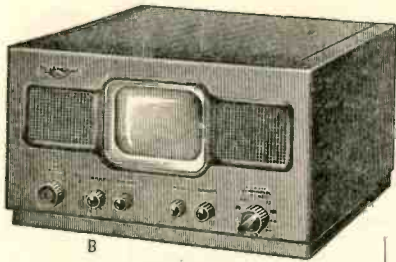


National NC-33

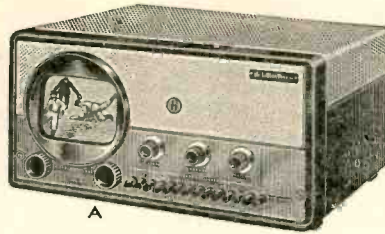
A quality engineered receiver famous among "Hams" and professionals for real performance in amateur, police, and foreign or domestic broadcast. Range: 500 kc. to 35 mc. in four bands: band D, 500-1420 kc.; band C, 1420-4200 kc.; band B, 4.0-12 mc.; band A, 12.0-35 mc. Dials provide either general coverage or bandspread tuning. Tubes: 12SA7 converter; 12SG7 1F; 12H6, 2nd detector AVC noise limiter; 12SL7GT 1st audio and BFO; 35L6GT audio output and 35Z5GT rectifier. Built-in 5" PM speaker cuts out when earphones are plugged in. For operation on 105-125 volts 40-60 cycles or 105-125 volts DC. Size 16 1/2 x 8 1/2 x 8 1/2".

Cat. No. 36-028 Net Price \$57.50

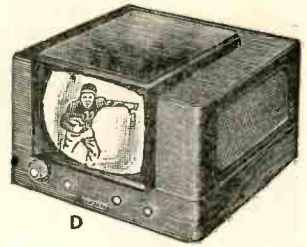
You can fill ALL your radio amateur needs from this catalog—see the complete index, pages 111-114.



B



A



D



C

(A) Hallicrafters 7-inch Television Model T-54

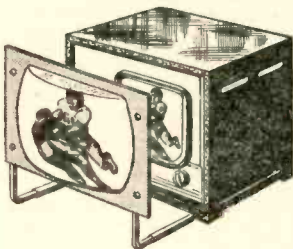
All of the magic entertainment of television brought to you with sharp, clear, constantly stable pictures at a practical price. Made possible only by the fact that high frequency circuits and precision engineering have for many years been the specialized work of Hallicrafters engineers. Provides a 4" x 5 1/2" picture — for perfect viewing in the apartment, den or living room. Push-button tuning for each of the 12 television channels. Seven-inch electrostatic tube. Front panel controls for contrast, brightness, volume, horizontal hold, vertical hold, fine tuning. Special automatic gain control circuit controls the i.f. system to maintain constant reception in spite of atmospheric or other variations in signal strength from the transmitting station. High sensitivity and excellent distance reception, comparable to those in much higher priced brackets. Three i.f. stages with iron-core i.f. transformers. 18 tubes plus cathode-ray tube and 4 rectifiers. Transformerless power supply; operates from 105-120 volts, 50-60 cycle AC. Housed in attractive cabinet finished in rich silver gray; has "air-ridged" top; modern functional design. Size: 20 1/2 x 16 x 9 1/2" high.

Cat. No. 36-101 Model T-54 complete as above. Net Price **\$139.50**

Model 505 — Same as Model T-54 above but furnished in mahogany veneer cabinet.

Cat. No. 36-102 Net Price **\$149.50**

TV Screen Magnifying Lens



Transforms screen of 7" tube to equivalent of big 10" screen for added enjoyment without eye strain, fatigue, distortion. Installation is as simple as ABC . . . no clamps to scratch surface of the set. Sliding telescope for horizontal and vertical adjustment. Fits all 7-inch receivers.

Cat. No. 16-321 Net Price **\$11.71**

(B) National Television 7-inch Model TV-7W

The excellence of National television is a sensation . . . the convenience of its tuning is unsurpassed . . . the dual-speaker, binaural sound is clear, lifelike, unobtainable with conventional single speaker . . . the brighter, clearer, steadier picture is something you'll take for granted because it's so dependable. These are some of the rare features that National offers at a price everyone can afford for spectacular television entertainment. It is made possible only by National's background of more than 20 years in designing and manufacturing world-famous radio equipment for airlines, commercial firms, discriminating amateurs, and the armed services.

Covers all 13 channels, 10 with the automatic station selector for accurate, easy tuning; one control tunes both picture and sound perfectly. Can be viewed under normal room lighting. New Synchro-Screen locks picture in place, eliminates need for constant re-tuning. Some of its technical features are: full 4,000 volts on picture tube; coil switching assures equivalent of separate high-Q tuned circuits for each channel, greater sensitivity and stability; automatic gain control corrects variations in signal strength; uses 37 Mc. i.f. instead of conventional 21 Mc. to minimize interference; double-tuned r.f. bandpass circuits improve selectivity and image ratio; two 6" speakers and hum-free power supply provide high-fidelity sound. 18 tubes and three rectifiers. Antenna input impedance circuit matches 300 ohm balanced line. Operates on 115 volts 60 cycle AC. Cat. No. 36-144 As above in hand-rubbed mahogany cabinet. Size 20 1/2 x 12 1/2 x 17 1/2".

Net Price **\$199.50**

Cat. No. 36-145 As above in luxurious gray metal cabinet. 19 1/2 x 11 1/2 x 18". Net Price **\$189.50**

(C) Hallicrafters 10-inch Model T-61 Television Set

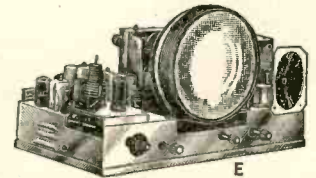
Enjoy the excitement and entertainment of television at its best with big 10-inch direct-view reception and Hallicrafters brilliant, sharp, stable picture. Get it quickly, conveniently — when you want it — with push-button tuning on all 12 television channels and the controls you need for maximum performance. Front panel has brightness control for best viewing brilliancy; volume control; horizontal and vertical controls for synchronization; 12 push-button station selectors; fine-tuning control. Rear panel has focus control; vertical and horizontal position controls; width and height controls; vertical linearity controls. Note these technical specifications for long-lived, dependable excellence; 22 tubes plus 10-inch picture tube and 1 high-voltage rectifier, selenium low-voltage rectifiers; r.f. amplifier for improved signal-to-noise ratio; 3 i.f. amplifiers for proper band width and best picture definition; 2 video amplifiers to provide full picture contrast; special control holds intensity despite variations in signal strength; automatic level; 6 1/2" electrodynamic speaker. Splendidly styled, lustrous black plastic cabinet of modern design to match the most luxurious furnishings. Size 16 1/2 x 19 1/2" deep.

Cat. No. 36-104 Net **\$249.50**

Cat. No. 36-105 Model T-67. The same TV receiver as the Model T-61 above but in mahogany veneer cabinet of similar design.

Net Price **\$269.50**

See the listing of TV antennas on page 40 of this catalog for the most modern and dependable antenna designs available in every price range.



E

TRANSVISION TELEVISION KITS (D) TV-FM Receiver Kit 10BL

The really economical way to enjoy big-picture, direct-view, quality television — assemble it yourself and save as much as half the cost! EVERYTHING required to assemble a complete quality TV-FM set is included in the kit, except a screw driver, cutting pliers, and a soldering iron. A sharp, steady 115-square-inch picture is achieved with unsurpassed brightness, even in a lighted room. And no thrill compares to that of the man (or woman) who builds it himself, plus the fun and relaxation of a new hobby. Anyone can do it — no technical skill is required to assemble the Transvision kit and enjoy the finest in television reception in addition to saving several hundred dollars. Many housewives have successfully followed the simple, complete instruction included in every kit. Here is what the kit gives you:

Modernly styled cabinet with built-in lens that enlarges the 10-inch direct-view picture tube to 115 square inches. Receives all 12 TV channels and FM radio. (The FM radio comes to you factory-assembled in the kit.) 23 tubes, including picture tube and 2 rectifiers. 4 mc. band width for full picture definition. High-fidelity FM sound reproduction. 3 stages of picture i.f., pre-tuned at factory. 2 stages of sound i.f., factory pretuned. Maximum picture sensitivity better than 50 microvolts. 1 stage of video amplification. Int. frequency — audio 21.9 mc. picture 26.4 mc. 13-channel r.f. front-end unit pre-wired and tuned with continuous tuning for FM radio. High-fidelity speaker. Chassis size 22 x 17 1/2 x 4". Cabinet designed by Hal Bergstrom, prominent industrial designer, is 26 x 17 x 19" deep. Also includes folded-dipole antenna and 60 ft. of lead-in wire; color-filter kit for built-in lens.

Cat. No. 36-280 Net Price **\$284.00**

(E) Television Kit Model 10A

Easy-to-assemble Transvision kit 10A is the ideal set for those who want a practically-priced, high-quality television set but do not desire FM reception. Model 10A is furnished less cabinet and may be adapted to form a unit with existing AM/FM receivers. Thus for a minimum price, brilliant expensive-quality television is acquired — a front row seat at the foot-lights of the spectacular and ever-increasing variety of television entertainment. Transvision assembly engineers have originated a unique system of assembly, with instructions and pictures keyed to each part as a package number. Anyone can follow the instructions, all you have to know is how to read! Uses 10" electromagnetically direct-view picture tube for 62 sq. in. picture; continuous tuning on all 12 channels. Supplied complete with 12-channel dipole antenna and lead-in wire. Tubes, parts, chassis are all included. No other parts are required. Time checks show a novice can assemble Model 10A in 40 hours. Television performance of Model 10A is similar to Model 10BL above.

Cat. No. 36-281 Model 10A. Net Price **\$199.00**

Cat. No. 36-282 Cabinet for Model 10A as illustrated. Net Price **\$36.00**

PROJECTION TELEVISION - HIGH FIDELITY AMPLIFIER with Dynamic Noise Suppressor



New 16" x 12" TV Picture System Hallicrafters Projection Model T-60

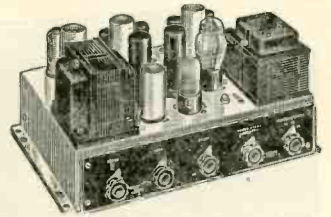
For deluxe custom installation where the desire is for the utmost realism and lifelike viewing with custom-designed installations in homes, taverns, and institutions. A projection system gives 192 square inches of picture area . . . clear, steady, optically correct and with all eye-strain eliminated. Heart of the system is a small cathode-ray tube (2 1/2" projection type), an optical unit that magnifies, reflects and projects the image, and a high voltage unit to sustain brilliance and stability. A high-quality FM sound system gives clear natural tone. System includes 8-inch permanent-magnet speaker mounted on baffle. System is assembled in compact arrangement for easy installation in book cases, or small graceful cabinets of custom design. Sturdy wood framework simplifies installation.

Excellent viewing day or night. No need to dim room. Front panel controls: contrast control for best picture definition; brightness control for best viewing brilliancy; volume control; horizontal and vertical controls for synchronization; 12 push-button channel selectors; fine-tuning control. Rear panel controls: focus control; vertical and horizontal position controls; width and height controls; vertical linearity control.

Specifications: 22 tubes plus 3 high-voltage rectifiers; selenium low-voltage rectifier; 12-channel push-button selector switch; r.f. amplifier for improved signal-to-noise ratio; 3 i.f. amplifiers; 2 video amplifiers; improved synchronizing circuits; automatic gain control; automatic black level control; inter-carrier FM sound system. Size 45 x 25 x 13" deep.

Cat. No. 36-103 Model T60 as above. Net Price \$595.00

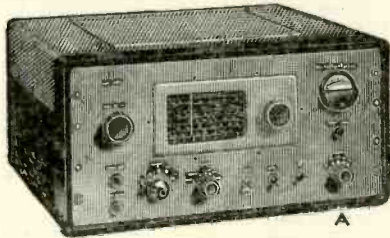
H. H. Scott Amplifier Model 210A With Dynamic Noise Suppressor



A wide-range, high-fidelity amplifier combined with the famous H. H. Scott Dynamic Noise Suppressor unit provides the best reproduction of recorded music possible and enhances both FM and AM radio reception. Extended listening range, 30 to 20,000 cycles, with negligible intermodulation or transient distortion. Power output 20 watts with less than 2% harmonic distortion, 15 watts with less than 1% harmonic distortion. Amplifier incorporates squelch circuit, whistle filter, preamplifier for magnetic pickup. Dynamic Noise Suppressor allows widest use of high- and low-frequency gain, with freedom from scratch, hiss, and rumble. High-frequency noise reduction is between 20 and 30 db. above dynamic pass band; low frequency noise reduction is 15 db. at 50 cycles, 20 db. at 30 cycles. Hum level is inaudible under normal listening conditions. Five controls, Volume, Frequency Range, Bass, Treble, Dynamic Noise Suppressor, provide maximum flexibility and easy selection of exact tonal balance to please the individual ear. Tube complements, 1-12SL7GT, 1-6SL7GT, 1-SQ7, 1-12SG7, 2-6SG7, 1-SN7GT, 2-6L6GA, 1-5V4G. Operates on 115 volts, 60 cycles. Furnished complete with instructions. Dimensions overall, 12" x 15" x 8 1/2".

Cat. No. 33-001 Net Price \$269.00

Hallicrafters - TRANSMITTERS - RECEIVERS - National



(A) Hallicrafters New HT-19 Medium Power Transmitter

A completely self-contained unit for the modern-minded ham offers both Narrow Band FM and CW, plus provisions for AM, to give maximum flexibility on 5 popular bands. Basically the HT-19 consists of a VFO (ECO or Pierce crystal), a frequency modulator with speech amplifier, and r.f. buffer and final amplifier. The 4-65A in the final output stage gives 125 watts output. Features high stability and extremely low FM distortion. Pilot lights for filament and plate power. Temperature compensation and voltage regulator for oscillator stability.

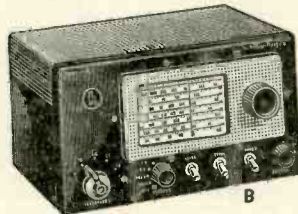
CONTROLS: 5-position switch for 3 crystals, VFO, or NBFM; band selector for 3.5-4.0 MC, 7.0-7.3 MC, 14.0-14.4 MC, 21.0-21.45 MC, and 27.16-29.7 MC; final coils changed inside the unit, all five coil assemblies inside at all times; Check Switch turns on osc. for "spotting" signal on receiver; Plate Switch for "B" power and makes remote control connections; Power Switch in line; Deviation Control holds 4 ratio; Osc. Plate Tuning for osc. gang and calibrated dial; Power Amp. Tuning. Push-button ma. meter.

EXTERNAL CONNECTIONS: Mike connector; keying terminals; 50-600 ohm output; 6 terminals for remoteing; 4 terminals for applying AM from external modulator.

TUBE COMPLEMENT: 3-6BA6's — oscillator, FM, and speech amp.; 6L6 Buffer; 4-65A output; VR-150 and VR-105 regulators; 5Y3GT and 2-866's rect.

Aerodized cabinet with satin gray finish, chrome and black knobs. Size 20" x 10 1/2" x 18" deep. Operates on 105-125 volts 50-60 cycles.

Cat. No. 35-017 HT-19 as above complete with tubes. Net Price \$359.50



(B) Hallicrafters Model HT-18 Exciter

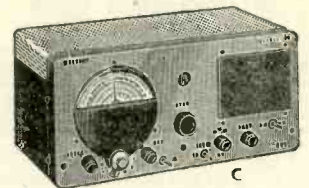
Modernize your old transmitter with this new variable master oscillator. Narrow band FM and calibrated 5-band VFO complete with all coils and built-in power supply. Frequency range 3.5-4.0 mc., 6.8-7.425 mc., 14.0-14.4 mc., 21.0-21.5 mc. and 27.185 to 29.7 mc. Built-in pre-amp for high-impedance crystal or dynamic microphones. Oscillator keyed for CW use. Tubes: 6BA6 ECO or crystal oscillator; 6BA6 frequency modulator; 6BA6 AF; 6L6 output; VR105 voltage regulator; VR150 voltage regulator; 5Y3GT/G power rectifier. For operation on 105-125 volts 50-60 cycles. Crystals, used if desired, are in the 3.5 megacycle band but are not supplied with unit.

Cat. No. 35-016 With tubes but no crystals. Net Price \$110.00

(C) New Hallicrafters S-51 Receiver

For yachtsmen, mariners, pilots, the S-51 covers from 140 kc. to 12.5 Mc. in 4 bands plus three fixed-frequency channels which may be pre-set in 200-300 kc. and 2-3 Mc. range. Maximum convenience is assured by directly calibrated main tuning dial and hand divisions so that calling and working frequencies lie in same band. Special precautions protect against hazards of salt sea air; trimmer condensers are treated, transformers impregnated, heavily plated. BFO with pitch variable from front panel; combined a.v.c. and b.f.o. switch; separate r.f. and a.f. gain controls. FM speaker water-resistant and has internal rubber shock mounting. Sensitivity less than 10 microvolts at all frequencies. Audio output 1 watt. Tube complement: 3-6SS7; 2-7C6; 35L6; 6V6; 7A6; and 35Z5 rect. Operates on 110 v. AC/DC or 6, 12, 32 v. DC. Dimensions: 18 1/2 x 8 1/2 x 9 1/2". Complete with tubes, less vibrapack.

Cat. No. 36-066 S-51 as above. \$149.50 Net Price
Cat. No. 36-151 6-volt vibrapack complete. \$22.50 Net Price
Cat. No. 36-152 12-volt vibrapack complete. \$22.50 Net Price
Cat. No. 36-153 32-volt vibrapack complete. \$22.50 Net Price

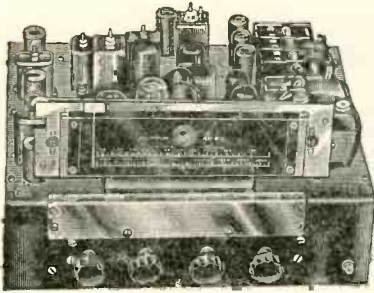


(D) National HRO-7

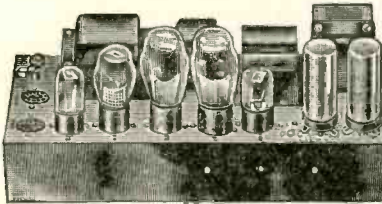
The modern version of the famous HRO communications receiver, incorporating all its time proven features plus laboratory circuit developments which result in a new custom-built receiver. Some of the features are: automatic, adjustable threshold noise limiter; improved high-frequency oscillator; 2 miniature tubes — 6C4 and OA2 for voltage regulation and oscillator stability; slide rule type calibration for all coil sets. Frequencies from 1.7 to 30 mc. are covered with the 4 sets of coils supplied; five additional sets are available for frequencies from 50 to 2050 kc. Accessory socket, supplying 6.3 volts AC, 150 volts DC regulated and 240 volts DC unregulated, built-in for attaching crystal calibrator, HF converter, FM adaptor, record player, etc. Tubes: 4-6K7, 2-6J7, 6C4, 2-6H6, 6SJ7, 6V6GT/G and OA2. 3 watts maximum output. Uses type 697 power pack; 75 watts at 115 volt 50-60 cycles 1 phase, with switch for 230 volts included. Smooth gray enamel cabinet 19 1/2 x 10 x 10". Complete with coils, tubes, and power supply, less speaker. \$292.50

Cat. No. 36-029 Net Price
With coils, tubes, power supply and speaker. Cat. No. 36-030 Net Price \$311.00
Cat. No. 36-031 Type MCR speaker only. Net Price \$12.00
Cat. No. 36-032 Type 697 Power supply. Net Price \$20.36

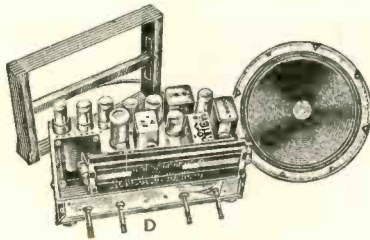
AM - FM TUNERS - Meissner - KITS SIGNAL SHIFTER



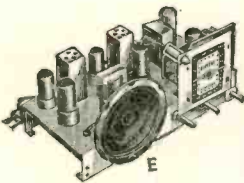
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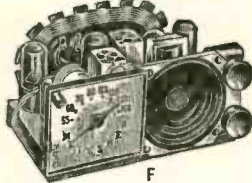
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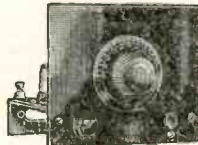
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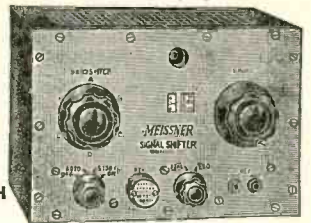
D



E



F



G

(A) Meissner AM-FM Tuner and Amplifier

For replacement or custom installations. Frequency range of FM, 88-108 mc; 535 to 1620 kc on AM. 18 watts power output at less than 2% harmonic distortion. Audio fidelity flat within plus or minus 2 db. from 50 to 15000 cps. Hum level 65 db. below full output. Less than 20 microvolts sensitivity. Supplied with phono input. Two indoor antennas supplied — loop for AM, and folded dipole for FM reception with provision for external antennas. Designed for 12 ohm PM speaker (not supplied). Draws 190 watts at 105-125 volts, 50-60 cycles. 22 tubes: 3-6SK7, 6SA7, 6H6, 5-6AG5, 6C4, 2-9001, 6AL5, 2-6J5, 6U5/6G5, 6SN7GT, 2-6L6, 5Y3G and 5V4G. Tuner chassis 14 1/2" x 12 1/2" x 8 1/2" high. Amplifier 7 1/2" x 16 1/2" x 7" high. Complete less speaker and cabinet. Cat. No. 36-023 Type 9-1093 Net Price \$198.40

(B) Meissner FM Receptor

For conversion of any AM receiver to AM-FM. Covers the 88 to 108MC FM band and may be used on a PA system. Flat audio fidelity plus or minus 2db. Connection easily made to phono input of receiver. Tubes: 2 6AG5; 2 6BA6; 2 6C4; 1 6AL5; and 6X5GT rectifier. 105-125 volt 50-60 cycles power supply built in. Walnut cabinet. 12 3/4" x 8" x 6 1/2". Cat. No. 36-020 Net Price \$38.33

Meissner AM-FM Tuner

A combination AM-FM receiver of exceptionally high fidelity for custom installation or replacement. Covers broadcast band from 527 to 1620 kc and the FM band from 88 to 108 mc. Draws 80 watts at 105-125 volts 50-60 cycles. Frequency response is flat plus or minus 2 db. from 30 to 15,000 cycles. Less than 10 microvolts sensitivity. Output is 8 volts at the high impedance terminals and .75 volts at the 500 ohm terminals. Hum level 60 db. below output. May be used with record player. Tubes: 9003 RF amplifier; 6BE6 oscillator converter; 2-9003 456kc IF amplifiers; 6AL5 detector for the AM section. For the FM section: 6AG5 RF amplifier; 6C4 oscillator; 6AG5 converter; 3-6AG5 10.7 mc IF amplifiers; 2-9001 limiters and 6AL5 detector. Two 6C4's used for audio amplifiers, 6U5/6G5 tuning indicator, and 5Y3GT/G rectifier. Chassis 16 1/2" x 10 1/2" — requires 1 1/2" between chassis and panel. Cat. No. 36-022 Type 9-1091 Net Price \$156.80

(C) FM Pilotuner

Adds frequency modulation to any AM set, enabling you to tune the entire FM range of 88 to 108Mc in any location where FM reception is available. Connects directly to the phono input or may be wired in (directly). Tubes: 3 — 6BA6, 6BE6, 6AL5. 9" x 7" x 6" walnut cabinet. For 105-125 volt 60 cycle operation. Cat. No. 36-019 Net Price \$29.95

(D) Espy Model No. 7-B FM-AM Chassis

An 11-tube AC superheterodyne with an improved FM circuit designed especially for custom installations. Large dial with dual pilot light illumination and smooth tuning with high-ratio tuning condenser, covering 540 to 1700 kc. for AM and 88 to 108 mc. for FM. Tubes: 6BA6 FM RF amplifier; 7Q7 AM oscillator, mixer; 7AH7 IF amplifier; 7AG7 FM detector driver; 7A6 FM detector; 7F8 FM oscillator mixer; 7C6 AM detector audio amplifier; 7F7 audio amplifier-inverter; 7C5 push-pull power amplifier; 5Y3 rectifier. The model 7-B chassis is complete ready to operate with tubes, loop antenna for AM and folded dipole for FM, speaker and hardware for mounting in bookcase, table cabinet, or console. Chassis 13 1/2" x 9" x 9". Operates on 105-125 volts 50-60 cycles. Draws 80 watts. Cat. No. 36-093 Net Price \$84.50

(E) Meissner BC and SW Superhet Kit

Easily constructed with only pliers, screw driver and soldering iron, this kit covers frequencies from 550 to 1600 kc. and 6 to 18 mc. High quality components and careful circuit design. Filter choke for hum-free output with no power loss; IF wave trap eliminates interference. 5" speaker. Tubes: 12SK7 RF; 12SA7 oscillator mixer; 12SK7 IF; 12SQ7 detector, AVC and audio amplifier; 35L6GT beam power output; 35Z5GT rectifier. Pilot light on dial. Operates on 110 volt AC/DC. Complete with speaker and tubes. Cat. No. 36-026 Type 10-1199 Net Price \$27.72

(F) Meissner BC Band Superhet Kit

An easily constructed receiver that covers the broadcast band from 540 to 1600 kc. High gain reception with loop antenna feeding directly into mixer converter tube. Component parts of highest quality. Cable drive dial assembly calibrated in kilocycles with pilot light illumination. Tubes: 12SA7 mixer-oscillator; 12SK7 IF; 12SQ7 diode detector and first audio; 50L6GT beam power output; 35Z5GT rectifier. Operates on 110 volt AC/DC. Complete with speaker and tubes. Cat. No. 36-024 Type 10-1191-A \$22.67 Net Price Cat. No. 36-025 Type 11-8269-I Cabinet (Ivory) Net Price \$2.40

(G) Meissner 3-tube AC/DC Kit Type 10-1193

A regenerative kit for beginner. Three type 76 tubes, plug-in coil for broadcast; capable of long distance reception. Operates on 110 volt AC/DC Complete, less tubes and headphones. Cat. No. 36-001 Net Price \$6.77 Type 10-1192 — Two tube kit. Same as above but 2 No. 76 tubes. Cat. No. 36-002 Net Price \$5.72 Accessories for above kits:

Cat. No.	Type	Range	Net Price
36-003	18-2940	70-200 meter coil	\$0.50
36-004	18-2941	35-70 meter coil	.50
36-005	18-2942	17-35 meter coil	.50
36-006	18-2944	545-1500 meter coil	1.23
Cat. No. 36-007	No. 76 tube	Net Price	.84
Cat. No. 36-008	2000 ohm dual headset.	Net Price	1.35
Cat. No. 36-009	Aerial kit.	Net Price	.69

(H) Meissner Model 9-1090 Signal Shifter

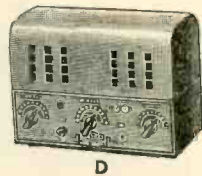
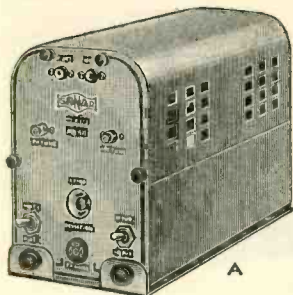
A variable-frequency exciter that cuts QRM to a minimum. Turret-mounted coils provide 6-position shielded band switching. Eye tube key and tuning indicator. Fundamental frequency is doubled in the tuned plate circuit of a 6V6GT/G electron coupled oscillator and again in the doubler amplifier stage using an 807. VR150 and OD-3 voltage regulators. 2 — 5Y3G rectifiers in parallel. 6U5/6G5 tuning indicator. Complete with power supply, coil strips for 80, 40, 20, 15 and 11-10 meter bands, tubes — without crystals. For 110 volt 60 cycle AC operation. Cat. No. 36-021 Net Price \$99.50

New Signal Shifter Kit

Now the Meissner Signal Shifter described above is available in complete kit form. With a pair of pliers, screw driver, and soldering iron you can duplicate the peak performance of the factory-built model. Shielded turret is furnished as a unit, ready to install. Complete kit includes tubes and power supply. Cat. No. 36-121 Net Price \$49.75

See the complete listing of Meissner coils elsewhere in this Catalog. And for a superb instrument to use in servicing any receiver see the new Meissner "Analyst" in the "Service Instruments" Section.

SONAR TRANSMITTING EQUIPMENT - RME - Gon-Set



(A) Sonar Model MB-611 Mobile Transmitter

A small transmitter designed for 6, 10 and 11 meter operation; can be operated from any type of power supply. May be installed in any type of vehicle or used for fixed station operation or as a driver to a high-power final amplifier. Has a 40 meter Xtal oscillator 6000 kc. to 8000 kc. Power output is approximately 22.5 watts. Requires from 250 to 600 volts at 100 mills from vibrator, dynamotor or AC supply. Power consumption — 2.6 amps in standby and 10 to 20 amps in transmit from 6 volt battery. Supplied with 10- and 11-meter output; specify 6-meter output when ordering if desired. Any microphone with output from -52 db. or better may be used. Tubes: 6SL7 speech amplifier; 6SL7 Xtal oscillator and phase modulator; 6SL7 DC amplifier and deviation amplifier. 2-6SK7's frequency multipliers; 6AF6G dual-eye tuning indicator; 2E26 power amplifier. Complete with tubes less crystal and power supply. **\$72.45**

Sonar Model CFC Frequency-control (B) Exciter

Designed to meet the requirements for good VFO control with provisions for CW keying and a built-in CW monitor. Can be switched for either VFO or spot-frequency crystal control; 1000 kc. secondary standard crystal is resonated with WWV, permitting accurate check points for the VFO in all amateur bands. Oscillator tunes from 1620 kc. to 2000 kc. on 160 meters. Output 4 to 5 watts. A link coupling to any type of transmitter is provided. The dial is directly calibrated for all bands with a 6:1 vernier for ease of operation. Draws 60 watts on 110-125 volts 50-60 cycles. 75 to 300 ohm impedance on 80 and 40 meters. Tubes: 6SK7 VFO oscillator; 6SL7GT 1 mc. crystal oscillator and spot crystal oscillator; 6V6 intermediate buffer amplifier; 6L6 wide-band buffer doubler; VR150 voltage regulator for VFO oscillator; 5Y3GT rectifier. **\$59.75**

RME - Gon-Set Receiving Equipment

(E) Gon-Set Converters Gon-Set "6-15" Converter

A brand new design; a radical new development first released for sale in February, 1948. Frequency range 6, 10-11, 15 meters all combined in one unit without plug-in coils or coil band-change switches. Actually 3 separate converters with individual antenna input circuits. Output frequency is 7 mc. Large bandspread dial with 20:1 vernier drive and average dial length of 11". Uses 8 tubes (12 actual tube sections). **\$75.00**

20 Meter Converter

Same as 6-11 above but for the 20-meter band. **\$39.95**

(G) RME HF 10-20 Converter

An efficient converter covering frequencies between 14 and 30 mc., with three bands: 14-14 mc., 21-21.45 mc. and 27-29.7 mc., for 20, 15 and 11-10 meter bands. Tubes: 6BA6 TRF, 6J6 mixer, 5Y3GT rectifier and VR150 voltage regulator. Three antenna input connections; shielded 300 ohm output. Oscillator temperature-compensated for maximum stability. Gray steel cabinet 11" x 12" x 11". Operates on 105-125 volts 50-60 cycles. **\$77.00**

Cat. No. 36-070 Net Price

PS-50 Power Supply

Designed to fit into VFX-680 cabinet as power supply for AMP-50; outlets provided for VFX-680, any AC operated relay. May be used with any similar exciter or amplifier. Power input 110-120 volts, 50-60 cycles. Power output 850 volts at 130 mills; 6.3 volts at 3 amps. Protected by 5 amp. instrument-type fuse. Uses 5R4GY rectifier. Size — 10 x 5 x 6".
Cat. No. 35-127 Black finish
Cat. No. 35-128 Gray finish **\$33.45**

Net Price

AMP-50 Amplifier

Link-coupled to the VFX-680, the AMP-50 is an excellently designed low-power amplifier using the 2E22 power pentode with the high-efficiency plug-in coil system. Plate-tank is a split-stator condenser and a swinging center-link coil for balanced loading and harmonic suppression. Power output 50 watts; input impedance 150 ohms. Complete with tubes — 2E22, 6Y6G. 3" meter with 2 direct reading scales. Size — 3 1/2 x 19 x 6".
Cat. No. 35-125 Gray finish
Cat. No. 35-126 Black finish **\$57.45**

Net Price

(D) Sonar Model XE-10 NBFM Exciter

A complete NBFM unit having its own power supply. Designed for conversion of any 28 mc. CW transmitter to NBFM phone. Uses the exclusive Sonar phase modulated circuit with crystal control or may be used with any type of VFO. 80 meter oscillator — frequency range of crystal 3130 kc. to 4000 kc. 3-4 watts power output; 75 to 300 ohms RF output impedance. For operation on 40, 20, 15, 11, 10, 6 and 2 meter bands. Draws 40 watts at 110-125 volts 50-60 cycles. Uses any microphone with an output from -48 db. to -52 db. Tubes: 6SL7 speech amplifier; 6SL7 Xtal oscillator and phase modulator; 6V6 doubler; 5Y3 rectifier. Complete with tubes but less crystal. **\$39.95**

Cat. No. 35-032 Net Price

10-11 Meter Converter

Converts broadcast, auto, or communications receivers to 10-11 meters for excellent mobile or fixed reception. Built-in pre-selection; receiver is tuned to converter output, 1500-2000 kc., and converter is tuned to desired station. Uses 6AK5 RF, 6AK5 mixer, 6C4 oscillator, and 6B2 voltage regulator. Complete band-spread between 27-30 MC, with 8:1 vernier drive. Illuminated dial, ON-OFF switch, built-in connecting cables. Steel case, 3 1/2" x 5 1/2" x 5 1/2", finished in gray wrinkle. Complete with tubes, instructions. **\$39.95**

Cat. No. 36-076 Net Price

6 Meter Converter

Same as above but for 6 meter band. **\$39.95**

Cat. No. 36-079 Net Price

(G) RME VHF-152A Converter

Designed for use with any receiver, the 152A covers the 11-10, 6 and 2 meter amateur bands. Tuning range 27 to 29.8 mc., 49.5 to 54.2 mc. and 143.8 to 148.2 mc. Tubes: 6AK5 RF amplifier, 6J6 mixer oscillator, 5Y3GT rectifier and VR150 voltage regulator. Provided with 4 antenna input connections for best results; with 300-ohm output impedance through shielded cable. Gray steel cabinet 11" x 12" x 11". Operates on 105-125 volts 50-60 cycles. **\$86.60**

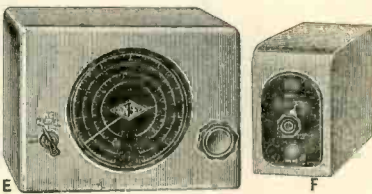
Cat. No. 36-069 Net Price

Sonar Model VFX-680 All Band (C) Exciter

A complete all-band NBFM phone and CW exciter with built-in power supply. The newly developed Sonar NBFM modulator and VFX oscillator is incorporated. By inserting a quartz crystal, the oscillator operates from VFO to Xtal control and by varying the VFX control, any type cut crystal becomes "rubberized." The oscillator has a tuning range of 1565 kc. to 2000 kc., on 160 meters. VFX shift: 30 kc. on 80 meters; 60 kc. on 40 meters; 120 kc. on 20 meters; 240 kc. on 10 meters and 480 kc. on 6 meters. Four to six watts power output. Two monitors — one for CW and one for NBFM phone. Frequency range — 80, 40, 20, 15, 11, 10, 6 and 2 meters with an output on all bands except 6 and 2 meters. Draws 65 watts at 110-125 volts 50-60 cycle. Plug in coils allow 2 band operation with one set of coils. Exciter supplied with 40 and 20 meter coils. Uses any microphone having an output from -48 db. to -52 db. Size 5 1/2" x 19" x 8 1/2". Tubes: 6AG7 VFO/VFX oscillator; 6SL7 speech amplifier; 6SL7 NBFM modulator and NBFM amplifier; 6AG7 1st frequency multiplier; 5Y3 rectifier; 6AF6G dual tuning indicator; VR150 voltage regulator for oscillator. **\$87.45**

COILS FOR VFX-680
Cat. No. 35-027 80 meter Net Price . \$1.50
Cat. No. 35-028 15 meter Net Price . 1.50
Cat. No. 35-029 10 meter Net Price . 1.50

CABINETS
Cat. No. 35-030 Black finish Net Price . \$6.75
Cat. No. 35-031 Gray finish Net Price . 6.75



(F) RME MB-3 Monitor

For monitoring phone and CW. Will monitor your own transmission even on your frequency. Other uses of the MB3 are modulator for MCW, adjusting modulation equipment, code practice oscillator. Size 4" x 5" x 6". **\$27.50**

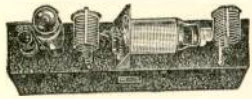
Cat. No. 36-072 Net Price

(G) RME DB-22A Prescaler

Adds 3 tuned circuits and 2-6AB6 tubes ahead of the RF stage in your present receiver for tremendous increase in gain. Range 540 to 44,000 kc. in four bands. Built-in power supply with 6X6 tube. 20 to 25 db. gain over entire range. 7" dial calibrated on all bands. Gray metal cabinet 11" x 12" x 11". Operates on 105-125 volts 50-60 cycles. With tubes. **\$71.00**

Cat. No. 36-071 Net Price

Millen - TRANSMITTING RECEIVING Equipment - HYTRON STANCOR



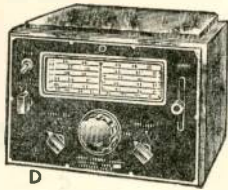
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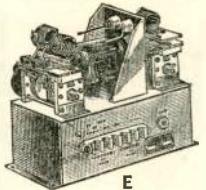
B



C



D



E

(A) MILLEN

50-Watt Transmitter-Exciter

6L6 and 807 in compact relay rack mounting. Tri-tet circuit used to obtain harmonic output is reduced to simple tetrode circuit for output at crystal fundamental by shorting cathode tank. Output at 4th harmonic of crystal frequency is ample to drive 807 operated as straight amplifier or frequency doubler. Thus, with a single crystal of correct frequency 25 to 50 watts or more may be obtained in four bands.

Entire unit designed to work from one 250 ma. supply delivering up to the 750 volt maximum working rating of the 807. Fixed bias of 45 volts is required, and heaters consume 1.8 amp. at 6.3 volts. The 200 ma. meter may be switched to read plate current in either stage.

Because of the frequency multiplications obtainable in both oscillator and 807, several possible coil and crystal combinations will give the same output frequency.

Cat. No. 35-071 Type 90800 less tubes, but including one set of coils. Net Price . . . \$42.50
BE SURE TO STATE BAND IN WHICH CRYSTAL WORKS AND BAND IN WHICH OUTPUT IS DESIRED.

CATHODE			EXTRA COILS			PLATE		
Cat. No.	Band	Net	Cat. No.	Band	Net	Cat. No.	Band	Net
35-072	160	\$0.90	35-075	80	\$1.25			
35-073	80	.90	35-076	40	1.25			
35-074	40	.90	35-077	20	1.25			
			35-078	10	1.25			

(F) High Voltage Power Supply

This unit has a DC output of 700 volts, with maximum current of 250 ma.; supplies AC filament power of 6.3 volts at 4 amps. Ideal for use with transmitters such as the 90800, as well as for general laboratory purposes. The power supply uses two 816 rectifiers and has a two-section pi filter with 10h chokes and a 2-2-10 mfd. bank of 1000 volt capacitors. Panel 8 1/2" x 19" rack size. Cat. No. 35-045 Type 90281 less tubes. Net Price . . . \$84.50

Stancor ST-202A Transmitter Kit



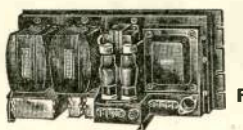
Compact, desk-type, high-frequency transmitter in an easy-to-assemble kit form. Six bands between 3.5 and 30 mc. — 10, 11, 15, 20, 40 and 80 meters with six crystals for internal frequency control. Power consumption 335 watts at 115 volts 60 cycles. Tubes: 6V6 oscillator; 6L6 intermediate; 5R4-GY HV rectifier; 5Y3GT 1V rectifier; and either one of the following for power amplification to suit the operator: 35T-35TG-HK54-811 or 5514. Kit includes cabinet, chassis, bottom plate and all circuit and constructional components. A prefabricated, cabled harness assures a neat under-chassis wiring job. Every step in construction is covered by a detailed instruction manual. Accessories required but not furnished are: milliammeter, 5 tubes, amplifier tank coils, and crystals. Net Price . . . \$92.80

(B) Millen RF Power Amplifier

This 500-watt amplifier may be used as the basis for a high-power amateur transmitter or as a means for increasing the power output of an existing transmitter. Assembled on a 10 1/2" relay rack panel which carries grid and plate tank tuning capacitor dials, as well as the grid and plate current milliammeters. Plug-in inductors furnished for operation on 10, 20, 40 or 80 meter bands. With one set of coils, less tubes. Cat. No. 35-046 Type 90881 Net Price \$89.50

(D) Millen 90711 VFO

A complete transmitter control unit with stable gang-tuned electron-coupled oscillator and amplifier; voltage regulated power supply 105-125 volts, 50-60 cycles; accurately calibrated full-vision bandspread dial for 10, 15, 20, 80 meters; provisions for controlling complete transmitter from oscillator panel. Unusually stable and drift free. Output may be coupled to low-impedance link or, by means of the plug-in adaptor, output may be plugged into a transmitter crystal socket or connected directly to a grid. Bandspread changing by means of a switch on oscillator; no plug-in coils. Tube complement — 6SK7 osc., 6L6 amp., 5Y3-GT rect., VR-150 voltage regulator, VR-75 voltage regulator. Size — 12 1/2" x 12" x 11" high. Complete with tubes and impedance adaptor. Cat. No. 35-091 Net Price . . . \$89.75



F



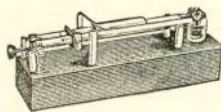
G

(G) Millen Single Sideband Selector

Will improve amazingly the effective selectivity of any amateur receiver, reducing noise and heterodyne interference. Operates on the principle of reduction of receiver band to 25% normal, eliminating by selection either of the sidebands and working on the remaining sideband plus carrier. Cabinet is designed to fit nicely into the hamshack beside the receiver, connecting to receiver without circuit changes. Circuit utilizes 2 crystals; 1 — 6SA7 converter, 1 — 6SK7 if amplifier, 1 — 6SN7GT det. and audio amp., 1 — 5Y3GT rect.; rf and af gain controls; lever type sideband shift switch. Cat. No. 36-185 Type 92105 complete with tubes, input cable, crystals for 455/6 kc i.f. receiver. Net Price . . . \$75.00

Hytron

Hy-Q 75 VHF Transmitter Kit



Oscillator for 1 1/2 and 2 meters. Silver-plated tank circuit for low RF losses. Special RF chokes for peak operation. Tunes 135 to 250 mc. Uses HY75A tube. Useful power to load at 144 mc. is 14 watts on CW; 11 watts on phone. Adjustable to match parallel-line or concentric feeder. With instructions. Cat. No. 35-038 Net Price . . . \$9.95

(C) Millen HF Transmitter

Provides 75-watts on 11-10, 6 and 2 meters. Incorporates the Billey CCO-2A oscillator (described elsewhere in this section) with one 6AG7; uses standard 7 mc. crystals for 10-meters and Billey AX-3 crystal for 6 and 2 meters. Frequency multiplication with a 2E26 tripler driving an 829B final amplifier, 2E26 is used for 2-meter output. Millen plug-in coils provide link selection for each band. Chassis and front panel are copper-plated; front panel, 8 1/2" x 19", is finished in black wrinkle. All circuit tuning controls on front panel; terminals for power supply and RF output in rear; 4-position meter switch and 0-30 ma. meter. Furnished with 11-10 meter grid and plate coils; less tubes crystal and power supply. Cat. No. 35-081 Type 90810 Net Price \$69.75

GRID COILS				EXTRA COILS			
		PLATE COILS					
Cat. No.	Band	Net	Cat. No.	Band	Net	Cat. No.	Band
35-082	6	\$1.80	35-084	6	\$1.80		
35-083	2	1.80	35-085	2	1.80		

(E) Millen 90811 HF RF Amplifier

The amplifier section of the 90810 Transmitter is available separately, with the same features described above: plug-in coils for rapid band change; 75-watt output. Furnished with 10-meter coils, less tubes. Size 4 x 7 1/2 x 6 1/2". See above for 6, 2 meter coils. \$33.00
 Cat. No. 35-086 Type 90811 Net Price

COILS FOR 20 METERS			
Cat. No.	35-087	Grid coils	Net Each
Cat. No. 35-088	Plate coils	Net Each	1.80



H

(H) MILLEN R-9'er Antenna Matching Preamplifier

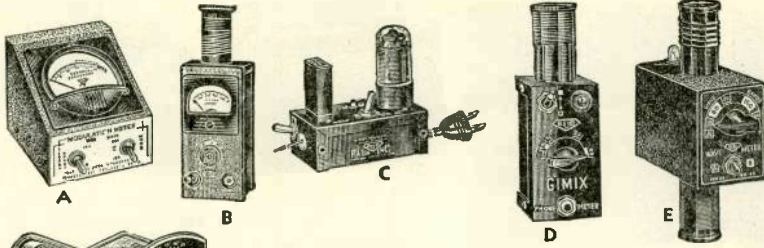
You can gain 30 to 60 db. for your television or 6, 10, 20 meter receiver with this electronic impedance matching device and broad band preamp. Amount of gain depends on make of receiver and antenna and extent of existing mismatch. Once tuned, the unit automatically matches receiving antenna to receiver, an important factor usually overlooked. Uses 1 — 6AK5 tube. Provided with cable plug for power connection to receiver, coax connectors and plugs for antenna and receiver connection. Cat. No. 36-170 Type 92101 less tube and coil. Net Price . . . \$24.75

COILS				
Cat. No.	Type	Band	Channel	Net
36-171	46906	48-55 mc.	-	\$3.15
36-172	46910	27-32 mc.	-	3.15
36-173	46920	13-15 mc.	-	3.15
36-174	46992	54-60 mc.	2	3.90
36-175	46993	60-66 mc.	3	3.90
36-176	46994	63-72 mc.	4	3.90
36-177	46995	76-82 mc.	5	3.90
36-178	46996	82-88 mc.	6	3.90

A wide selection of Millen quality radio equipment and components is listed in this catalog. See index.

WAVE METERS

SYLVANIA - BUD - MILLEN
TRIPLETT



(E) BUD Wave Meter

Absorption-type wave meter for 5 to 160 meters. Useful in quickly determining frequency to which each stage of transmitter is tuned. Can be used as neutralizing indicator, and to indicate standing waves on antenna feed lines. Band-switching type, no plug-in coils. **\$8.08**
Cat. No. 35-021 Net Price

(D) BUD Gimix

One of the most useful adjuncts to proper transmitter adjustment and operation. A multi-purpose unit, can be used as a wave-meter, monitor, field strength indicator, carrier shift indicator, and a sensitive neutralizing instrument. Calibrated for 10, 15, 20, 40, and 80 meter amateur bands. **\$8.13**
Cat. No. 35-020 Net Price

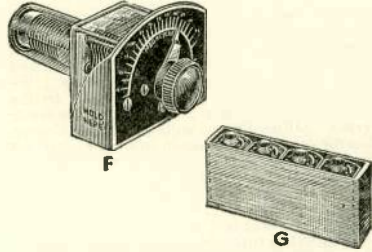
(F) Millen

Midget Absorption Frequency Meters

These handy, absorption-type meters can be poked into shield compartments, coil cans, chassis corners to check harmonics, parasitics, tank tuning, and a host of other applications. Quickly show what is going on in a circuit.

Cat. No.	Type	Range-Mc.	Net Price
36-010	90605	3-10	\$4.50
36-011	90606	9-23	4.50
36-012	90607	23-60	4.50
36-013	90608	50-140	4.50
36-014	90610	105-150	6.00
36-015	90609	130-170	6.00
36-016	90604	160-210	6.00
36-017	90619	350-1000	15.00

(G) Type 90600. Types 90605-90608 in wooden case; 3 to 140 mc. **\$18.00**
Cat. No. 36-018 Net Price



(B) Triplett Frequency Meter

Tuned absorption-type meter covering the 3.5-4, 7-7.3, 14-14.4, 20-21.5, 28-30 MC amateur bands. Incorporates a germanium crystal and DC milliammeter indicator for greater sensitivity. Band-change switch. Audio jack for monitoring phone signals. A fully shielded unit of pocket size. Gray "hammered" enamel finish with black trim. **\$14.45**
Cat. No. 36-075 Net Price

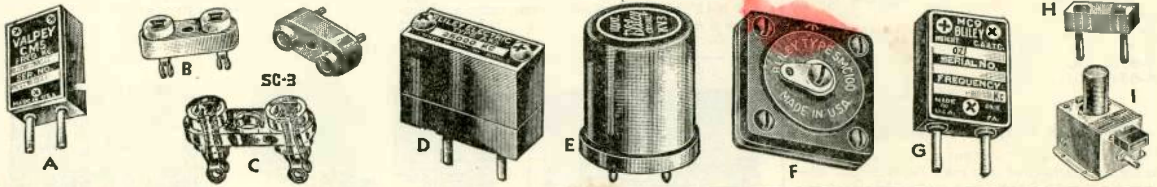
(C) BUD Frequency Calibrator

A simple, inexpensive device for checking transmitter frequency to comply with FCC regulations. A completely self-powered 100 KC oscillator, it gives 100 KC check points on all bands up to 30 MC. Plugs into 110 volt receptacle; pick-up lead connects to antenna binding post of receiver. With ON-OFF switch and "Standby" switch. **\$13.96**
Cat. No. 35-022 Net Price

(A) Sylvania Modulation Meter

Model X-7018. Designed for checking radio-telephone transmitters, this meter may be used as phone monitor. Meter reads from 0 to 120% modulation with radio frequency range to 64 mc. Size 4 1/4 x 4 x 4". Uses no tubes, AC or battery power. **\$34.75**
Cat. No. 35-040 Net Price

CRYSTALS - Sockets - Adapters



(A) Valpey Amateur-band Crystals

Crystals for frequency control; in hermetically sealed, low loss CM-5 crystal mount.

A flat, rectangular mount, the CM-5 has pin spacing to permit mounting two units in one standard octal socket, or for close grouping in limited space. Case is of high quality, low loss phenolic, hermetically sealed with neoprene cover gasket. High nickel content, stainless steel electrodes. Cover, screws, pins are brass with heavy nickel plate.

Cat. No.	Band	Net Price
41-015	40 Meters	\$2.80
41-016	80 Meters	2.80
41-017	20 Meters	3.50
41-018	10 Meters	4.50
41-019	12.5-13.5 MC	3.50
41-020	6.25-6.75 MC	2.80

(B) Millen Crystal Sockets

Steatite insulation holds strong contacts; Integral bushings project thru round holes in panel.

Cat. No.	Type	Pin Diam.	Spacing	Net Ea.
41-040	33002	.125"	.750"	25c
41-041	33102	.095"	.500"	
41-042	33202	.125"	.500"	

SC National Crystal Sockets

Cat. No.	Type	Pin Diam.	Spacing	Net Ea.
41-043	SC-1	1/16"	.500"	32c
41-044	SC-2	3/32"	.436"	
41-045	SC-3	1/8"	.750"	

(C) Amphenol Type 54-2

Polystyrene crystal holder socket. Contacts are special phosphor bronze, silver plated. Takes holders with 1/8" prongs, 3/8" centers. Cat. No. 41-030 Net Each 21c

BLILEY CRYSTALS

(D) AX2 for Ham Frequencies

High-stability crystals plated to insure long-term precision and reliability. Calibrated to ±.002%. Drift less than .0002% per degree centigrade. Holder pins on .486" centers. When ordering specify frequency.

Cat. No.	Range	Supplied	Net Ea.
41-001	3500-4000 KC	±2 KC	\$2.80
41-002	7000-7425 KC	±2 KC	2.80
41-003	12500-13500 KC	±30 KC	3.95
41-004	13580-13714 KC	±30 KC	3.95
41-005	14000-14850 KC	±30 KC	3.95

(E) Type KV3-100 KC

Silver-plated precision crystal designed for use in secondary standards. Wire supports are soldered to the plated surfaces. Crystal is adjusted to exactly 100 KC at 25C. Exceptionally low drift in recommended circuit. Cat. No. 41-006 Net Each \$6.95

(F) Type SMC100 Dual 100-1000 KC

Recommended for signal generators used in alignment work. Provides 100 or 1000 KC source. In recommended oscillator circuit, 1000 KC frequency is within ±.05% at 25C; 100 KC frequency adjusted to zero beat at 25C. Cat. No. 41-007 Net Each \$8.75

(G) Type MC7 Ship-to-Shore

Supplied to specified frequency in 2000-3500 KC range. When ordering for ship receiver, specify frequency (computed by addition or subtraction of intermediate frequency of receiver). Gasket-sealed case; precision crystal tolerance ±.02%. 1/8" pins on 1/2" centers. Cat. No. 41-008 Net Each \$6.00

(H) Mosley Adapters

To adapt a given crystal holder to a socket of a different size already installed in equipment. Type 75-5 fits any crystal holder with 3/8" prong spacing to an octal or crystal holder socket with 1/2" spacing. Type 5-75 fits 1/2" prongs to 5 or 6 prong socket or 1/4" crystal holder socket. Cat. No. 41-035 Type 75-5 } Net Ea. 35c
Cat. No. 41-036 Type 5-75 }

Amphenol Mica-filled Sockets

Molded of mica-filled Bakelite. Take crystal holders with 2 prongs on 3/8" centers. May be used as dual tip jacks.

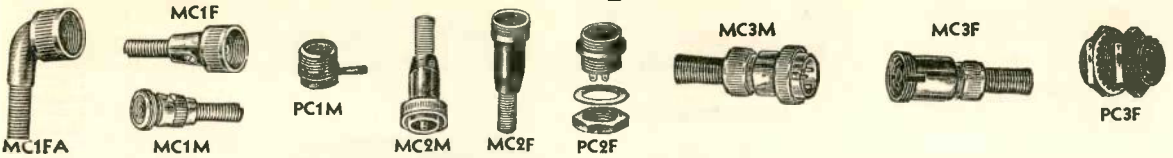
Cat. No.	For	Net Ea.
41-031	For 1/8" prongs	10c
41-032	For 3/32" prongs	

(I) Bliley CCO Model 2A

A crystal controlled oscillator for 2-6-10-11 meters that provides the advantages of VHF crystal control for either new construction or conversion. Uses one 6AG7 tube. Direct output on 6-10-11 meters; ample output to drive tripler stage on 2 meters. Uses Bliley AX2 20-meter crystals on 10 and 11 meters; new Bliley AX3 crystals for 6.2 meters. Single tuning control, bandswitch, and crystal socket on outside of metal subchassis; power and o.p. terminals at back. Supplied less tube and crystal. **\$9.95**
Cat. No. 35-051 Net Price
See Bliley crystal listing in this catalog for AX-2 crystals.

Bliley AX-3 crystals are available for 6, 2 meters. Specify frequency. Cat. No. 41-009 Net Each \$3.95

AMPHENOL Microphone Connectors



Series 75 Single Contact

Case units are wholly shielded, unbreakable connectors with butt contacts and threaded couplings; chrome finish; spring cord protectors take cords up to 1/4" diam. For extra spring-contact pressure use Type SP-MC1M. Chassis units mount in .385" hole for grounded service, in 1/2" hole for 2-circuit ungrounded service; furnished with insulating washers and locknut; male threads fit F and F.A. cable units.

Cat. No.	Type	Coupling	Net
01-065	MC1FA	F	39c
01-066	MC1F	F	32c
01-067	MC1M	M	25c
01-068	SPMC1M	M	32c
01-069	PC1M	M	19c
01-070	SP-PC1M	M	25c
01-071	CL-PC1M	M	25c
01-072	202*	M	27c
01-073	818*	M	27c
01-074	MC1F†	Phone Plug Adapter	29c
01-075	CCC1	Cap and Chain	32c

*Mtg. Plate Receptacles. †for MC1F and MC1FA

Series 80—1 and 2 Contact

For co-axial, shielded, and microphone cables, speakers, etc. Sleeve contacts and ring couplings for positive contact protected against accidental disconnections. Bakelite element in chrome-plated brass shell with spring-type cord protector for cable units; chassis units furnished with mounting hardware.

Cat. No.	Type	Contacts	Coupling	Net
01-076	M	1	M	42c
01-082	MC2M	2	M	52c
01-085	MC2M1	2	M	52c
01-077	F1	1	F	42c
01-078	F	1	F	42c
01-083	MC2F1	2	F	52c
01-084	MC2F	2	F	52c
01-080	C	1	F	25c
01-081	C1	1	M	25c
01-086	PC2F	2	F	29c
01-087	PC2M	2	M	29c

F—female. M—male.

Series 91—3 and 4 Contact

For all types of portable apparatus, altho designed primarily for microphone installation. Protected against accidental disconnection. Polarized contacts prevent incorrect insertions.

Cat. No.	Type	Contacts	Coupling	Net
01-088	MC3M	3	M	65c
01-091	MC3M1	3	M	65c
01-095	MC4M	4	M	71c
01-098	MC4M1	4	M	71c
01-089	MC3F1	3	F	65c
01-090	MC3F	3	F	65c
01-096	MC4F1	4	F	71c
01-097	MC4F	4	F	71c
01-092	PC3F	3	F	32c
01-093	PC3M	3	M	32c
01-094	SP-PC3F	3	F	65c
01-099	PC4F	4	F	35c
01-100	PC4M	4	M	35c
01-101	SP-PC4F	4	F	71c

F—female. M—male.

Cannon Connectors

Type XL Connectors

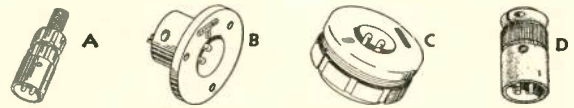
Three-contact; designed for microphones, particularly in broadcasting stations. Carry 15 amps.

STRAIGHT CORD PLUGS			
Cat. No.	Type	Fig.	Description
01-925	XL3-12*	A	Male (pin insert)
01-926	XL3-11*	A	Female (socket insert)
WALL MOUNT RECEPTACLES			
01-927	XL3-14*	B	Male (pin insert)
01-928	XL3-13*	B	Female (socket insert)
PANEL MOUNT RECEPTACLES			
01-929	XL3-14N*	C	Male (pin insert)
01-930	XL3-13N*	C	Female (socket insert)

Net \$0.71
.73

.59
.73

.68
.73



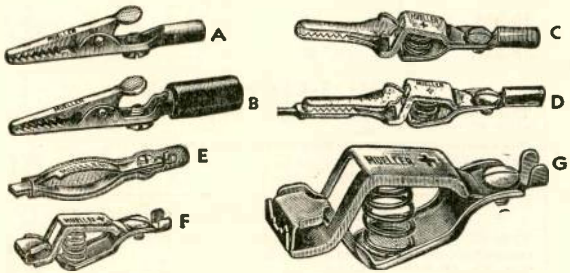
CLAMP STYLE PLUGS			
Cat. No.	Type	Description	Net
01-931	XL3-12SC†	D Male (pin insert)	1.62
01-932	XL3-11SC†	D Female (socket insert)	1.65

* Zinc shell. † Steel shell.

ADAPTER RECEPTACLES

Cat. No.	Type	Description	Net
01-933	XL3-50*	For Universal C-20A mike, etc.	62c
01-934	XL3-50T*	For Turner 211 mike, etc.	68c
01-935	XL3-50N*	For E-V, Shure, Astatic, etc.	76c

MUELLER SPRING CLIPS



A—ALLIGATOR... accurately made, slim jaws, fine-meshing teeth, strong spring for hard bite; barrel connection fits banana plug; convenient round thumb grip; made of steel, 2" long.

Cat. No. 32-775 Type 60 solder connection. Net Ea. 5c 10 for 39c
Cat. No. 32-776 Type 60CS solid copper for R.F. work, screw connection eliminates necessity for soldering. Net Ea. 7c 10 for 59c

B—INSULATED ALLIGATOR... similar to above, plus insulated handle; screw terminal; barrel fits banana plug; 2 1/4" long.

Cat. No. 32-777 Type 60HS steel, red handle Net Each 8c 10 for 69c
Cat. No. 32-778 Type 60HS steel, black handle Net Each 8c 10 for 69c
Cat. No. 32-779 Type 60CHS cop., red handle Net Each 10c 10 for 88c
Cat. No. 32-780 Type 60CHS cop., blk. handle Net Each 10c 10 for 88c

C—CROCODILE... gets into tight places; teeth mesh whole length of both sides of jaws; screw connection; shank fits banana plugs.
Cat. No. 32-781 Type 85 steel, 2 1/4" long. Net Each 5c 10 for 44c

D—"TIP-CLIP" CROCODILE... same as above but with one jaw equipped with standard phone tip; overall length 2 1/4".
Cat. No. 32-782 Type 85T Net Each 11c 10 for 93c

E—WEB-PEE-WEE... only 1 1/4" overall, with 1/2" jaw spread; light-weight thin-nosed; entirely non-ferrous, ideal for R.F.
Cat. No. 32-783 Type 88 Net each 12c 10 for 98c

F—PEE-WEE... jaw teeth mesh on ends; interlocking necks in full channel construction prevent offsetting; screw connection; use copper clips for R.F. or heavy current work.

Cat. No.	Type	Material	Amps.	Length	Open	Net Ea.	10 for
32-784	45	Cad-plated steel	5	1 1/4"	1 1/4"	\$0.05	\$0.36
32-785	45C	Copper	10	1 1/4"	1 1/4"	.06	.54
32-786	48B	Cad-plated steel	10	2"	2"	.05	.39
32-787	48C	Copper	20	2"	2"	.06	.40
32-788	27*	Cad-plated steel	20	2 1/8"	2 1/8"	.08	.68
32-789	27C*	Copper	40	2 1/8"	2 1/8"	.13	1.17

* Jaw teeth mesh on all three sides.

G—BATTERY CLIPS... husky clips for connection to storage batteries; teeth on one jaw and notch on other; heavy spring.

Cat. No.	Type	Material	Amps.	Length	Open	Net Ea.	10 for
32-790	24A	Lead-plated steel	25	2 1/4"	1"	\$0.10	\$0.78
32-791	24	Solid copper	50	2 1/4"	1"	.15	1.37
32-792	21A	Lead-plated steel	50	4"	1 1/2"	.13	1.17
32-793	21*	Solid copper	100	4 1/2"	1 1/2"	.38	3.43
32-794	11A*	Lead-plated steel	100	6"	1 1/2"	.45	4.12
32-795	11*	Solid copper	200	6"	1 1/2"	.75	6.86

* Furnished with lug for cable connection.



Clip Insulators

Rubber insulators to fit above clips; can be used with jaws exposed or concealed; specially red or black.

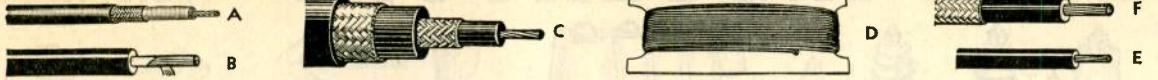
Cat. No.	Clip No.	Ins. No.	Net Ea.	Ten for
32-796	88	93	5c	\$.34
32-797	85/85T	87	8c	.34
32-798	48B/48C	49	9c	.54
32-799	45/45C	47	9c	.59
32-800	27/27C	29	15c	.98
32-801	24/24A	26	19c	1.27
32-802	21/21A	23	32c	2.25
32-803	11/11A	13	51c	3.53

Insulated Alligator Clip

Ideal for service bench. Can be soldered without removing insulation. Banana plug fits into 1" handle. 2 1/4" for Banana Plugs.

Cat. No. 32-761	Red	
Cat. No. 32-762	Black	Net ea. 7c
10 for		63c
2 1/4" for Phone Tips		
Cat. No. 32-763	Red	
Cat. No. 32-764	Black	Net ea. 25c
10 for		\$2.25

WIRE -- R G CABLE -- SPAGHETTI -- AERIAL WIRE



(A) Amphenol RG High Frequency Cables

Have flexible polyethylene inner jacket covered by copper shield with vinyl or poly outer jacket. Impervious to gasoline, acids, alkalis, and oils and may be buried in the ground. 21-038 is 2-conductor.

Cat. No.	Mfr's Type	Nominal Imped.	Nominal mmfd-ft.	Cable O.D.	Per Ft.
30-301	21-004	52.0	29.5	.405	17c
30-302	21-007	75.0	20.5	.405	15c
30-303	21-024	53.5	28.5	.195	8c
30-304	21-025	73.0	21.0	.242	10c
30-305	21-038	95.0	16.0	.285	20c

(B) Test Prod Wire

Type 8899. No. 18 stranded; cotton wrap, rubber overall. Red or black, flexible and limp. 5000 v. insulation.

Cat. No. 30-042	Per foot			\$0.02
Cat. No. 30-043	100 feet			1.84

Type 8898. Same as above but 10,000 v. insulation.

Cat. No. 30-044	Per foot			\$0.34
Cat. No. 30-045	100 feet			2.89

(C) Auto and Aircraft Radio Wires

Type 8665 high tension cable. No. 16 stranded stainless steel; rubber insulation; glass yarn web braid; neoprene jacket; tinned copper braid shield; neoprene jacket.

Cat. No. 30-046	Per foot			\$0.17
Cat. No. 30-047	100 feet			13.23

Varnished Spaghetti Tubing

Average dielectric strength, 4000 v. Meets VTS and ASTM specs. 36-inch lengths.

Internal dia., .034" for 20-22 wire.	Internal dia., .066" for 14 wire.
Cat. No. 30-149 Black	Cat. No. 30-161 Black
Cat. No. 30-150 Yellow	Cat. No. 30-162 Yellow
Cat. No. 30-151 Red	Cat. No. 30-163 Red
Cat. No. 30-152 Green	Cat. No. 30-164 Green
Cat. No. 30-153 Black	Cat. No. 30-165 Black
Cat. No. 30-154 Yellow	Cat. No. 30-166 Yellow
Cat. No. 30-155 Red	Cat. No. 30-167 Red
Cat. No. 30-156 Green	Cat. No. 30-168 Green
Cat. No. 30-157 Black	Cat. No. 30-169 Black
Cat. No. 30-158 Yellow	Cat. No. 30-170 Yellow
Cat. No. 30-159 Red	Cat. No. 30-171 Red
Cat. No. 30-160 Green	Cat. No. 30-172 Green

Aerial Wire

High-conductivity copper wire with enamel insulation.

Stranded Bare Copper			Copperweld Solid Enameled Antenna Wire		
Cat. No.	Length	Net	Cat. No.	Length	Net
Type 8000 — 7 x 22			Welded copper covering - steel core. 100 ft. 200 ft.		
30-117	50 ft.	\$.64	Ga. Cat. No. Net	Cat. No. Net	
30-118	75 ft.	.90	14 30-140 \$1.06	30-143 \$2.02	
30-119	100 ft.	1.18	10 30-141 1.59	30-144 3.03	
30-120	1,000 ft.	11.02	10 30-142 2.24	30-145 4.25	
Type 8002. 7 x 24					
Cat. No. 30-121	50 ft.	\$.49			
30-122	75 ft.	.63			
30-123	100 ft.	.83			
30-124	1,000 ft.	7.35			

Stranded Enameled Copper			Solid Enameled Copper			
Cat. No.	Length	Net	Type 8008. No. 12	Cat. No.	Length	Net
Type 8005. 7 x 22			Heavy-duty copper aerial wire.			
30-125	75 ft.	\$1.18	Cat. No. Gauge Feet Net			
30-126	100 ft.	1.47	30-146 14 100 \$0.79			
30-127	1,000 ft.	13.18	30-147 12 100 1.02			
Type 8006. 7 x 20			30-148 10 100 1.85			
Cat. No. 30-128	100 ft.	\$2.45				
30-129	1,000 ft.	22.00				

(D) Indoor Aerial Wire

Type 8014. Extra flexible. No. 25 stranded. 25 ft hank.

Cat. No. 30-113	Per hank		\$0.18
Cat. No. 30-114	500 feet		1.98

(E) Shielded Lead-In Wire

Type 8206. No. 18 stranded, rubber covered, copper shield overall. 63mm per foot maximum.

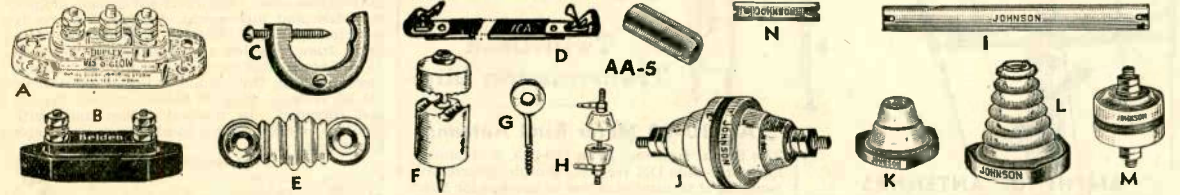
Cat. No. 30-115	Per foot		\$.03
Cat. No. 30-116	250 feet		5.88

(F) Rubber-Covered Lead-In

18-Strand Type 8200	Overall diameter 0.126"	16-Strand Type 8201	Overall diameter 0.135"		
Cat. No. 30-135	100 ft.	\$0.98	30-137	50 ft.	\$0.59
30-136	500 ft.	3.91	30-138	100 ft.	1.13
			30-139	250 ft.	2.36

See Amphenol Twin-lead Transmission Line on the following page.

ANTENNA ACCESSORIES - - - INSULATORS



VIS-O-GLOW (A) Lightning Arrester

Neon tube arrester. Very sensitive and will carry heavy discharges. Carries \$100 fire insurance. Made of crystal-clear glass.

Cat. No. 27-205	Single. Net	\$0.82
Cat. No. 27-206	Duplex. Net	\$1.15

(B) Lightning Arresters

000 Porcelain single-wire type. With mounting hardware.

Cat. No. 27-207	Net 19c	10 for \$1.70
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SINGLE TYPE 8896 Bakelite. U.L. approved.

Cat. No. 27-208	Net	29c
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(C) Ground Clamp

Frame cannot twist. Will out thru paint to make contact.

Cat. No. 29-007	Net Each 9c	10 for 73c
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(D) Lead-In Strips

Weather-proofed; clip connectors at each end.

Cat. No. 29-005	Net Each	6c
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Antenna Loop

Replacement loop with single mounting hole for easy installation. HI-Q. covers broadcast band with 365 mmfd. tuning-condenser.

Cat. No. 29-006	Net Each	48c
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Antenna Insulators

(E) Made of clear glass. Smooth surface prevents collection of dirt and ice. 3 1/2" long.

Cat. No. 27-201	Net Each	5c
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(F) Nail-It Knobs. Glazed white porcelain. Grooves for 2 wires.

Cat. No. 27-202	Net Each	4c
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(G) Screw-eye Insulator, 3". Bakelite.

Cat. No. 27-203	Net Each	4c
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(G) Screw-eye Insulator, 7". Bakelite.

Cat. No. 27-204	Net Each	4c
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(H) National Antenna Lead-In Bushings

Steatite bushings. Assembly includes male and female bushings and metal fittings.

Cat. No. 27-104	Type XS7 3/4" hole.	
Net per pr.		33c
Cat. No. 27-105	Type XS8 1/2" hole.	
Net per pr.		45c
Cat. No. 27-106	Type XS1 1" hole.	
Net per pr.		72c
Cat. No. 27-107	Type XS2 1 1/2" hole.	
Net per pr.		81c

TYPE AA-5 — Low-loss steatite aircraft-type strain insulator.

Cat. No. 27-108	Net Each	30c
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Johnson Antenna Insulators

Wet process porcelain with smooth white glazing; long leakage path, low capacity and freedom from moisture absorption.

Cat. No.	Fig.	Size	Net
27-050	—	136-104 4" x 3/4" Sq.	12c
27-051	I	136-107 7" x 1" dia.	56c
27-052	I	136-112 12" x 1" dia.	62c

Lead-In Bushings

Cat. No.	Type	Fig.	Ht.	Dia.	Net
27-019	135-50	J	1 1/2"	1 1/2"	21c
27-020	135-51	J	1 3/4"	1 3/4"	29c
27-021	135-52	J	1 7/8"	1 7/8"	47c
27-022	135-53	K	1 1/2"	1 1/2"	18c
27-023	135-54	L	1 3/4"	3 1/2"	44c
27-024	135-55	M	1 1/2"	1 1/2"	18c

(N) Feeder Insulators

High grade, low-absorption porcelain, silicone impregnated, affords finest water repellent characteristics. Type 122 has notches for 1 1/2" line. All have 3/4" x 1/4" cross section.

Cat. No.	Type	Length	Net
27-043	136-122	2"	10c
27-044	136-124	4"	14c
27-045	136-126	6"	18c
27-046	136-31	—	19c

When Ordering Wire State Both Catalog Number and Footage

Amateur Antennas - Auto Aerials

AMATEUR ANTENNAS

Workshop Associates

2-METER BEAM — A 6-element array with 2 driven elements. Power gain is 6 (7.8 db.). Matched with 50-ohm coax line. Elements are 3/8-inch aluminum sealed tubing, supported in heavy-duty molded plastic heads. Built to weather the storms. Hardware and instructions included.

Cat. No. 29-075 Net Each . . . **\$21.50**

6-METER BEAM — A high-gain 3-element directional antenna with rotating mast. Standing wave ratio less than 1.1 over entire band with 72-ohm cable. Aluminum alloy construction with heavy-duty plastic head; will withstand high winds. Complete with hardware, instructions.

Cat. No. 29-076 Net Each . . . **\$9.00**

10-METER DIPOLE — Coverage from 27 mc. to 30 mc. Two aluminum elements which telescope between 130 and 214 inches. Bi-directional, but rotatable mast equipment is available.

Cat. No. 29-077 Net Each . . . **\$8.00**

10-METER DIPOLE-TO-BEAM KIT — Accessories to convert above antenna to a 3-element 10-meter beam antenna.

Cat. No. 29-078 Net Each . . . **\$31.50**

10-METER BEAM — 3-elements; adjustable aluminum alloy sleeves telescope. Element spacing is also adjustable. Exceptional rigidity provides smooth rotation. Efficient 68-ohm impedance match.

Cat. No. 29-079 Net Each . . . **\$39.50**

DUAL-TEN BEAM — 6-element for the "ultimate" in a high-gain 10-meter beam. Dual beams are vertically polarized with 1-2 wave-length spacing. Beam width for 1/2 power angle: horizontal 64°, vertical 68°. Power gain of 6 (7.8 db.). Broad band. Construction similar to 2-Meter Beam antenna above.

Cat. No. 29-080 Net Each . . . **\$100.00**

20-METER BEAM — 3-element 36-ft. beam covers the band. Light weight with rigidity for smooth rotation. Built to withstand high winds and ice loads. Two-inch duraluminum booms. Minimum sag; taper from 1 1/2" to 3/4" diameter. Length and spacing adjustable. 55 pounds.

Cat. No. 29-081 Net Each . . . **\$120.00**

Antenna Mast and Mount

MODEL AM — Tubular steel mast of two 4-ft. sections for overall length of 7 1/2-ft. No guy wires; strong adjustable steel mounting arms and brackets. All hardware included.

Cat. No. 29-082 Net Each . . . **\$8.25**

MODEL AM1 — Extra 4-ft. mast sections.

Cat. No. 29-083 Net Each . . . **\$1.30**

Manual Mast Rotator

MODEL AM2 — Kit includes extra sections brackets, arm for locking. Designed for Beam Antennas above.

Cat. No. 29-084 Net Each . . . **\$5.00**

Motorized Rotator

Designed for above "Beams," will handle a 10 and 20 combination or UHF of your own. Low-loss coax all the way. Rotation automatically stops to prevent twisting coax line. 1 RPM, instantly reversible. Switch on indicator for complete control. Compass dial pointer. Ball thrust bearing base plate handles 500 pounds easily. Quiet operation, precision gears, heavy-duty 110 volt AC motor. Weathertight aluminum casing.

Cat. No. 29-085 Net Each . . . **\$157.50**

Standoff Insulator

Molded of strong, weatherproof plastic, attaches with a single wood screw. For the new 300-ohm parallel line.

Cat. No. 29-086 Net Each . . . **9c**

(A) Mosely Dipole Connector

Center-connects 300-ohm line folded dipole type. Solderless, secure connections. Furnished with screws, nuts, and washers.

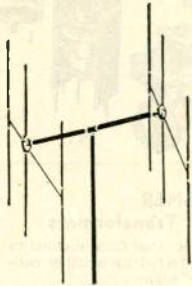
Cat. No. 29-451 Net Price . . . **35c**

(B) Shur Antenna Mount

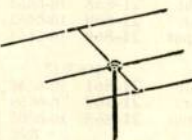
Fits anywhere — on roof-top, sloping side, or vertical surface. Cast aluminum construction will support weight of any fixed standard FM or TV antenna. Takes up to 1 1/4-inch pole. With complete instructions and mounting hardware.

Cat. No. 29-041 Model M-C Net Price **\$5.25**

See the Wave Meter Section for a complete listing of frequency calibration and monitoring instruments.



2-METER BEAM



6-METER BEAM



10-METER DIPOLE



10-METER BEAM



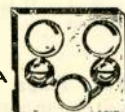
20-METER BEAM



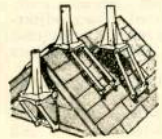
20-METER BEAM



ROTATOR INDICATOR



A



B

Ward Auto Aerials

(A) TYPE DCF-3 — The "Phantom." Three telescoping sections. 56" when extended, 3 1/2" when collapsed. Fits every car, top-cowl, and fender. Completely shielded from engine noises, completely water sealed. 36" coaxial lead cable insulated with polyethylene; shield braid, and vinylite, connector fitting, bayonet adapter included.

Cat. No. 29-201 Net Each . . . **\$3.67** A

(B) TYPE TCF-3 — The "Eightball." Fits all cars, top, cowl, and fender. Secure installation; easy to mount. 3 sections, 56", non-telescoping. 36" coaxial lead cable, insulated with polyethylene; shield braid, and vinylite, connector fitting, bayonet adapter included.

Cat. No. 29-202 Net Each . . . **\$3.15**

(C) TYPE CF-6 — The "Flex-Angle." A flexible adjustment permits locking rod in a vertical position. 3 sections 68". Includes all accessories listed for Type DCF-3.

Cat. No. 29-203 Net Each . . . **\$3.20**

(D) TYPE SB-3 — The "Challenger." Slide-cowl and fender mount with two stanchions. Quality tubing, anti-rattle, and insulation throughout. Ward high "Q," low-loss, coaxial cable lead without Vinylite jacket. Shield-can type installation. 3 sections, 36".

Cat. No. 29-204 Net Each . . . **\$1.73**

(E) TYPE SC-6 — "Air King." 3 sections, 66", side-cowl and fender mount. Two-stanchion mounts provide secure installation. Smart chrome-cap insulators. Includes conversion kit for universal mounting. Includes all accessories listed under DCF-3.

Cat. No. 29-205 Net Each . . . **\$2.91**

(F) TYPE SC-8 — "Long Ranger." Same as Type SC-6 above but 4 sections, 100", for fine reception in low signal areas.

Cat. No. 29-206 Net Each . . . **\$4.09**

Lead Extension

TYPE C-8 — Provides lead extension needed when mounting antenna on fender. Ward fittings designed for attachment to the standard Ward 36" lead provided with antennas above.

Cat. No. 29-207 Net Each . . . **44c**

PROFESSIONAL TYPE

(G) Automobile Aerials

For use where strength, ruggedness, and special high-frequency insulation are vital; solid spring-steel rods, 96" long, tapered for flexibility, and cadmium plated for protection against corrosion; lower section consists of 1/2" diameter brass rod heavily plated; aerial is flexible enough to bend freely under contact with tree limbs, yet amply sturdy. For particularly arduous service, the heavy conical coil spring holds rod erect at normal speeds and while car is turning corners, and flexes to allow rod to pass under solid obstructions; spring is not part of the electrical circuit; flexible insulated lead passes through center of spring and connects to aerial. For dependable service in any weather. Lucite and impregnated Bakelite are used for insulation.

Bumper Mounting Spring Type

TYPE 1380 — Attaches to car bumper support; rigid clamp holds spring base. 96" high. **\$16.34**

Cat. No. 29-251 Net Each . . . **\$16.34**

Body Mounting Spring Type

TYPE 1480 — Mounts anywhere on the car, except the bumper; soft rubber gasket makes tight fit and keeps moisture out.

Cat. No. 29-252 Net Each . . . **\$16.34**

Car Roof Mounting

TYPE 1918 — A new car-roof mobile aerial, 20" high.

Cat. No. 29-253 Net Each . . . **\$2.70**

Note: Series 1300 can be supplied in 78", 84", and 90" lengths. Series 1400 can be supplied in 60", 66", 72", 78", 84", and 90" lengths. Write for prices.

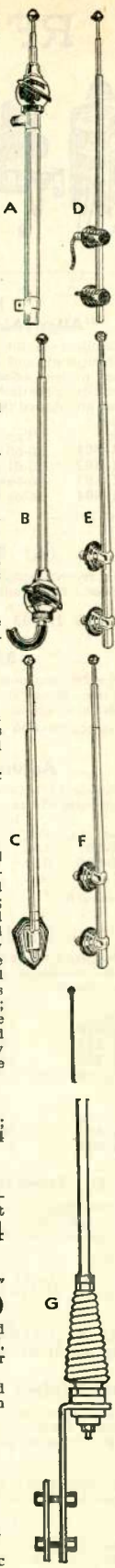
All professional type antennas are furnished without lead-in cables; see coax cable listing in this catalog.



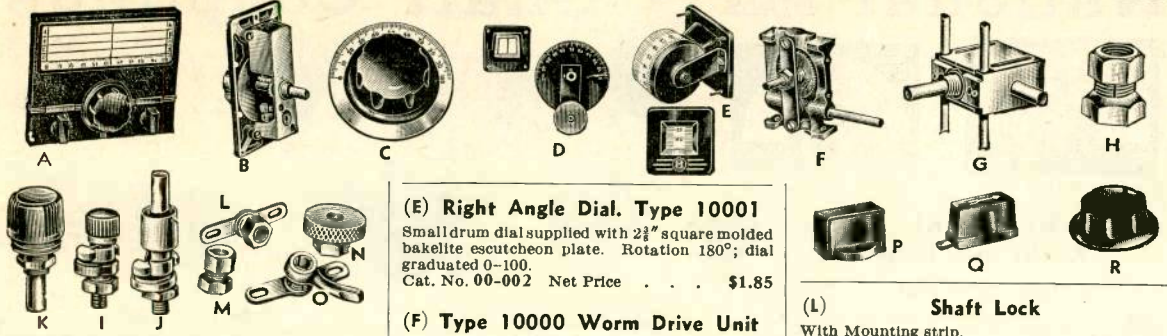
Shielded Connector

Antenna coupler for auto radios. 1 1/2" x 1/2" dia Bayonet type.

Cat. No. 29-301 Net Each 6c 10 for 54c



MILLEN - KNOBS - DIALS - DRIVES



(A) Model 10035
Illuminated dial, very compact— $8\frac{1}{4}'' \times 6\frac{1}{2}''$ —sturdily built. All-enclosed mechanism prevents behind-panel interference. Ratio 12:1. Direct calibration. Provision for mounting and marking auxiliary controls. Two, 4 and 5 line scales furnished.
Cat. No. 00-006 Net Price . . . \$6.00

(B) Model 10030
Control shaft has 1:1 ratio. Veeder-type counter reads directly to 1 part in 100 of 1 revolution. Built-in dial lock and $\frac{1}{4}''$ drive shaft coupling. May be used with multi-revolution transmitter controls or, through gear reduction mechanism, for control of fraction revolution capacitors.
Cat. No. 00-007 Net Price . . . \$25.00

Model 10039
New, smaller instrument dial similar to Model 10035 above. $4'' \times 3\frac{1}{4}''$. Enclosed mechanism; 1-100 logging scale; 5 blank scales; fluted knobs.
Cat. No. 00-008 Net Price . . . \$2.70

(C) Model 10008
Heavy nickel-silver dial insulated from shaft by Bakelite hub; 180°; 0 to 100; $3\frac{1}{2}''$ diameter. Fluted knob.
Cat. No. 00-009 Net Price . . . \$1.00

(D) Model 10011 Disc Meter Dial
A 0-100, 180°, disc-type vernier with escutcheon to match square meters; $3\frac{1}{2}''$ dia.; ratio 10:1.
Cat. No. 00-001 Net Price . . . \$2.25

(E) Right Angle Dial. Type 10001
Small drum dial supplied with $2\frac{3}{8}''$ square molded bakelite escutcheon plate. Rotation 180°; dial graduated 0-100.
Cat. No. 00-002 Net Price . . . \$1.85

(F) Type 10000 Worm Drive Unit
Right angle drive. Furnished in either 48:1 or 16:1 reduction. Spring-loaded gears to prevent backlash.
Cat. No. 00-003 Net Price . . . \$4.50

(G) Type 10012 Right Angle Gear Drive
Compact drive. Uses bevel gears. Mounts on adjustable standoff rods. $1\frac{1}{2}'' \times 1\frac{1}{2}''$.
Cat. No. 00-004 Net Price . . . \$3.75

Type 10038 Right Angle Anti-backlash Drive
This dial and drive unit has a ratio of 50:1. Same unit as used on Army aircraft transmitters.
Cat. No. 00-005 Net Price . . . \$6.50

(H) Watertight Shaft Gland
Cat. No. 00-028 Type 10070 Net Price 45c

(I) Dial Lock
Captive head with front-of-panel mounting.
Cat. No. 00-021 Type 10050 Net Price 45c

(J) Dial Lock
Cat. No. 00-022 Type 10053 Net Price 50c

(K) Vernier Drive Unit
Cat. No. 00-027 Type 10065 Net Price 45c

(L) Shaft Lock
With mounting strip.
Cat. No. 00-023 Type 10060 Net Price 36c

(M) Shaft Lock
With mounting nut for potentiometers.
Cat. No. 00-024 Type 10061 Net Price 36c

(N) Shaft Lock
With knurled control knob.
Cat. No. 00-025 Type 10062 Net Price 45c

(O) Shaft Lock
With lever control.
Cat. No. 00-026 Type 10063 Net Price 45c

(PQ) Bar Knobs. Brass Inserts
Cat. No. 00-015 (P) Type 10002 Net Price 55
Cat. No. 00-016 (Q) Type 10003 Net Price 45c

(R) Tuning Knobs
Cat. No. 00-017 Type 10006 Dia. $2\frac{3}{4}''$. . . 50c
Cat. No. 00-018 Type 10014 Dia. $\frac{7}{8}''$. . . 15c
Cat. No. 00-019 Type 10018 Dia. $1\frac{3}{8}''$. . . 40c

Dial Illuminator
Cat. No. 00-020 Type 10036 Net Price 35c

Drum Meter Dial Bezel
Cat. No. 00-029 Type 10082 Net Price 60c

Disc Meter Dial Bezel
Cat. No. 00-030 Type 10083 Net Price 60c

Vernier Dials - Dial Plates Handwheel Controls

(A) ICA Miniature Dials
Chrome-silver dials; black-etched markings. $1\frac{1}{8}''$ diam. For $\frac{1}{4}''$ shaft.
Cat. No. 00-054 10-10 thru 180 Net Ea. 50c
Cat. No. 00-055 10-10 thru 270 Net Ea. 50c

(B) ICA Precision Vernier Dial
Smooth action and precision calibration feature this vernier dial. Chrome-silver dial plates are engraved with black markings, calibrated from 0 to 100; permits resetting of dial to fraction of a division; fluted, skirted knob; for $\frac{1}{4}''$ shafts. Hardware included.

Cat. No.	Type	Dia.	Degrees	Net
00-050	2170	$2\frac{3}{8}''$	325	\$1.23
00-051	2171	$2\frac{3}{8}''$	180	1.23
00-052	2168	$4''$	325	1.62
00-053	2169	$4''$	180	1.62

(D) Gordon Handwheel Control With Pointers

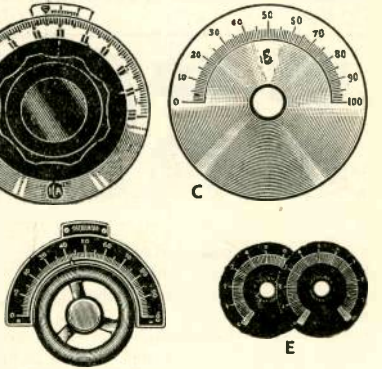
For radio transmitting and commercial applications. Handwheels are made of bakelite and have brass bushings for $\frac{1}{4}''$ shafts. Pointers are chrome-plated; less dials.

Cat. No.	Type	Wheel Size	Net Ea.
00-160	308	$3\frac{1}{2}''$	94c
00-161	310	$2\frac{1}{2}''$	82c
00-162	312	$1\frac{1}{2}''$	65c
00-163	314	$1\frac{1}{8}''$	53c

(C) Dial Plates
Beautiful chrome-silver dials accurately engraved with black numerals.
180 Degrees 325 Degrees
Cat. No. Dia. Net Cat. No. Dia. Net
00-056 $2''$ 43c 00-059 $2''$ 43c
00-057 $3\frac{1}{2}''$ 67c 00-060 $3\frac{1}{2}''$ 67c
00-058 $4''$ 76c 00-061 $4''$ 76c

(E) Dial Plates for Switches
Series 400 plates fit all Mallory types 311J, 3200J, and other standard switches with $1\frac{1}{8}''$ base; 20-degree spacing between numerals. Series 300 dial plates fit all 1200L, 1300L, and other standard switches with $1\frac{1}{4}''$ base, also $1\frac{1}{8}''$ -base 3100J and 3200J; 30-degree spacing between numerals.

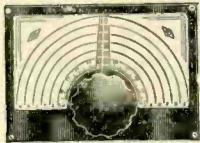
Cat. No.	Type	Marking	Cat. No.	Type
00-091	453	1 to 2	00-090	372
00-092	454	1 to 3	00-122	373
00-093	455	1 to 4	00-123	374
00-094	456	1 to 5	00-124	375
00-095	457	1 to 6	00-125	376
00-096	458	1 to 7	00-126	377
00-097	459	1 to 8	00-127	378
00-098	460	1 to 9	00-128	379
00-099	461	1 to 10	00-129	380
00-100	462	1 to 11	00-130	381
00-101	463	1 to 12	00-131	382
00-102	464	1 to 13	..	..
00-103	465	1 to 14	..	..
00-104	466	1 to 15	..	..
00-105	467	1 to 16	..	..
00-106	468	1 to 17	..	..
00-107	472	Off 1 to 2	..	..



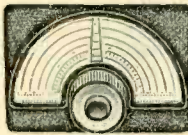
00-108	473	Off 1 to 3	00-132	383
00-109	474	Off 1 to 4	00-133	384
00-110	475	Off 1 to 5	00-134	385
00-111	476	Off 1 to 6	00-135	386
00-112	477	Off 1 to 7	00-136	387
00-113	478	Off 1 to 8	00-137	388
00-114	479	Off 1 to 9	00-138	389
00-115	480	Off 1 to 10	00-139	390
00-116	481	Off 1 to 11	..	..
00-117	482	Off 1 to 12	..	..
00-118	483	Off 1 to 13	..	..
00-119	484	Off 1 to 14	..	..
00-120	485	Off 1 to 15	..	..
00-121	486	Off 1 to 16	..	..
..	..	1 to 24	00-140	*394
..	..	1 to 5	00-141	†487
..	..	1 to 4	00-142	†488

Net Price 12c each
* 15° spacing between numerals.
† 60° spacing between numerals.
‡ 90° spacing between numerals.

National KNOBS DIALS - Shaft Couplings



ACN



ICN



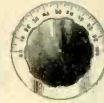
AM



HRB



HRP



O



HRO



ODL



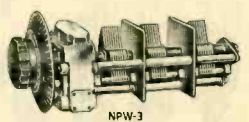
HRS-1



HRT



PW



NPW-3

NATIONAL Knobs and Dials

Type MCN Dial

A sealed-down model ideally suited for mobile installations, small converters and tuners; may be mounted on standard $3\frac{1}{2}$ " rack panel. Provides three calibrating scales and 180° 0-100 logging scale. $2\frac{1}{4}$ " x $3\frac{1}{4}$ ".
Cat. No. 00-171 Net Price \$2.70

Type ACN Dial

For direct calibration. Bezel size $5\frac{1}{2}$ " x $7\frac{1}{2}$ "; 5 blank scales; one 180° scale graduated 0-100; velvet vernier drive; easy to mount.
Cat. No. 00-170 Net Price \$3.30

Type SCN Dial

With the same dial scales as ACN but in reduced size. $4\frac{1}{8}$ " x $6\frac{1}{4}$ ", for economy of panel-mounting space.
Cat. No. 00-172 Net Price \$3.00

Type ICN Dial

The answer to the request of amateurs all over the world for an illuminated ACN dial. Two dial lights; semi-circular dial window prevents shadow casting. $5\frac{1}{2}$ " x $7\frac{1}{2}$ ".
Cat. No. 00-173 Net Price \$6.00

Type AM Dial

The original "velvet vernier" mechanism in a metal-skirted dial $3\frac{1}{2}$ " in diam., ratio 5 to 1. Fits $\frac{1}{2}$ " shaft.
Cat. No. Divisions Rotation Direction
00-176 0-100 180° Counter-clockwise
00-177 100-0 180° Clockwise
00-178 150-0 180° Clockwise
00-179 200-0 360° Clockwise
00-180 0-150 270° Counter-clockwise
Net Each \$2.25

Type HRS Knob

These knobs are molded of high quality gray plastic and have $1\frac{1}{4}$ " diameter chrome-plated bevel skirts. Fit $\frac{1}{2}$ " diam. shafts.
HRS-1 — ON-OFF knob thru 30° rotation. Cat. No. 00-181 Net Each 75c
HRS-2 — Calibrated 5-0-5 thru 180° rotation. Cat. No. 00-182 Net Each 50c
HRS-3 — Calibrated 0-10 thru 300° rotation. Cat. No. 00-183 Net Each 50c
HRS-4 — Calibrated 0-10 thru 360° rotation. Cat. No. 00-184 Net Each 50c
HR — An HRS type knob without chrome plated skirt but with white dot for spotting settings.
Cat. No. 00-185 Net Each 30c

Type HRB Knob

For bandswitching or other operations where a switch is turned to several index positions. A bright zinc-alloy casting.
Cat. No. 00-186 Net Each 45c

PW Precision Drives

For smooth, precise control and high re-set accuracy. Micrometer dial reads direct to 1 part in 500. 10 revolutions covers tuning range; 20 to 1 ratio worm gear. Individually insulated rotors, brush contacts. Steatite stator insulation.
Type NPW-O — Drive shaft perpendicular to panel. With flexible steatite coupling to fit $\frac{1}{2}$ " shaft. Less capacitor. Cat. No. 00-189 Net Each \$9.00
Type PW-O — Drive shaft parallel to panel. 2 couplings as above supplied. Less capacitor. Cat. No. 00-187 Net Each \$9.90
Type PW-D — Micrometer dial only. No reduction gear furnished. Fits $\frac{1}{2}$ " shaft. Cat. No. 00-188 Net Each \$5.25
Type PW-E — Micrometer dial only. No reduction gear furnished. Fits $\frac{1}{2}$ " shaft. Cat. No. 00-189 Net Each \$9.00
Type PW-F — Drive shaft parallel to panel. 2 couplings as above supplied. Less capacitor. Cat. No. 00-187 Net Each \$9.90
Type PW-G — Micrometer dial only. No reduction gear furnished. Fits $\frac{1}{2}$ " shaft. Cat. No. 00-188 Net Each \$5.25

Type HRT Knobs

A new light-gray plastic knob with chrome trim, for creating a modern panel layout. $2\frac{1}{4}$ " diam., fits $\frac{1}{2}$ " shaft.
Cat. No. 00-181 Net Each 75c
Type HRT — M Knob — A smaller version of Type HRT Knob above; $1\frac{1}{8}$ " diam.
Cat. No. 00-192 Net Each 50c

Type R Knob

$1\frac{1}{2}$ " diam. dial with black bakelite knob. German silver scale calibrated 0-10 in 180° clockwise rotation. Fits $\frac{1}{2}$ " shaft.
Cat. No. 00-187 Net Each 60c

Type HRP-P Knob

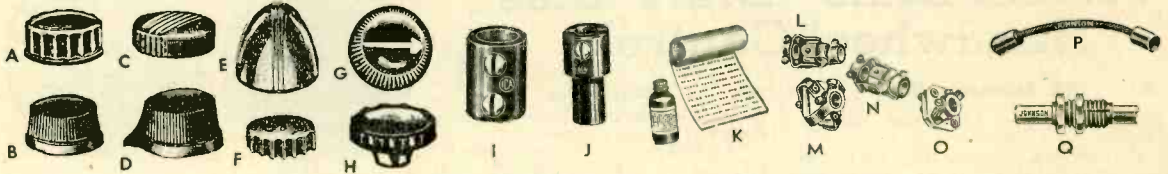
Black bakelite knob $1\frac{1}{4}$ " long and $\frac{1}{2}$ " wide; with pointer. Fits $\frac{1}{2}$ " shaft.
Cat. No. 00-188 Net Each 24c
Type HRP Knob — Same as HRP-P above but without pointer.
Cat. No. 00-189 Net Each 18c

Type O Dial

$3\frac{1}{2}$ " nickel-silver scale insulated from hub. Metal brush grounds scale; mounts directly on $\frac{1}{2}$ " shaft. Calibrated 0-100; counterclockwise rotation thru 180°. Black bakelite knob.
Cat. No. 00-190 Net Each \$1.00
Type HRK Knob — Black bakelite knob $2\frac{1}{4}$ " as used on Type O Dial above.
Cat. No. 00-191 Net Each 50c

Type ODL Dial Lock

Clamps the rim of O, K, L, and M dials. Brass nickel plated.
Cat. No. 00-193 Net Each 33c



Standard Knobs

Molded plastic knobs with lustrous finish in diverse styles and colors to meet all replacement needs.

Cat. No.	Fig.	Diam.	Color	Net Ea.	10 For
00-601	A	$1\frac{1}{4}$ "	Walnut	9c	\$0.81
00-602	A	$1\frac{1}{2}$ "	Ivory	9c	.81
00-603	B	$1\frac{1}{8}$ "	Black	7c	.56
00-604	B	$1\frac{1}{8}$ "	Walnut	7c	.56
00-605	C	$1\frac{1}{8}$ "	Walnut	9c	.81
00-606	C	$1\frac{1}{8}$ "	Ivory	9c	.81
00-607	D	$1\frac{1}{8}$ "	Black	7c	.56
00-608	D	$1\frac{1}{8}$ "	Walnut	7c	.56
00-609	E	$\frac{3}{4}$ "	Black	6c	.48
00-610	E	$\frac{3}{4}$ "	Walnut	6c	.48
00-611	E*	$\frac{3}{4}$ "	Black	6c	.48
00-612	E*	$\frac{3}{4}$ "	Walnut	6c	.48
00-613	F	1"	Walnut	8c	.72
00-614	F	1"	Ivory	8c	.72
00-615	G	$1\frac{1}{2}$ "	Black	12c	1.08
00-616	H	$1\frac{1}{2}$ "	Black	12c	1.08
00-617	H	$1\frac{1}{2}$ "	Black	12c	1.08

* Take knurled shafts.

(I) Shaft Couplings

(J) Reducers, and Extenders

Cat. No.	Brass	Insulated	Type	Size
00-720	00-726		Coupling	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
00-721	00-727		Coupling	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
00-722	00-728		Coupling	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
00-723	00-729		Ext.	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
00-724			Ext.	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
00-725			Ext.	$1\frac{1}{2}$ " x $\frac{1}{2}$ "
				12c
				100 for \$9.95

Split Bushing

For increasing diameter of shaft. $\frac{1}{2}$ "- $\frac{3}{4}$ ".
Cat. No. 00-730 Net Each 6c
10 for 54c

(K) Millen Panel Marking Transfers

Enables amateur and home builder to work his panel in accordance with most modern practice. $\frac{1}{8}$ " black letters, with ample supply of every conceivable word or marking required for ham or commercial equipment. Special solution furnished.
Cat. No. 00-062 Net Price \$1.25

Millen Flexible Couplings

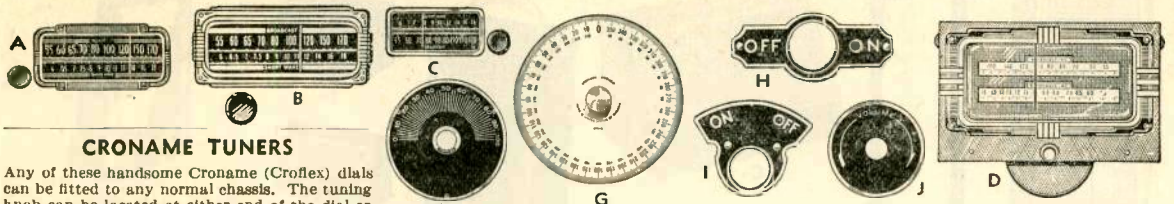
FOR $\frac{1}{2}$ " SHAFTS

(L) TYPE 39001 — A new flexible coupling with no backlash yet angle drive up to 45° is provided. Isolantite insulation. Ideal for 10001 drum dial.
Cat. No. 00-751 Net Each 42c
(M) TYPE 39002 — Compact conventional type coupling.
Cat. No. 00-752 Net Each 42c
(N) TYPE 39005 — A non-insulated universal joint for large angle drives requiring high torque.
Cat. No. 00-753 Net Each 42c
(O) TYPE 39006 — Unique type of flexible coupling for use where shafts have end motion, eccentric, or end wobble.
Cat. No. 00-754 Net Each 42c

E. F. Johnson Shafts, Accessories

Flexible Shafts. Phosphor bronze with $\frac{1}{2}$ " hub. Up to 90° angular control. (Fig. P)
Cat. No. 00-701 3" Net Price 24c
Cat. No. 00-702 6" Net Price 32c
Panel Bearing and Shaft Extensions. For $\frac{1}{2}$ " shafts. (Fig. Q)
Cat. No. Type Shaft Length Net
00-703 115-255 * 12c
00-704 115-256 3" 24c
00-705 115-2562 6" 35c
* Panel bearing only.

Croname Tuners - Dials - Knobs



CRONAME TUNERS

Any of these handsome Croname (Croflex) dials can be fitted to any normal chassis. The tuning knob can be located at either end of the dial or almost anywhere along the lower edge of the dial. The variable condenser may be centered above or below center, or to the left or right. Cushion spring clips hold the "edge-lighted" glass scales. All tuners have genuine bronze escutcheons. All will fit either clockwise or counter-clockwise condensers with $\frac{3}{8}$ " or $\frac{1}{2}$ " shafts. Tuners can be installed vertically with a vertical scale. Dual scale supplied: BC and 6-18mc SW.

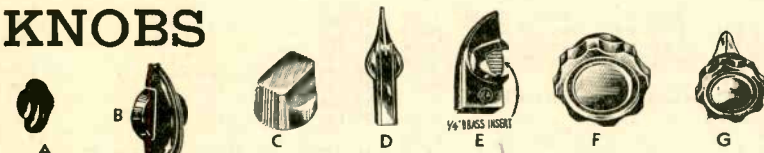
(A) Type 233
For Small Consoles, Table Sets
Overall dimensions $3\frac{1}{8}$ " x $6\frac{1}{8}$ ". Panel cutout $2\frac{1}{2}$ " x 6". Supplied with two screw-type sockets with spring mounting clips.
Cat. No. 00-284 Net Price \$3.14

(B) Type 232 Medium Tuner
Overall dimensions $2\frac{1}{8}$ " x $6\frac{1}{8}$ ". Panel cutout $1\frac{1}{2}$ " x $6\frac{1}{8}$ ". Two screw-base sockets supplied, with spring mounting clips.
Cat. No. 00-201 Net Price \$2.94

(C) Type 231 Small Tuner.
Overall dimensions: $2\frac{1}{2}$ " x $4\frac{1}{2}$ ". Panel cut out $1\frac{1}{2}$ " x $4\frac{1}{2}$ ". Supplied with screw base bulb socket and spring mounting clip.
Cat. No. 00-202 Net Price \$2.79

Type 234
For Consoles and Large Table Models
Overall dimensions: $3\frac{1}{8}$ " x $8\frac{1}{8}$ ". Panel cutout $2\frac{1}{8}$ " x $7\frac{1}{8}$ ". Supplied with two screw-type sockets with spring mounting clips.
Cat. No. 00-203 Net Price \$3.53

KNOBS



Croplastic Bar Knobs

Modern, smart designs in popular colors. Molded of "Croplastic." For test equipment, P.A. systems, etc. Brass inserts fit $\frac{1}{8}$ " shaft. Slotted-head, cup-pointed set screws.

Cat. No.	Type	Fig.	Size	Color	Net Ea.
00-233	6120	A	1 1/2"	Black	18c
00-234	6121	A	1 1/2"	Ivory	18c
00-235	6122	A	1 1/2"	Red	18c
00-236	6123	A	2"	Black	26c
00-237	6124	A	2"	Ivory	26c
00-238	6125	A	2"	Red	26c
00-239	6420	B	1 1/2"	Black	18c
00-240	6421	B	1 1/2"	Ivory	18c
00-241	6423	B	2 1/2"	Black	26c
00-242	6424	B	2 1/2"	Ivory	26c
00-243	24073*	C	1 1/2"	Black	18c

* For close to panel mounting.

Bakelite Bar Knobs

Made of durable black Bakelite with set screw for $\frac{1}{8}$ " shaft.

Cat. No.	Size	Fig.	Net Ea.
00-244	2 1/2"	D	10c
00-245	2"	E	11c
00-246	1 1/2"	E	8c
00-247	1 1/4"	D	7c

* Concave pointer.

Fluted Knobs

Molded of black Bakelite; metal inserts for $\frac{1}{8}$ " shafts.

(G) POINTER TYPE			(F) LESS POINTER		
Cat. No.	Diam.	Net	Cat. No.	Diam.	Net
00-248	1 1/2"	26c	00-251	1 1/2"	17c
00-249	1 1/4"	35c	00-252	1 1/4"	21c
00-250	2 1/4"	41c	00-253	2 1/4"	26c
SKIRTED TYPE					
00-254	2 1/4"	32c	00-255	3"	41c

Type MEA-6

Tuning indicator assembly for 6-prong magic eye tube; can be installed in any set having automatic volume control. Also for FM receivers, test instruments, signal tracers. Complete, including escutcheon, hardware, and 22" color coded cable. Less tube.
Cat. No. 00-375 Net Price 89c

Type MEA-8

For octal-type magic eye tube. New universal short bracket permits use of any of the octal tubes including dual pattern and multi-pattern types. Complete, less tube.
Cat. No. 00-376 Net Price 89c

(D) Croname Radio Dial

Compact for small size installations. Direct ratio without reduction. Scale is metal in luxurious "Croart" finish. Antique bronze escutcheon with opening $1\frac{1}{8}$ " x $3\frac{1}{4}$ ". For 180° condensers. Supplied with bushings to fit either $\frac{1}{8}$ " or $\frac{1}{4}$ " shafts. Specify whether condenser closes left or right. Broadcast and 5.5—16 mc dialation. With pilot lamp socket.
Cat. No. 00-280 Net Ea. \$1.71

(E) Croname Aluminum Dial Plates

Modern in design, attractive silvery-white finish with legible, durable figures. $2\frac{1}{8}$ " high x $2\frac{1}{2}$ " wide.

Cat. No.	Title	Calibration	Net Ea.
00-256		0-10	21c
00-257	Tone	0-10	
00-258	Gain	0-10	
00-259	Master Gain	0-10	
00-260	Record	0-10	
00-261	Microphone	0-10	
00-262	Microphone—1	0-10	
00-263	Microphone—2	0-10	
00-264	Gain	5-0-5	
00-265	Increase (with arrow)	5-0-5	
00-266	Radio-Microphone	5-0-5	48c
00-267	Record-Microphone	5-0-5	
00-268	Volume	0-10	
00-269	Fader	5-0-5	
00-270	Bass	5-0-5	
00-271	Treble	5-0-5	
00-272	Expansion	0-10	
00-273	Indicator		
00-274	Indicator ($2\frac{1}{8}$ " high x $2\frac{1}{8}$ " wide)		

(F) Chrome-and-Black Dial Plates

Highest quality etched plates. Heavy brass, satin-chrome plated, with dull black background. 3" diam. 0-100 thru 180

Cat. No. 00-275	Net Ea.	38c
3" diam. 0-100 thru 270		
Cat. No. 00-276	Net Ea.	38c

(G) Azimuth & Test Dial

For calibrating circuits; for direction finders. Calibrated over full 360°, in degrees; 6" diam.; mounted on hub for $\frac{1}{8}$ " shaft; spun chrome plate finish on heavy brass with black enamel figures; highly accurate. Type 270.10.

Cat. No. 00-232 Net Ea. \$3.23

(H) OFF-ON Switch Plate

Aluminum with black background. Toggle switch type.
Cat. No. 00-278 Net Ea. 7c

(I) Rotary Switch Plate

Etched polished aluminum with black background.
Cat. No. 00-277 Off-On Net Ea. 7c

(J) Round Control Plates

1 1/2" diam., made of etched polished aluminum with black background.

Cat. No.	Type	Net Ea.
00-279	Volume	12c
00-281	Off-Tone Control	
00-282	0-100 thru 180°	
00-283	0-100 thru 270°	

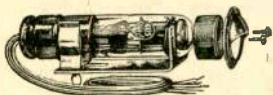
National Type CFA Chart Frame



Size $2\frac{1}{2}$ " x $3\frac{1}{4}$ " with clear celluloid to cover chart.
Cat. No. 00-200 Net Price 35c

AMPHENOL

MAGIC EYE ASSEMBLY



WALSCO

"40 Line" Walco Hardware 24¢ Per Package

All the radio hardware and accessory items that are in everyday use by the radio service man—uniform products of highest quality—are conveniently packaged in useful, economical quantities.

SCREWS

(A) WALSCO 3560—Standard machine screw assortment. Round head, cadmium plated, steel machine screws. Approx. 50 assorted Nos. 6, 8, 10 screws, $\frac{1}{2}$ " to 1" long. Cat. No. 16-001
*3560-99—200 assorted screws. Cat. No. 16-180

(A) WALSCO 3360—Small screw and nut assortment. Extra-small screws and nuts (Nos. 2 and 4) for fastening small parts, replacing rivets, etc., in radio and experimental work. Approx. 40 screws and 40 nuts. Cat. No. 16-002

(A) WALSCO 3140—A package of standard machine screws, most widely used 8-32 x $\frac{1}{2}$ " size. Approx. 50 per package. Same quality as above assortments. Cat. No. 16-003
*3140-99—200 per pkg. Cat. No. 16-181

(F) WALSCO 3553—Standard wood screw assortment, handy for shop or home. Round and flat head, brass and steel. Approx. 35 screws. Cat. No. 16-004

(B) WALSCO 3470—Sheet metal and self-tapping screws for either plastic or metal. For mounting parts to chassis, replacing rivets, etc. Hex head, slotted, cadmium plated. Assorted sizes. Approx. 30 screws per package. Cat. No. 16-005
*3470-99—125 per package. Cat. No. 16-182

(C) WALSCO 3540—Assorted rack screws with cup washers for mounting panels in racks, fastening record-players, etc. Nickel plated. Approx. 15 of each per package. Cat. No. 16-006

(C) WALSCO 3543—Widely used size 6-32 x $\frac{1}{2}$ " rack screws as above. Approx. 40 per pkg. Cat. No. 16-007

*3543-99—200 per pkg. Cat. No. 16-183

(C) WALSCO 3544—No. 6 washers for rack screws above, $\frac{1}{8}$ " O.D. Nickel plated. Approx. 50 per pkg. Cat. No. 16-008

(D) WALSCO 2950—Assortment of antique bronze finished rosette head for mounting speakers, etc. Approx. 20 screws per package. Cat. No. 16-009

(E) WALSCO 3480—Assortment of precision, hardened steel set screws for knobs, record changers, etc. Approx. 20 screws per pkg. Cat. No. 16-010

NUTS

(G) WALSCO 3520—Assorted "small pattern" nuts for electronic and electrical work. Precision-made of steel, cadmium plated. Approx. 60 per package. Cat. No. 16-011
*3520-99—200 per pkg. Cat. No. 16-184

(G) WALSCO 3190—Approximately 40, 8-32 nuts of same quality as above. The most widely used size. Cat. No. 16-012
*3190-99—200 per pkg. Cat. No. 16-185

(H) WALSCO 3530—A variety of the type of nuts used on volume controls, switches, jacks, etc. All cadmium or nickel plated. Approx. 15 per pkg. Cat. No. 16-013

SNAP-IN TRIMOUNTS

Faster than screws; for use on all modern radio sets, back covers, dial scales, built-in antennas, etc.

(I) WALSCO 3460—Approx. 25 assorted Trimounts of dimensions listed below. Cat. No. 16-014

(I) WALSCO 3462—Approx. 30 Trimounts Size: $\frac{5}{8}$ " head, $\frac{1}{4}$ " long, for $\frac{1}{8}$ " hole. Cat. No. 16-015
*3462-99—125 per pkg. Cat. No. 16-203

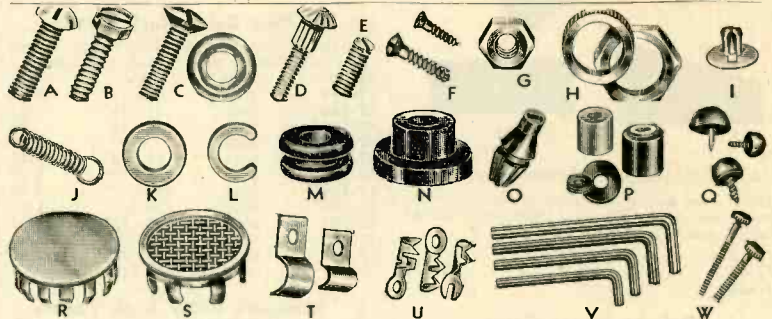
(I) WALSCO 3463—Approx. 25 Trimounts. Size: $\frac{3}{4}$ " head, $\frac{1}{4}$ " long, for $\frac{3}{16}$ " hole. Cat. No. 16-016
*3463-99—100 per pkg. Cat. No. 16-202

(I) WALSCO 3464—Approx. 25 Trimounts. Size: $\frac{1}{2}$ " head, $\frac{1}{4}$ " long, for $\frac{3}{32}$ " hole. Cat. No. 16-017
*3464-99—100 per pkg. Cat. No. 16-202

(I) WALSCO 3465—Approx. 20 Trimounts. Size: $\frac{1}{2}$ " head, $\frac{1}{4}$ " long, for $\frac{1}{8}$ " hole. Cat. No. 16-018
*3465-99—100 per pkg. Cat. No. 16-201

*WALSCO "99" LINE

Packaged in clear plastic boxes with sliding cover, the new "99" line makes an orderly small-parts shelf with the parts visible... easy to find. Approximately 4 to 6 times as many parts as in the "40" line. Items available in the "99" line are marked * on this page.
Net Per Package..... 99¢



EXPANSION SPRINGS

Expansion springs find untold applications in radio and electrical shops, laboratories, etc.

(J) WALSCO 3290—Assortment of 10 large springs. Used in record changers. Cat. No. 16-019

(J) WALSCO 3390—Assortment of 10 small springs. Cat. No. 16-020

WASHERS, RETAINER RINGS

(K) WALSCO 3510—Steel washers, cadmium plated, in standard sizes. Have the right size on hand when you need it. Approx. 100 washers per pkg. assorted for No. 4, No. 6, No. 8, No. 10, $\frac{1}{2}$ " screws. Cat. No. 16-021

(L) WALSCO 3420—Approx. 40 assorted "C" retainer rings and washers of type used for volume controls, record changers, etc. Rings are tempered spring steel; washers are annealed. Sizes for shafts $\frac{1}{8}$ " to $\frac{1}{4}$ " diam. Cat. No. 16-022

(L) WALSCO 3421—"C" shape retainer rings for $\frac{1}{8}$ " shafts. Approximately 50 per package. Cat. No. 16-023

WALSCO 3422—"C" washers for $\frac{1}{8}$ " shaft. Approx. 40 per package. Cat. No. 16-024

RUBBER GROMMETS

For protection of cables when passing thru sharp chassis holes. Also used for vibrationless mountings. Made of new oil-and-solvent-resistant synthetic rubber. For walls up to $\frac{1}{4}$ " thick material.

(M) WALSCO 3340—Assortment of about 15 grommets in sizes listed below. Cat. No. 16-025

(M) WALSCO 3341—Approx. 20 rubber grommets. For $\frac{1}{8}$ " hole; $\frac{1}{2}$ " O.D.; $\frac{1}{8}$ " I.D. Cat. No. 16-026
*3341-99—100 per pkg. Cat. No. 16-196

(M) WALSCO 3342—Approx. 15 per package. Size: for $\frac{3}{16}$ " hole; $\frac{1}{8}$ " O.D.; $\frac{1}{16}$ " I.D. Cat. No. 16-027
*3342-99—75 per pkg. Cat. No. 16-197

(M) WALSCO 3343—Approx. 15 per package. Size: for $\frac{1}{4}$ " hole; $\frac{1}{4}$ " O.D.; $\frac{1}{8}$ " I.D. Cat. No. 16-028
*3343-99—75 per pkg. Cat. No. 16-198

(M) WALSCO 3344—Approx. 10 per pkg. Size: for $\frac{1}{4}$ " hole; $\frac{1}{8}$ " O.D.; $\frac{1}{16}$ " I.D. Cat. No. 16-029
*3344-99—60 per pkg. Cat. No. 16-199

(M) WALSCO 3345—Approx. 10 per pkg. Size: for $\frac{1}{8}$ " hole; $\frac{1}{4}$ " O.D.; $\frac{1}{8}$ " I.D. Cat. No. 16-030
*3345-99—40 per pkg. Cat. No. 16-200

CHASSIS MOUNTS

Long lasting synthetic rubber mounts to reduce "microphonics," vibration, etc.

(N) WALSCO 2740—Assorted mounts, 10 per pkg. Variety of sizes, those most often required. Cat. No. 16-031

(O) CORD STRAINRELIEFS—WALSCO 3348—Grommet and strain relief combined in one piece. For appliance cord sets. Prevents insulation damage by sharp edged holes. 4 per package. Cat. No. 16-033

(P) RUBBER WASHERS AND BUMPERS—WALSCO 3440—Assortment of rubber washers, bumpers, spacers for vibrationless mounting eliminating rattles, microphonics. 20 per pkg. Cat. No. 16-032

(Q) RUBBER FEET—WALSCO 3350—12 assorted rubber feet, screw type. Supplied with wood screws; machine or self-tapping screws may be used. Cat. No. 16-053

(Q) RUBBER FEET—WALSCO 3355—Rubber tack feet. Made of oil-resistant synthetic rubber. 16 per pkg. $\frac{1}{4}$ " diam., $\frac{1}{4}$ " high. Cat. No. 16-052
*3355-99—50 per pkg. Cat. No. 16-192

(R) SNAP HOLE-PLUGS—Flat head, metal button with spring flanges. Snap into hole to seal adjustments, cover unused holes, etc. Secure fit easily removed.

Cat. No.	Walsco Type	Size	Qt.
16-034	3500	Assortment	8
16-035	3501	"	8
16-036	3502	"	8
16-037	3503	"	6
16-038	3504	"	6
16-039	3505	"	5
16-040	3506	"	4
16-204*	3501-99	$\frac{1}{4}$ "	50
16-186*	3502-99	$\frac{1}{8}$ "	50
16-187*	3503-99	$\frac{1}{4}$ "	40
16-188*	3504-99	$\frac{1}{4}$ "	30
16-189*	3505-99	$\frac{1}{8}$ "	25
16-190*	3506-99	$\frac{1}{2}$ "	20

(S) VENTILATING SNAP HOLE-PLUGS—WALSCO 3320—Ventilation for amplifiers, transmitters, portable equipment, etc. by fine wire screen; plugs fit in as above. 2, $\frac{1}{2}$ " and 2, 1" hole plugs per pkg. Cat. No. 16-041
*WALSCO 3320-99 Cat. No. 16-191

(T) CABLE CLAMPS—Cadmium plated, heavy gauge steel, $\frac{1}{2}$ " wide. Precisely punched, formed, with No. 6. No. 8 mtg. holes.

Cat. No.	Walsco Type	Diam.	per Pkg.
16-042	3330	Assortment	25
16-043	3331	$\frac{1}{4}$ " to $\frac{1}{2}$ "	40
16-044	3332	$\frac{1}{8}$ " to $\frac{1}{4}$ "	35
16-045	3333	$\frac{1}{4}$ " to $\frac{1}{2}$ "	25
16-193*	3331-99	$\frac{1}{8}$ " to $\frac{1}{4}$ "	125
16-194*	3332-99	$\frac{1}{4}$ " to $\frac{1}{2}$ "	100
16-195*	3333-99	$\frac{1}{4}$ " to $\frac{1}{2}$ "	75

(U) TERMINAL LUGS—WALSCO 3280. Six assorted sizes most often used. Accurately formed for easy mounting. Of thinned brass. Approx. 40 lugs per pkg. Cat. No. 16-046

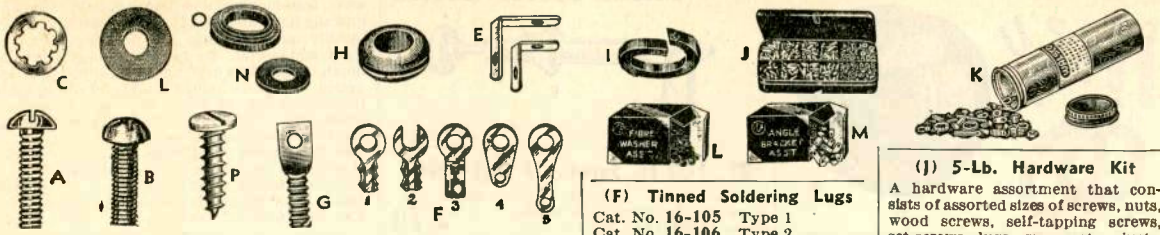
(V) KEY WRENCHES—Wrench sets for hex and spline socket screws. Made of special alloy steel to fit all standard socket screws used in radio and electronic equipment.

Cat. No.	Walsco Type	Description
16-047	3580	5 Hex wrenches; fit set screws No. 4 to $\frac{1}{2}$ ". Cap screws No. 2 to 8.
16-048	3581	4 Hex wrenches; for set screws $\frac{1}{8}$ " to $\frac{1}{4}$ ". Cap screws No. 8 to $\frac{1}{2}$ ".
16-049	3584	4 spline wrenches; for set screws up to $\frac{1}{4}$ " and cap screws up to No. 8.

FELT PADS—WALSCO 3495—Pads for phono cabinet lids, feet, etc. 60 discs $\frac{1}{2}$ " diam., $\frac{1}{8}$ " thick. Cat. No. 16-050

(W) PHONO PICKUP SET SCREWS—WALSCO 2570. Knurled head, steel screws, antique bronze finish. Assortment for all popular pickups and recording heads. 10 per package. Cat. No. 16-051

RADIO - ELECTRICAL HARDWARE



(A) Machine Screws
Round head, nickel-plated steel.

Cat. No.	Size	Net Per Gross
16-128	6-32 x 1/4"	37c
16-129	6-32 x 3/8"	38c
16-130	6-32 x 1/2"	41c
16-131	6-32 x 5/8"	46c
16-132	6-32 x 3/4"	53c
16-133	6-32 x 7/8"	68c
16-134	6-32 x 1"	76c
16-135	6-32 x 1 1/8"	93c
16-136	8-32 x 1/4"	46c
16-137	8-32 x 3/8"	53c
16-138	8-32 x 1/2"	58c
16-139	8-32 x 3/4"	98c

(B) R-H Philips Head Machine Screws

Cat. No.	Size	Net Per Gross
16-140	6-32 x 1/4"	43c
16-141	6-32 x 3/8"	44c
16-142	6-32 x 1/2"	45c
16-143	6-32 x 5/8"	52c
16-144	8-32 x 1/4"	38c
16-145	8-32 x 3/8"	42c
16-146	8-32 x 1/2"	57c

SHAKEPROOF LOCK WASHERS — Fit 6-32 screw. Fig. C

Cat. No. 16-111	Per Gross Net	54c
Cat. No. 16-112	Fit 8-32.	54c

SHAKEPROOF LUGS — 6-32 screw size.

Cat. No. 16-113	Net per Gross	54c
Cat. No. 16-114	8-32 size.	54c

RUBBER BUMPER FEET — With 6-32 screw.

Cat. No. 16-115	Net per Gross	\$2.25
	Net per Doz.	39c

(E) Angle Brackets
Nickel-plated angle brackets. 1/2" wide.

Cat. No.	Size	Net Price Per Doz.
16-116	1 x 1 1/2"	11c
16-117	1 x 2"	17c
16-118	1 x 1"	25c
16-119	1 1/2 x 1 1/2"	31c
16-120	1 1/2 x 1 1/2"	38c

(F) Tinned Soldering Lugs

Cat. No. 16-105	Type 1	
Cat. No. 16-106	Type 2	
Cat. No. 16-107	Type 3	
Cat. No. 16-108	Type 4	
Cat. No. 16-109	Type 5	
Net per package of 100 lugs		34c
10 packages, Net Price		\$3.06

(G) Spade Lugs
For mounting shields to chassis. Cadmium plated steel. 6-32 thread.

Cat. No. 16-110	Per Doz.	Net 10c
		Per Gross Net 65c

(H) Rubber Grommets
Insulate and protect cable from sharp holes in metal panels, chassis, etc. Pure gum rubber.

Cat. No.	Fits Hole	Net Price Per Doz.
16-122	1/4"	9c
16-123	3/8"	20c
16-124	1/2"	22c

(I) Split Lock Washers
In packages, 24 per pkg.

Cat. No.	Size	Net Price per Pkg.
16-125	8	7c
16-126	10	7c

(J) 5-Lb. Hardware Kit
A hardware assortment that consists of assorted sizes of screws, nuts, wood screws, self-tapping screws, set-screws, lugs, grommets, rivets, washers — all the fittings needed for everyday requirements.
Cat. No. 16-103 Net Price \$2.56

(K) 1,000-Piece Radio Hardware Assortment
Contains 1,000 pieces of assorted machine screws, wood screws, nuts, bolts, rivets, eyelets, lugs, lock washers, fibre washers, bakelite washers, rubber grommets, etc.
Cat. No. 16-104 Net Price 89c

(L) Assortment of Fibre Washers
Box of assorted fibre washers, both flat and shoulder types included. Diverse diameters, thicknesses, holes. 100 per box. Sizes to take screws No. 6 to No. 10; volume control shafts 1/4" to 3/8".
Cat. No. 16-127 Net Price 36c

(M) Bracket Assortment
Box of 28 assorted nickel-plated metal brackets. Offset and angle type.
Cat. No. 16-121 Net Price 41c

RADIO HARDWARE IN JARS

The most convenient method of keeping hardware always on hand, sorted, easily selectable. Price includes hardware and glass jar. Any Radio Hardware Jar. 33c
Glass jar, empty. Cat. No. 16-072 Net Each 6c

(N) Fibre Washers

Cat. No.	Quantity	Size
16-092	125	6
16-093	100	8
16-094	90	10

(N) Plated Steel Washers

Cat. No.	Quantity	Size
16-095	100	6
16-096	100	8
16-097	100	10

(O) Insulating Washers
SHOULDER TYPE

Cat. No.	O.D.	Shoulder Hole	Quant.
16-099	1/4"	1/8"	50
16-100	3/8"	1/4"	50
16-101	1/2"	3/8"	50
16-102	3/4"	1/2"	50

Hex Nuts

Cat. No.	Quantity	Size
16-081	100	4-36 x 1/4"
16-082	90	6-32 x 1/4"
16-083	80	6-32 x 3/8"
16-084	80	8-32 x 1/4"
16-085	50	10-32 x 3/8"

Rack Screws with Cup Washers
Twenty oval head screws, 10-32 x 1/2" with cup washers. Cat. No. 16-098

(P) Self-Tapping Screws

Cat. No.	Quantity	Size
16-086	50	6 x 1/4"
16-087	45	6 x 3/8"
16-088	40	7 x 1/2"

(C) Shakeproof Lock Washers

Cat. No.	Quantity	Size
16-089	100	6
16-090	90	8
16-091	80	10

(A) Finger-Grip Plug Cap — Molded bakelite finger-grip cap that prevents the strain of wire-pulling. Screw-terminals; fits standard receptacle. Rating: 10 amps., 250 volts; 15 amps., 125 volts. Cat. No. 16-251 Net Each . 10 for

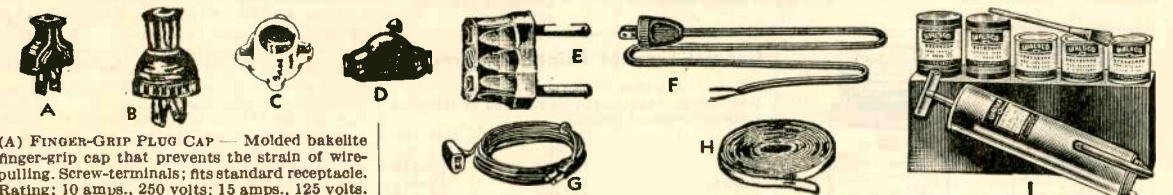
(B) RUBBER HANDLE CAP — Ideal for heavy appliances, motors, etc. Screw terminals; standard prongs. Cat. No. 16-252 Net Ea. 8c 10 for 72c

BAKELITE CUBE TAP — Adapts single receptacle to take three plugs. Cat. No. 16-253 Net Each 11c

(C) CLEAT RECEPTACLE — Ceramic socket, threaded for standard size lamps, plug bodies. Medium base 2 1/4" diam. Screws spaced 1 1/4". Cat. No. 16-254 Net Each 16c

(D) FEED-THRU SWITCH — Bakelite body; Underwriters' Lab. inspected. Extension cord of appliance or tool feeds thru switch. Rating 3 amps., 250 volts; 6 amps., 125 volts. Cat. No. 16-255 Net Each 25c

(E) JFD FOREIGN ADAPTER — Converts American male plug to Continental male plug; converts foreign receptacle to standard American receptacle. Cat. No. 16-256 Net Each 17c



(F) REPLACEMENT CORD & PLUG — Complete high-quality unit for replacing damaged cords on appliance. 6-foot cord is securely gripped by spring prongs. Stripped wire ends are already tinned. Cat. No. 16-257 Net Each 17c

(G) BELDEN DUAL-OUTLET EXTENSION — Famous Belden quality extension with double outlet receptacle. U. L. listed. Rubber cord 10' long, rubber plug cap. Cat. No. 16-258 Net Each 71c

(H) FRICTION TAPE — Standard composition black electrical tape for a multitude of household and industrial uses. Individually packaged. Cat. No. 16-259 2 oz. Roll. Net Each 12c
Cat. No. 16-260 4 oz. Roll. Net Each 21c
Cat. No. 16-261 8 oz. Roll. Net Each 36c

(H) RADIO FRICTION TAPE — 3/8" width of these 60' rolls for more convenient and more economical radio work. Cat. No. 16-272 Net Each 26c

(I) Walsco Flock Spray Outfit
Velvet-like, colorful, durable felt flock finish can be obtained by any novice with the Walsco Flock Spray Gun. For use on radio cabinets, phono turntables, speaker grilles, etc. Kit contains spray gun, ivory and brown felt flock, undercoats to match, thinner, brush, instructions.
Cat. No. 16-063 Kit K-50. Net Price \$6.76

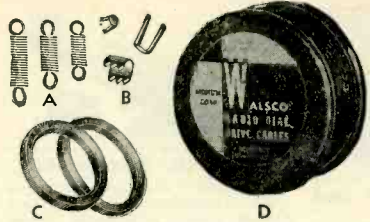
Walsco Felt Flock Materials
FELT FLOCK — Made of rayon fibers cut to uniform lengths for even nap. Bright colors. In 3 1/2 oz. containers. 1 oz. covers 1 1/2 to 2 sq. ft.

Cat. No.	Color	Cat. No.	Color	Net Ea.
16-064	Brown	16-066	Red	97c
16-065	Ivory	16-067	Green	

FELT FLOCK UNDERCOAT — Provides color base and an excellent adhesive for felt flock. In 1/2 pint cans, covers about 10 sq. ft.

Cat. No.	Color	Cat. No.	Color	Net Ea.
16-068	Brown	16-070	Red	82c
16-069	Ivory	16-071	Green	

Radio Chemicals DIAL ACCESSORIES

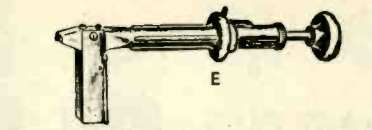


(A) Walsco Dial Drive Springs
 ASSORTMENT 3400 — Ten assorted springs of fine music wire carefully looped at each end and rust-proofed. Includes large and small springs.
 Cat. No. 00-460 Net Ea. 24c
 ASSORTMENT 3410 — Ten assorted small springs, $\frac{1}{2}$ " to $\frac{3}{4}$ " long.
 Cat. No. 00-461 Net Ea. 24c

(B) Radio Knob Springs
 WALSCO 3450 — The better method of fastening knobs to shafts. Assortment of about 20 springs in all regular sizes and shapes.
 Cat. No. 00-462 Net Ea. 24c

Dial-drive Rubbers
 Finest grade rubber friction drives in assorted sizes as used in RCA, Emerson, Stewart Warner, etc.
 Cat. No. 00-463 Net Ea. 88c

JFD Dial Belt Kits
 The belts most manufacturers use. Kit assortments in sturdy metal indexed cabinets. Each kit includes, with belts, 1 measurement chart, a conversion chart, and 64-page belt booklet covering all types of belts.
 KIT B25A — Assortment of 25 belts. \$3.94
 Cat. No. 00-464 Net Price
 KIT B100A — Assortment of 100 belts. \$14.70
 Cat. No. 00-465 Net Price
 All JFD dial belts are available singly. Specify JFD catalog number, or send old belt.
 Net Ea. 15c



(D) 100-ft. Spools Of Dial Cord
 SPOOL 35-1C — "Special Thin" cord .025" diam., 30 lbs. breaking strength. \$2.70
 Cat. No. 00-454 Net Ea.
 SPOOL 39-1C — "Standard" cord .031" diam., 32 lbs. breaking strength. \$2.70
 Cat. No. 00-455 Net Ea.
 SPOOL 34-1C — "Medium" cord .042" diam., 35 lbs. breaking strength. \$2.70
 Cat. No. 00-456 Net Ea.
 SPOOL 33 — Heavy dial cord as used on Philco, Majestic. .062" diam.; treated to prevent slip.
 Cat. No. 00-457 Net Ea. \$1.02

SPOOL 31 — 16-strand braided bronze cable, .040" diam., 50 lb. breaking strength.
 Cat. No. 00-458 Net Ea. 70c
 SPOOL 30 — Phosphor bronze cable, .040" diam., 42 strand. Breaking strength 60 lbs.
 Cat. No. 00-459 Net Ea. 88c

Walsco Dial Cables & Cords
 MULTISPOOL — For the serviceman's "call" kit. Provides cable and cord for all needs on one handy, compact, divided spool: 15 ft. of phosphor bronze cable No. 30; 15 ft. of heavy cord No. 33; 15 ft. of medium cord No. 34; 15 ft. of special thin cord No. 35. \$2.06
 Cat. No. 00-450 Net Price
 THRIFTY-SPOOL, "A" — A small practical assortment of three popular dial cables: 15 ft. each of bronze cable No. 31, medium cord No. 34, and special thin cord No. 35. \$1.47
 Cat. No. 00-451 Net Price
 THRIFTY-SPOOL "B" — A substantial saving is offered by this one spool containing 15 ft. each of No. 39 Standard cord, No. 34 medium cord, and No. 35 special thin cord. \$1.47
 Cat. No. 00-452 Net Price

(C) Phono-Motor Rubber Drives

Exact replacements for all standard phono-motor drives. Preection-made of abrasion-resistant synthetic rubber to be sure uniform speed and long life. Attach with rubber cement. Net Each 24c

Cat. No.	Walsco Type	I.D.	O.D.	Thick	Quantity per Pkg.	Used on
16-054	2560-16	2"	2 1/2"	3/32"	2	General Ind. Alliance
16-055	2560-17	1 1/2"	1 1/2"	1/16"	2	Motorola
16-056	2560-18	1 1/2"	1 1/2"	1/16"	3	RCA
16-057	2560-19	1 1/2"	1 1/2"	1/16"	4	Philco, RCA, etc.
16-058	2560-20	5/8"	6"	1/16"	1	Detroitla
16-059	2560-25				1	Detroitla, Utah 1946-47 models



R.M.A. COLOR CODING KIT
 Kit includes all standard R.M.A. colors: black, brown, red, orange, yellow, green, blue, purple, gray, and white. Brilliant hues. Complete with brushes and color chart.
 Cat. No. 16-401 Net Price \$1.03

DIAL LITE COLORING
 Long-lasting coloring for multi-colored bulbs. Just dipping does it. Dries instantly. Colors: red, green, blue, amber; and solvent.
 Cat. No. 16-402 Net Price 41c

LUMINOUS LITE-KOAT
 Long-life "glows in the dark" coating materials, complete in one kit. Coating absorbs light during daytime, emits light in the dark. For dials, knobs, switch plates, etc. With complete instructions and many suggestions. Kit includes Lite-Koat powder, Mix-Koat, Top-Koat, brushes and thinner.
 Cat. No. 16-403 Net Price \$1.47

General Cement Paints & Varnishes

AIR-DRY WRINKLE VARNISH
 Requires no baking; can be brushed or sprayed; gives professional results.

Color	Cat. No.	Cat. No.
	1/2 Pt.	1 Pt.
Black	16-404	16-410
Brown	16-405	16-411
Green	16-406	16-412
Silver Grey	16-407	16-413
Red	16-408	16-414
Blue	16-409	16-415
Net Each	1/2 pint 26c	1 pint \$1.32

CRYSTAL FINISH LACQUER
 Black, air-drying lacquer that gives a professional finish on any metal; easy to apply.

Color	Cat. No.	Cat. No.
	1/2 Pt.	1 Pt.
Black	16-416	16-419
Gray	16-417	16-420
Brown	16-418	16-421
Net Each per	1/2 pint 26c; per 1/2 pint 88c	

TELEPHONE BLACK AND GRAY
 Good-covering, fast-drying enamel. Ebony black, handsome gray.

Color	Cat. No.	Cat. No.
	1 Pt.	1 Pt.
Black	16-422	16-424
Gray	16-423	16-425
Net Price per	1/2 pint 21c; per 1 pint \$1.18	

(E) Walsco Staple Driver

Just the thing for rapid installation of ground wires, lead-in wires, and indoor aerials. Reaches into the hard-to-get-at places and drives staples quickly and accurately into wood, plaster, cement, and mortar. To protect insulated wire, the depth the staple is driven may be adjusted as required. Magazine holds 23 staples of size suitable for holding No. 14 wire. Feed mechanism operates with trigger. Supplied with box of 250 staples and suggestions for use.
 Cat. No. 16-060 Net Price \$4.85
 Box of 250 staples for Walsco Stapler.
 Cat. No. 16-061 Net Price 32c
 Box of 1,000 staples for Walsco Stapler.
 Cat. No. 16-062 Net Price \$2.41

Walsco Radio Chemicals



RADIO CEMENT — Vibration-proof and heat-resisting for repairing speakers and for general radio work.
 Cat. No. 16-156 4 oz. bottle. Net Each 59c
 Cat. No. 16-147 8 oz. bottle. Net Each 94c
 Cat. No. 16-148 1 pt. bottle. Net Each \$1.76

PLASTIC CEMENT — For repairing broken plastic knobs, grid caps, etc. Waterproof, heat-resistant. Dries fast, forms strong bond.
 Cat. No. 16-149 2 oz. bottle. Net Each 35c

VINYLITE CEMENT — With Vinylite plastic resin base for excellent adhesion to metals, plastics, leather, cardboard, paper. Flexible when dry.
 Cat. No. 16-150 2 oz. bottle. Net Each 41c

RUBBER CEMENT — For cementing rubber mounts, cushions to chassis, lids, etc.
 Cat. No. 16-151 4 oz. bottle. Net Each 59c

CEMENT SOLVENT AND THINNER — To loosen cement on speaker cones, voice coils, etc., and to thin Radio and Plastic Cements above.
 Cat. No. 16-152 4 oz. bottle. Net Each 35c
 Cat. No. 16-153 8 oz. bottle. Net Each 50c
 Cat. No. 16-154 1 pt. bottle. Net Each 76c

POLYSTYRENE CEMENT — Used as coll dope to moisture-proof. Also to hold windings in place. Negligible electrical losses even UHF.
 Cat. No. 16-155 4 oz. bottle. Net Each 59c

WALSOCOLUB B — Applied to switches, push buttons, tuners, volume controls, etc., to prevent corrosion and eliminate noise.
 Cat. No. 16-166 1 1/2 oz. tube. Net Each 32c

CONTACTENE — A combination of solvent and Walscolub B that cleans contacts, lubricates, and protects against corrosion.
 Cat. No. 16-167 2 oz. bottle. Net Each 29c
 Cat. No. 16-168 4 oz. bottle. Net Each 38c
 Cat. No. 16-169 8 oz. bottle. Net Each 53c

MOTOR AND GEAR LUBRICANT — For phono motors, record changers, etc. Long-lasting.
 Cat. No. 16-170 1 1/2 oz. tube. Net Each 32c

NO-SLIP — Contracts, sets, and shrinks dial belts, cords, etc., to stop slip immediately.
 Cat. No. 16-171 2 oz. bottle. Net Each 44c

CARBON TETRACHLORIDE — May be used on most delicate parts to instantly dissolve grease and dirt. Non-inflammable.
 Cat. No. 16-173 4 oz. bottle. Net Each 32c

RADIO DIAL OIL — A light-bodied lubricant, ideal for all electronic and electrical appliances.
 Cat. No. 16-172 2 oz. bottle. Net Each 26c

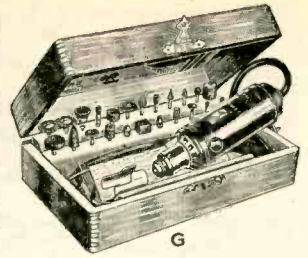
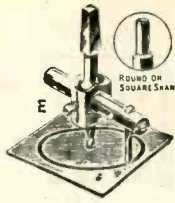
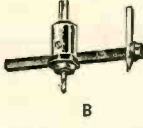
SCHABTCH REMOVING POLISH — A blend of polish and stain that removes cabinet and furniture scratches and polishes. Will not change shade of finish.
 Cat. No. 16-174 Dark. 4 oz. bottle. Net Ea. 29c
 Cat. No. 16-175 Light. 4 oz. bottle. Net Ea. 29c

SUPER POLISH — For a "brand new" appearance. Super polish removes old polish, grease, or dirt, and forms a dry, durable film for protection and polish.
 Cat. No. 16-176 4 oz. bottle. Net Each 29c
 Cat. No. 16-177 8 oz. bottle. Net Each 44c

RECORDENE — Cleans dirt, grease, and dust from record grooves to increase record life and decrease surface noise.
 Cat. No. 16-178 2 oz. bottle. Net Each 29c

INSULATING VARNISH — Fast-drying on transformer, solenoid, motor coils, etc. Withstands heat, acid, oil, grease. Non-corrosive.
 Cat. No. 16-179 2 oz. bottle. Net Each 35c

QUALITY HAND TOOLS



(A) Casco Electr-O-Tool Kit

Casco gives you an extra-quality power tool complete with 20 useful accessories all contained in a handsome case. Electr-o-tool is specially designed for both mechanics and hobbyists. Its perfect performance is a time-saver at home, shop, store, or at the work bench; grinds, drills, engraves, curves, routs, saws, sands, polishes, sharpens, cleans. Two easily changed collets hold all accessories. Smooth vibrationless power at high speed with precision built motor; triple cooling for steady performance under load; safety sleeve locks shaft, preventing accidental starting while inserting accessory. Kit includes 1 polishing wheel, 3 mandrels, 1 felt wheel, 3 brushes, 2 abrasive discs, 2 collets, 1 ball cutter, 1 dressing stone, 1 wrench, 4 emery wheels, one 1/8" speed drill.

Cat. No. 17-370 Net Price

\$14.95

Impakt Self-Acting Center-Punch and Scriber

The complete layout tool; handy, pencil-size with hardened steel point for scribing on metal or plastic. Spring barrel provides impact for center punch; hold point against work, pull up control knob and let go — Impakt makes a clean, precise centering mark, depth depending on distance knob is pulled up. Ideal for panel and chassis layout.

Cat. No. 17-601 Net Price

\$1.50

(B) Circle Cutter

Rugged, square shank cutter that will cut holes from 1/2" to 8" in metal, wood, plastics, etc. Has 3/4" shaft to fit any hand- or motor-driven chuck. Removable 3/16" pilot drill.

Cat. No. 17-580 Net Price

\$3.35



(H) Speedex Wire Stripper

A fast, easy operating tool; speeds plant production; saves valuable time on field job. Can be fastened to the bench or held in the hand. Interchangeable precision steel blades can be purchased separately.

Standard Model — Strips ends of wire or anywhere along the length. Can be used for 90% of all stripping jobs.

Cat. No.	No.	12 to 20 wire	Net Ea.
17-470	733		\$3.53
17-471	733-A	14 to 30 wire	3.53

Automatic Models. — Jaws stay open until wire is removed. Strips finest stranded wire without crushing.

Cat. No.	Type	12 to 20 wire	Net Ea.
17-472	744		\$4.70
17-473	744-A	14 to 30 wire	4.70

(J) Hollow-Handle Hand Drill

Heavy 3 1/2" single-gear drive; three-jaw chuck handles standard round shank drills up to 1 1/2"; chuck closes down to grip firmly even the extremely small size drills. Hollow wooden handle storing extra drills has threaded cap.

Cat. No. 17-541 Net Price

\$1.45

(C) Lenk Type 104 Gasoline Blotorch

Heavy duty gasoline blow torch that generates quickly and delivers high steady heat; extra-large priming cup for faster starting; flame control and shut-off valve; self-cleaning orifice. Non-clogging burner.

\$1.96

Cat. No. 17-525 Net Each

(D) Type 108 Alcohol Blotorch

Blows itself; works on denatured or commercial alcohol; screw top for easy loading; copper heat conductor attached to wick in pressure chamber insures quick starting; even fuel feed for steady heat; leakproof solid base. Size 5 1/4" x 2 1/2" x 1 1/4".

\$1.14

Cat. No. 17-526 Net Each

(E) Pawood Hole Cutters

Heavy-duty tool Type 5 for brace or electric drill. Cuts holes 1" to 5 1/2" diameter in steel, Bakelite, or wood. Type 4 is similar to Type 5 but cuts holes 1/2" to 4" in diameter. Pawood "Junior" is for amateur or light work, cuts holes 1/2" to 2 1/2" diameter. Type No. 2 cuts holes 1" to 4" in light metals, hardwood, plastics, etc.

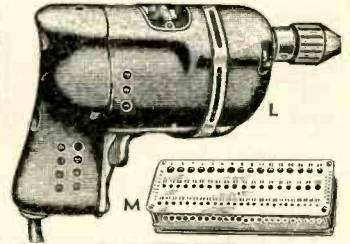
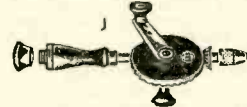
Cat. No.	Type	Net Ea.
17-508	Type 5, round shank	\$1.88
17-509	Type 5, square shank	1.88
17-510	Type 4, round shank	1.30
17-511	"Junior," round shank	.78
17-512	Type 2, round shank	1.12

Cat. No. 17-513 Replacement blades for above hole cutters. Net Each \$3.00

(F) Tap and Die Set

Extremely useful in the home or shop. Set contains one each 6-32; 8-32; 10-32; 4-36; 1/2-20 tap and die, one die stock, and one tap and reamer wrench; in hardwood case with hinged cover.

Cat. No. 17-585 Net Price \$3.45



(I) Greenlee Radio Chassis Punch

Will make or enlarge holes in any radio chassis metal up to No. 10 gauge. Operates simply by turning the screw with a wrench until the hole is cut through. No reaming or filing, hole is smooth, perfect. Available in 13 sizes. Type No. 730.

Cat. No.	Size	Net Ea.	Cat. No.	Size	Net Ea.
17-450	1/16"	\$1.94	17-460	1 1/4"	\$2.25
17-451	1/8"	1.94	17-461	1 1/2"	2.25
17-452	3/16"	1.94	17-462	1 3/4"	2.25
17-453	1/4"	1.94	17-463	1 3/4"	2.57
17-454	5/16"	2.12	17-464	1 3/4"	2.88
17-455	3/8"	2.25	17-465	2 1/4"	5.58
17-456	1/2"	2.25			

Knockout Punch Set No. 735

Set No. 735 is designed to permit fast, easy enlarging of knockouts and cutting of holes for conduit in metal boxes. Can also be used in auto work for heater pipes and other accessories. Set includes four punches for cutting 1/4", 1/2", 1 1/8", 1 1/4" holes for 1", 1 1/4", 1", 1 1/4" conduit. Complete with leather case.

Cat. No. 17-457 Net Price \$9.00
 Knockout Punch Set No. 737 — Similar to set No. 735 above, with two punches for cutting holes 1 1/4" and 2 1/4" for 1 1/2" and 2" conduit.
 Cat. No. 17-458 Net Price \$9.00
 Knockout Punch Set No. 738 — For cutting holes 2 1/2" diameter for 2 1/2" conduit. Similar to smaller sizes.
 Cat. No. 17-459 Net Price \$12.60

(L) Black and Decker 1/4" Drill

Ideal for home or shop use; small, light, sturdy, and dependable; easy to handle; for steel, plastics, metal, or wood. Speed — 2250 R.P.M. Housing is die-cast aluminum. Jacobs hex-key chuck. Weight 3 1/4 lbs. 7 1/4" overall length. 110 volts AD/DC.

Cat. No. 17-535 Net. Price \$18.95

(K) Drill Case

Opening the cover lifts the drills into position for easy selection; drills lower into case when lid is closed; clearly indexed for sizes; compact and sturdily built. Type No. 41 for drills 1 to 60. Less drills.

Cat. No. 17-502 Net Price \$2.45

(M) Drill Stand

Sturdily constructed of heavy gauge aluminum and steel plates with five supporting rivets and spacers. Ample finger space for selecting drills. Sizes clearly indexed. Type No. 51 for 1 to 60 drills. Size 6 1/2" x 2 1/2" x 1 1/4".

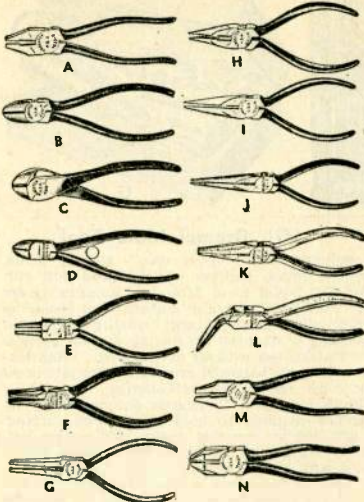
Cat. No. 17-503 Net Price 55c

(N) Drill and Wire Gauge

For 1 to 60 drills. Lists tap, tap drill, and body drill sizes, decimal equivalents.

Cat. No. 17-504 Net Each 95c

QUALITY TOOLS



Kraeuter Line of Drop-Forged Steel Tools

Kraeuter "INDUSTRIAL" hand tools are thoroughly tested working tools manufactured under the most rigid specifications to ensure unexcelled performance on the job for which each is designed. The Kraeuter process of edging, hardening and tempering, grinding and polishing, testing, and final inspection of the finished tool is the same of quality production.

Cat. No.	Fig.	Type	Net
17-301	A	1830 6 1/2" side-cutters	\$1.59
17-302	B	4501 5" diagonal cutters	1.59
17-303	B	4501 6" diagonal cutters	1.87
17-304	C	4610 7" heavy diagonal cut.	1.83
17-305	D	2612 6 1/2" wire-strip diag.	2.35
17-306	E	1611 4" Rd. nose, rd. jaw	1.30
17-317	E	1611 6" Rd. nose, rd. jaw	1.53
17-307	F	1601 4" short flat nose	1.11
17-308	F	1601 6" short flat nose	1.36
17-309	G	1741 6" long flat nose	1.59
17-310	H	1643 5" Short needle nose	1.60
17-311	I	1661 6" Long needle nose cutters	1.79
17-312	J	1771 7" Ext. long needle nose cutters	1.83
17-313	K	1691 6" Half-rd. chain nose	1.62
17-314	L	1631 5 1/2" Snipe nose	1.91
17-315	M	1380 6 1/2" Side-cutters	1.23
17-316	M	1380 8" Side-cutters	1.57
17-318	N	1801 8 1/2" side-cutters	2.79

(AA) Stevens Walden

Might Set 3100A — Kit includes hinge handle used as either offset wrench or tee handle; Splintite handle; 6-point sockets, 1/8", 1/4", 3/8", 1/2"; 12-point sockets, 1/8", 1/4", 3/8", 1/2"; 8-point sockets, 1/8", 1/4", 3/8", 1/2". In drawn steel case, 6 1/2" x 2 1/2" x 1 1/2".
Cat. No. 17-350 Net Price \$5.85

Spintite Wrench Set

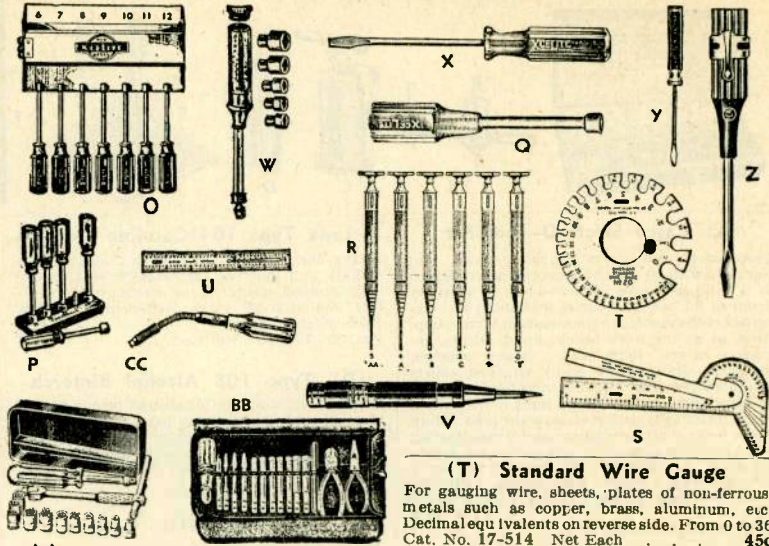
Set T-73 — Most popular Spintite set. Contents: 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1" Spintite wrenches and sturdy wooden stand for close-at-hand bench convenience.
Cat. No. 17-351 Net Price \$3.82

Set T-51 — Compact tool roll with ideal assortment of Spintites and tools. Contents: universal handle; Spintite shanks, 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"; Reamawl 1/8" to 1/2"; leatherette roll.
Cat. No. 17-352 Net Price \$5.44

(BB) Set T-52 — Deluxe electrical and radio roll kit. Contents: universal handle; Spintite shanks, 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"; screwdrivers, 1/4" x 4", 3/8" x 4", 1/2" x 4"; Reamawl 1/8" to 1/2"; 6" long nose pliers; 5" diagonal cutters; neutralizing and alignment tool; leatherette roll.
Cat. No. 17-353 Net Price \$8.23

(CC) Flexible Socket Driver Set

Actually reaches around corners to get at inaccessible places. Steel-wire-coil shaft. Amber handle. With six 6-point sockets, 1/8", 1/4", 3/8", 1/2", 5/8", 3/4". With wood case.
Cat. No. 17-530 Net Price \$1.80



(O) Xcelite Nut Drivers Set 27

Top quality Xcelite nut drivers, in the popular sizes; held in a unique, metal tool that is a model of convenience and efficiency. Selection of the right tool becomes second nature. Nut drivers are precision formed, free of burrs, fit snugly; sockets deep enough to fit two nuts; shaft hole 1 1/8". Handles of special fire- and shock-resistant plastic are color-coded for size. Tool holder has special locking arm, can be padlocked. Set includes 7 nut drivers, 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"; with holder.
Cat. No. 17-380 Net Price \$3.82

(P) Nut Driver Set No. 15

A five-driver Xcelite set that offers the most useful sizes with a compact tool stand for convenient bench or shelf storage. Driver sockets are precision formed, entirely free of burrs and fit nuts snugly. Tempered and well finished. Shockproof Xcelite handles. Set includes: 1/8", 1/4", 3/8", 1/2", 5/8" nut drivers; metal stand, with sizes labeled.
Cat. No. 17-381 Net Price \$2.38

(Q) Xcelite Nut Drivers

Widely accepted as the standard of high quality. Xcelite nut drivers are guaranteed against defective materials and workmanship for one year. Available in all sizes as listed below.

Cat. No.	Type No.	Nut Size	Net Ea.
17-382	6	1/8"	
17-383	7	1/4"	
17-384	8	3/8"	
17-385	9	1/2"	
17-386	10	5/8"	
17-387	11	3/4"	
17-388	12	7/8"	
17-389	14	1"	59c
17-390	16	1 1/8"	59c

(W) Hollow Handle Screw-Nut Driver Set

Heavy-duty steel hollow handle stores screw driver socket and hex sockets; hex sizes: 1/4", 3/8", 1/2", 5/8", 3/4"; handle knurled to furnish secure gripping surface. Overall finish, white nickel.
Cat. No. 17-575 Net Price 79c

(R) Midget Screwdrivers

Jewelers' type screwdrivers made of steel tubing with tempered steel blades and free-turning swivel head. Removable blades held firmly by threaded chuck; body knurled and nickel plated. Overall length 3 1/2", body diam. 1/8". Set of 6 screwdrivers per box with .100" to .025" blades.
Cat. No. 17-505 Net Price \$3.35

(S) MULTI-USE RULE AND GAUGE — 4-inch scale to 1/8", drill-point angle gauge, square, bevel protractor, center finder for shafts and discs, circle-divider, tap drill table — all these features combined in one amazing pocket tool. Stainless steel. With leather case.
Cat. No. 17-506 Net Price 95c

(T) Standard Wire Gauge

For gauging wire, sheets, plates of non-ferrous metals such as copper, brass, aluminum, etc. Decimal equivalents on reverse side. From 0 to 36 Cat. No. 17-514 Net Each 45c

(U) 6" Scale and Wire Gauge

Stainless steel rule graduated in 64ths with table of decimal equivalents etched in the back. Wire gauge gives Browne & Sharpe ratings for wires from No. 20 to No. 8.
Cat. No. 17-507 Net Each 25c

(V) Automatic Center Punch

Pushing the punch with the hand sets and releases built-in striking mechanism which makes a uniform impression on metal or plastic. Either light or heavy impression. 1/8" diameter by 5" long. Finest shock-resisting alloy steel.
Cat. No. 17-500 Type No. 79 Net Each \$2.25 Replacement point.
Cat. No. 17-501 Net Each 25c

(Q) Hollow Shaft Nut Drivers

The ideal tool for installing and removing volume controls and other panel equipment; for telephone or power switchboards where long bolts or studs are encountered.

Cat. No.	Type No.	Nut Size	Hole Depth	Net Ea.
17-391	HS-10	1/8"	2 1/2"	62c
17-392	HS-11	1/4"	2 1/2"	62c
17-393	HS-12	3/8"	5"	62c
17-394	HS-14	1/2"	5"	71c
17-395	HS-16	5/8"	5"	73c
17-396	HS-18	3/4"	5"	76c
17-397	HS-20	7/8"	5"	88c

(X) Xcelite Screwdrivers

Shockproof, break proof, amber plastic handle; chrome vanadium steel blade ground to fit screw slot accurately; embedded end of blade has wing design, prevents blade turning in handle. Sizes marked on handle.

Cat. No.	Blade Size	Type No.	Net Ea.
17-398	1/8" x 2"	3322*	18c
17-399	1/8" x 4"	3324*	18c
17-400	1/8" x 2"	182	26c
17-401	1/8" x 3"	183*	18c
17-402	1/8" x 4"	184*	18c
17-403	1/8" x 4"	184†	29c
17-404	1/8" x 6"	186†	32c
17-405	1/8" x 10"	1810†	38c
17-406	1/8" x 3"	5323	35c
17-407	1/8" x 4"	3164	44c
17-408	1/8" x 6"	3166	50c
17-409	1/8" x 8"	3168	53c
17-410	1/8" x 4"	144	53c
17-411	1/8" x 6"	146	56c
17-412	1/8" x 8"	148	62c

* 3/8" diameter handle. † 1/2" diameter handle.

(Y) Spark Plug Tester

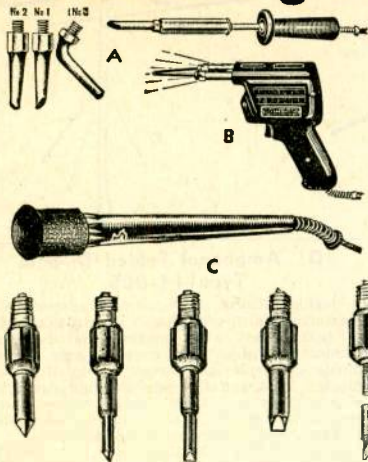
This Xcelite tester has a neon tube in the handle; intensity and evenness of the flash indicates if spark plug is functioning correctly. 1/8" x 2", handle 3/4".
Cat. No. 17-413 Type T-182 Net Each 38c

(Z) Xcelite Set-Screwdriver

Pocket-cup-handled screwdriver to fit set screws. Xcelite amber handle.

Cat. No.	Type	Blade	Net Ea.
17-414	3323RS	1/8" x 3"	21c
17-415	184SS	1/8" x 4"	21c

Soldering Irons & Accessories



(A) KWIKHEAT SOLDERING IRON

Thermostatically Controlled Model 300 Kwikheat soldering iron takes any of the interchangeable tips listed below. Thermostatically controlled to maintain the proper soldering temperature. Will not overheat. 225 watts; heats in 90 seconds. For 100-125 volts AC, 60 cycles, only. Furnished with No. 1 tip. Length 13 1/2" overall. UL listed. Cat. No. 17-250 With No. 1 tip. Net Price \$8.25

Interchangeable Tips for Model 300

- No. 0 Tip — Tapered point for light work. Copper alloy. Cat. No. 17-251
 - No. 1 Tip — Heavier tapered copper alloy tip for medium work. Cat. No. 17-252
 - No. 2 Tip — Medium size copper alloy chisel tip. Cat. No. 17-253
 - No. 3 Tip — 90° angle tip for corners; flat point of copper alloy. Cat. No. 17-254
 - No. 4 Tip — Heavy-work size copper alloy chisel tip. Cat. No. 17-255
 - No. 5 Tip — A 1 oz. capacity aluminum melting pot for tinning. Cat. No. 17-256
- All of above Tips. Net ea. 94c

(B) WELLER "Solderlite" SOLDERING GUNS

A time-saving tool for experimenters, maintenance men, hobbyists; a profit-making tool for the serviceman. Provides advantages no other soldering tool can approach. Gives you soldering heat in 5 seconds. Balanced weight, comfortable pistol grip and trigger make it easy to hold and non-tiring. Prefocused spotlight built in to show the way in dark corners. Tip can be bent to get into tight corners. Long-length tip for hard-to-reach jobs. Model 207, below, has dual-heat feature; second position of trigger switch provides 35% greater heat instantaneously for soldering to chassis, etc.

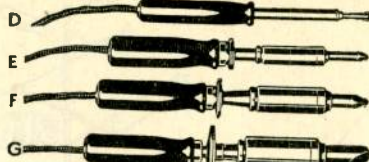
MODEL B-107, 100 watts.
Cat. No. 17-226 Net ea. \$12.69
Lots of one dozen, Net ea. \$11.42

MODEL D-297, Dual Heat.
Cat. No. 17-227 Net ea. \$14.65
Lots of one dozen, Net ea. \$13.18

Replacement tips for "Solderlite."
Cat. No. 17-228 Net ea. 25c

(C) Ungar Soldering Pencil

A powerful little pencil iron that will perform precision work on intricate, hard-to-reach soldering jobs. Weighs 3.6 oz.; heats in 90 sec. Overall length 7"; perfectly balanced. UL listed; 110 volts AC/DC. Handle cord set with 6-ft. plastic cord. Takes all tips.
Cat. No. 17-201 Net ea. 78c
No. 536 pyramid tip made from Tellurium. Cat. No. 17-202 Net ea. 78c
No. 537 pencil tip made from Elkaloy; 1/8" diam. Cat. No. 17-203 Net ea. 78c
No. 538 chisel tip made from Elkaloy; 1/8" diam. Cat. No. 17-204 Net ea. 78c
No. 539 heavy duty tip made from Tellurium. Cat. No. 17-205 Net ea. 78c
No. 540 marking tip for plastic or wood. Cat. No. 17-206 Net ea. 78c



AMERICAN BEAUTY IRONS

Preferred by those who measure the value of a tool by the service it renders, these dependable, long-lasting soldering irons are available in sizes to suit every use. Each iron has baffle plate at shank to keep handle cooler; and is furnished with separate, heat-insulating stand.

Type 3138 is designed primarily for production and maintenance in radio, telegraph, ignition, etc., work. Type 3158 for the same purposes but where greater heating capacity is needed. Type 3178 is for heavy work of all kinds.

Cat.	Type	Fig.	Watts	Tip	Net Price
17-101	3138	F	100	1/8"	\$5.36
17-102	3158	F	200	1/4"	6.41
17-103	3178	G	300	3/8"	8.59

(D) Type 3128 Light-Duty Iron

Has plug-type 1/4" tip with nichrome element but without compression winding which features high-wattage 3138-3178 series. Ideal for light, intermittent soldering; 60 watts. Cat. No. 17-104 Net ea. \$3.34

Replacement Tips

Genuine American Beauty soldering iron replacement tips for models listed above.

Tip No.	3728	3738	3758	3778
Fits No.	3128	3138	3158	3178
Cat. No.	17-105	17-106	17-107	17-108
Net Ea.	27c	34c	73c	\$1.27

Replacement Elements

American Beauty heating elements to fit irons listed above.

Iron No.	3128	3138	3158	3178
Cat. No.	17-109	17-110	17-111	17-112
Net Ea.	\$1.99	\$2.40	\$3.19	\$4.33

(H) American Beauty Temperature-regulating Stand

Stops over-heating when iron is idle yet holds iron at working temperature ready for instant use; adjustable thermostat lets you set heat just where you want it; iron plugs into stand and rests in metal cradle when not in use; handles irons up to 660 watts on circuits up to 240 volts; for use on AC only. Cat. No. 17-113 Type 475 Net Price \$3.88

Kester Solder

Rosin core solder — For radio and electrical work. Non-corrosive. 3/8" diam.
Cat. No. 17-276 3 oz. tin 17c Net
Cat. No. 17-277 1 lb. spool \$1.09 Net
Cat. No. 17-278 5 lb. spool \$5.00 Net
Thin rosin core solder — 3/8" diam.
Cat. No. 17-279 1 lb. spool \$1.09 Net
Cat. No. 17-280 5 lb. spool \$5.00 Net

Kester Soldering Paste

For soldering jobs where paste is required. Results in neat, non-corrosive soldering joints. 2 oz. can. Cat. No. 17-281 Net ea. 15c
10 for \$1.35



DRAKE SOLDERING IRONS

All Drake soldering irons listed here are for use on 110 volts AC/DC and are equipped with 6-ft. U.L. cord and rubber plug. All are UL listed.

General Purpose, Industrial and Radio Irons

TYPE 315 60-WATT — 3/8" tip iron, excellent for intermittent duty on light soldering jobs; 1 1/2" long. Cat. No. 17-001 Net Price \$1.12
TYPE 316 100-WATT — 3/8" tip iron for most general soldering; 1 3/4" long. Cat. No. 17-002 Net Price \$1.84

TYPE 225 80-WATT — 1/2" adjustable plug tip, general purpose light radio iron. Cat. No. 17-003 Net Price \$2.55
TYPE 600-10 100-WATT — 1/2" tip iron for medium-heavy production on fine work; cooling fins; length 12 3/4"; "Magic Cup" stand. Cat. No. 17-004 Net Price \$4.31
TYPE 800 200-WATT — 1/2" tip iron for general factory soldering, art glass, and medium tin work; 14 1/2" long. Cat. No. 17-005 Net Price \$5.88
TYPE 325 100-WATT — 1/2" adjustable plug tip iron; standard for general radio work. Cat. No. 17-007 Net Price \$2.94

TYPE 326 125-WATT — 1/2" adjustable plug tip iron. An extra-hot iron for service men. Cooling fins dissipate heat. 13" long. Cat. No. 17-008 Net Price \$3.53
TYPE 425 200-WATT — 1/2" adjustable plug tip iron for medium heavy-duty work. Cooling fins. Cat. No. 17-009 Net Price \$5.88
TYPE 400 60-WATT — A small industrial iron for continuous duty on close work; 9" long; 1/2" tip; "Magic Cup" stand; fin cooling. Cat. No. 17-010 Net Price \$3.27

Drake Model 350 Midget

A compact, high quality, continuous-duty soldering iron, designed for soldering voice coil leads, meter connections, crystal pickups, etc. Has 1/2" straight tip and comes with extra bent tip. 7" long; wt. 6 oz. Cat. No. 17-006 Net Price \$2.94

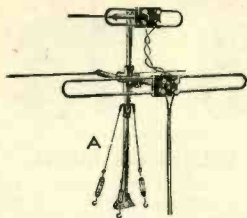
Drake Replacement Tips

Cat. No.	For Type No.	Net Ea.
17-011	315	53c
17-012	316	\$1.06
17-013	225	74c
17-014	600-10	74c
17-015	800	\$1.18
17-016	350 Straight Tip	15c
17-017	350 Bent Tip	15c
17-018	325	74c
17-019	326	74c
17-020	425	\$1.18
17-021	400	35c

Drake Soldering Pots

(I) MODEL 200 Heavy-duty, production-type, 300-watt solder pot. Well 2 1/2" diameter by 2" deep, holds 2 lbs. of solder. Complete with detachable cord, plug. 110 volts AC/DC. UL listed. Cat. No. 17-022 Net Price \$5.15
Replacement element for above. Cat. No. 17-023 Net ea. \$1.36
(J) MODEL 100 150-watt pot ideal for light tinning. Holds 1 lb. of solder in well 1 1/2" diam. by 1" deep. Complete with detachable cord and plug. UL listed. 110 volts AC/DC. Cat. No. 17-024 Net Price \$3.97
Replacement element for above. Cat. No. 17-025 Net ea. 94c

TELEVISION ANTENNAS

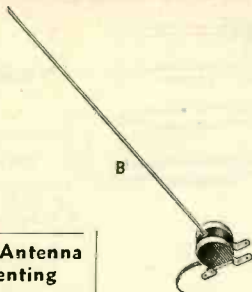


(A) Vertrod All-band TV Antenna
Folded Di-pole—Duo-orienting

For 13-channel TV reception plus FM on the same antenna; includes LF array and HF array. Individual arrays are separately rotatable for maximum signal strength in any direction. LF and HF arrays may be coupled if so desired. Fast, easy assembling. Built ruggedly to withstand weather and wind. May be mounted anywhere. Complete with hardware.
Cat. No. 29-381 Net Each \$9.71

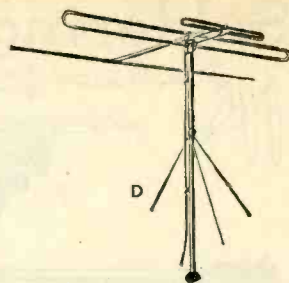
(B) Vertrod TV-FM-AM Rod Antenna All-Channel

An exclusive new design "Brings the indoor antenna outdoors." Eliminates the drawbacks of indoor antennas, no indoor poles or hanging wires, gives higher contrast, reduces signal loss. Antenna rod mounts on outside of any window of apartment or private house, projects no more than 45 inches for excellent TV-FM-AM reception. Makes simple, low cost, installations. Adjustable base allows 180-degree rotation in horizontal or vertical planes.
Cat. No. 29-385 Net Price \$3.57



(C) JFD Folded Di-pole Duo-orienting Antenna

Model TA115 covers the frequency range 44-216 MC, 13 channels and FM. Upper and lower sections of antenna array can be broadside-tuned independently for locations where upper channel and lower channel transmitters are not found in the same direction; also where ghost effects and minor traffic noise are troublesome. Upper and lower sections can be coupled or operated with separate transmission lines. Impedance value for each section is 300 ohms; gain is 4.2 db. for each section over tuned dipole. New design incorporates unbreakable polystyrene insulator; double cross-arms on each stacked array; heavy-duty U-bolt clamp attaches array to mast. Complete package contents include corrosion-proof 7/8" vertical mast; all-angle steel mounting bracket, insulators to anchor lead-in to mast.
Cat. No. 29-351 Net Price \$17.10

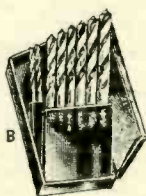


(D) Amphenol Folded Di-pole Type 114-005

A highly efficient, well-matched antenna for maximum quality reception. Covers all channels in both bands with unidirectional pattern, eliminating "ghost" reflections. Large folded dipole also serves as reflector for small folded dipole. Mast and elements are high strength, aluminum tubing. Insulators are rugged, loss, molded plastic. Has all mechanical details of Type 114-001 above and same accessories.
Cat. No. 29-052 Net Each \$16.17

Workshop Television Antennas

Custombuilt for each of the principal TV channels, these high-efficient, well-matched antennas provide extra "signal strength" in locations where broad-band antennas are inadequate. Reflection "ghosts" are eliminated. Three elements of 3/4-inch sealed duraluminum tubing. Tubular steel mast 7 1/2 ft. high, needs no guy wires. Universal mounting brackets. Antenna feed point is protected by a rugged plastic head.
Cat. No. 29-087 Net Each \$27.00



Century High Speed Drill Sets

Made of highest quality tungsten molybdenum tool steel to withstand abnormal heating and afford long-life keenness. Mechanics' length for rugged duty.

(B) SET M-3—Set consists of 13 drills, from 1/8" to 1" in Huot Index drill case. Opening the case brings drills into position for rapid selection. Plainly Indexed. Size: 4 1/2" x 2" x 1/2".
Cat. No. 17-545 Net Price \$4.10

SET M-11—Consists of 11 Century drills; from 1/8" to 1" sizes in 1/8" graduations. Additional space in Huot Index case for ten extra drills.
Cat. No. 17-550 Net Price \$6.35

SET M-15—15 Century drills, sizes 1/8" to 1" in 1/8" graduations. Additional space in Huot Index case for 14 extra drills.

(A) SET M-7—7 Century drills, sizes from 1/8" to 1" in 1/8" graduations. Red Bakelite hexagonal stand with indexed sizes.
Cat. No. 17-551 Net Price \$2.25

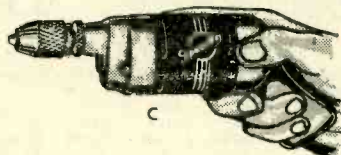
Century High Speed Drills

Mechanics' length Century drills as described above are available individually in a complete range of sizes as listed below.

Cat. No.	Size	Ea.	Cat. No.	Size	Ea.
17-640	1/8"	18c	17-655	1 1/8"	\$0.48
17-641	1/4"	18c	17-656	1 1/4"	.53
17-642	3/8"	18c	17-657	1 3/8"	.58
17-643	1/2"	19c	17-658	1 1/2"	.63
17-644	5/8"	20c	17-659	1 5/8"	.70
17-645	3/4"	21c	17-660	1 3/4"	.74
17-646	7/8"	24c	17-661	1 7/8"	.80
17-647	1"	25c	17-662	1 7/8"	.88
17-648	1 1/8"	26c	17-663	1 7/8"	.94
17-649	1 1/4"	28c	17-664	1 7/8"	1.00
17-650	1 1/2"	31c	17-665	1 7/8"	1.09
17-651	1 3/4"	34c	17-666	1 7/8"	1.15
17-652	1 7/8"	36c	17-667	1 7/8"	1.22
17-653	1 7/8"	42c	17-668	1 7/8"	1.29
17-654	1 7/8"	45c			

Electric Drills - Accessories

Square Hole Punch



(C) Speedway 1/4" Drill

Specially wound, high-torque AC/DC Speedway motor is back-geared 20 to 1 through double-reduction steel gears and operates at 1000 R.P.M., low enough to prevent burning low-priced drill bits. Capacity 1/2" in steel. Comes complete with automatic snap-release chuck, thumb switch, rubber cord and plug.
Cat. No. 17-596 Net Price \$11.80

(D) Eagle Hand Drill Sets

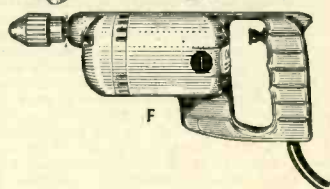
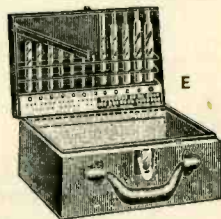
SET ES-3—Contains 3 carbon-steel drill bits: 1/8", 1/4", 3/8" mounted in handy container.
Cat. No. 17-576 Net Price 38c

SET ES-4—Contains 4 carbon-steel drill bits: 1/8", 1/4", 3/8", 1/2" in handy container.
Cat. No. 17-577 Net Price 45c

SET ES-5—Contains 5 carbon-steel drill bits: 1/8", 1/4", 3/8", 1/2", 5/8" mounted in handy container.
Cat. No. 17-578 Net Price 56c

(E) Drill Set M-12 In 1/4" Electric Drill Box

Set M-12 consists of two sets of twist drills held in an all-metal box designed to take any popular-priced 1/4" electric drill. Drills, in indexed rack which tips forward for easy access when cover is opened, consist of one set high-speed mechanics-length up to 1/4" for drilling steel and plastic, and a set of 5 wood bits for drilling up to 1/4" diam. holes with 1/4" electric drill. Century wood bits are the first with up to 3/8" diam. hole drill to fit 1/4" electric drills.
Cat. No. 17-552 Net Price \$7.43



(F) Gilbert Electric 1/4" Drill

MODEL 146—The improved Gilbert drill, ideal for hair-line precision, plenty of power for heavy work. Housing is zinc-base die-casting with a grip that is built to fit the hand, balanced to cut fatigue. Finger-tip control of power switch. Has Jacobs hex 1/4" key chuck; steel spindle runs in bronze sleeve, ball bearing thrust. At 1100 R.P.M. (no-load speed is 1620) torque is .55 ft. lbs.; stall at 2.4 ft. lbs.; horsepower at 1100 R.P.M. is 0.115. Total weight 4 3/4 pounds. With 10-foot 3-conductor cord with grounding wire. For 110 volts, 60 cycles.
Cat. No. 17-591 Net Price \$16.95

(G) Square Hole Punch

Operating on the screw principle—for punching power—the Pioneer square-hole punch eliminates tedious hand filing and sawing of holes to mount angular parts on chassis and sheet metal. Incorporates features of self-aligning punch and die shearing action. Made of high grade tool steel, precision machined, heat treated, and ground to close tolerances.
Cat. No. 17-625 1/4" Square Punch Net \$2.95
Cat. No. 17-626 3/8" Square Punch Net \$3.50

(A) All-channel "Vision" Tele-booster

A new highly efficient all-channel booster for use with any television receiver, simple to install by external connection to receiver, easy to operate. Actually makes the difference between "flat" and very bright pictures on weak stations. Improves immunity to off-channel interference; can be tuned to boost weak station or turned off to provide normal reception. Eliminates need for outdoor antennas in many locations. Two positions of switch cover all 13 channels. Uses 2-6AK5's in stable and efficient wide-band amplifier circuit, with self-contained power supply using selenium rectifiers. In attractive hardwood-finished case, 6 x 4 1/2 x 5". **\$22.50**

DeLuxe Model "Vision" Tele-booster

Three stages of high-gain, broad-band amplifiers, adjustable gain, and smooth continuous tuning make Model TVZ unsurpassed in the field. An elegant cabinet, discreetly lighted channel indicator and handsome styling blend with finest receiver. Has all of the performance advantages of standard Tele-Booster above plus added amplifier stage, continuous-channel tuning, vernier dial, deluxe styling. **\$35.00**

Cat. No. 36-252 Net Price

TELEVISION Tele-Boosters - Preamps Replacement Components



A



B

(B) Millen R-9'er Antenna Matching Pre-amplifier

You can gain as much as 30 to 60 db. for your television receiver with this electronic impedance matching device. Amount of gain depends on make of receiver and antenna and extent of existing mismatch. Once tuned, the unit automatically matches receiving antenna to receiver, an important factor usually overlooked. Uses 1-6AK5 tube. Provided with cable plug for power connection to receiver, coax connectors and plugs for antenna and receiver connection. Also designed for 6, 10, 20 meter reception.

Cat. No. 36-170 Type 92101 less tube and coll. Net Price **\$21.60**

COILS

Cat. No.	Type	Band	TV Channel	Net
36-171	46906	48-55 mc.	-	\$3.15
36-172	46910	27-32 mc.	-	3.15
36-173	46920	13-15 mc.	-	3.15
36-174	46992	54-60 mc.	2	3.90
36-175	46993	60-66 mc.	3	3.90
35-176	46994	68-72 mc.	4	3.90
36-177	46995	76-82 mc.	5	3.90
36-178	46996	82-88 mc.	6	3.90

STANCOR TELEVISION COMPONENTS

The most popular units used in construction of television receivers and associated equipment. They have been designed to meet the increased demand from designers, engineers and amateur experimenters for replacement and original construction needs.

Vertical Output Transformers

TYPE A-8115 is designed to couple the vertical output tube to the deflection yoke in typical vertical deflection circuits. Interchangeable with RCA Type 204T2; may be used in conjunction with RCA 201D1 or 201D2 deflection yokes and direct viewing or projection kinescopes, such as RCA types 10BP4, 7DP4 and 5TP4. Vertical bracket type mounting with leads. Varnish impregnation. 1 1/2 x 2" mtg. ctrs. Size, 3 3/8 x 2 1/4" deep. **\$3.53**

Vertical Blocking Oscillator Transformers

TYPE A-8121, for use in blocking oscillator circuits for generation of 60 c.p.s. as required. Interchangeable with RCA Type 208T2. Potted in drawn sheet metal case with leads out of bottom. 1 1/2 x 2" mtg. ctrs. Size, 1 1/2 x 2 1/8" deep. **\$1.88**

TYPE A-8111 is similar to A-8121 except for mounting in horizontal Channel frame. May be used to replace RCA Type 208T2. Vacuum wax impregnation. 2" mtg. ctrs. Size, 1 1/2 x 2 1/8" deep. **\$1.47**

Horizontal Blocking Oscillator Transformers

TYPE A-8120 generates 15,750 c.p.s. pulse required in typical blocking oscillator circuits. Replaces RCA Type 208T1. Potted in drawn sheet metal case with leads out of bottom. 1 1/2 x 2" mtg. ctrs. Size, 1 1/2 x 2 1/8 x 1 1/2" deep. **\$2.29**

TYPE A-8110 is similar to A-8120 except for horizontal channel frame type mounting. Vacuum wax impregnation. Replaces RCA Type 208T3, 208T1. 2" mtg. ctrs. Size, 1 1/2 x 2 1/8 x 1 1/2" deep. **\$1.62**

(FC) Focus Coil

For magnetically focused kinescopes with deflection angles up to 50°. Large center hole of coil for ample clearance between core and kinescope neck, allowing for tipping and displacing axis when necessary. Rheostat adjustment of operating current is recommended for best performance. Replaces RCA Type 202D1. **\$4.41**

(DY) Deflection Yoke DY-1

Exact replacement for RCA Type 201D1. For use with direct view tubes requiring 50° magnetic deflection. **\$4.41**

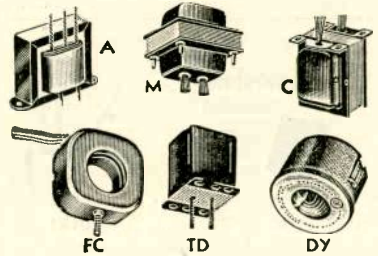


Plate and Filament Transformers

Two sizes of plate and filament transformers are available for use with Type 2X2 rectifier tubes in a conventional circuit to obtain high voltage supply. Both units contain filament windings for the rectifier tube. Type P-8151 includes an extra 2.5 volt filament winding. Vacuum impregnated.

(TD) TYPE P-8150
Ratings: 1550 AC volts, 1.5 DC ma.; rectifier fl. 2.5 v., 1.75 amp. Size 3 3/8 x 3" x 2 1/2" deep. Type TD mounting. **\$5.73**

(C) TYPE P-8151
Ratings: 2400 AC volts, 5.0 DC ma.; rectifier fl. 2.5 v., 2 amp.; No. 2 filament 2.5 v., 2 amp. Size, 4 1/2 x 3 3/8 x 3 1/2". Type C mounting. **\$8.70**

(M) TYPE P-8152
A combination plate and filament transformer designed especially for television use. It is an exact replacement for RCA Type 201T6 used in RCA model 630TS receiver. Size, 3 1/2 x 4 1/2 x 6 1/8" high. 3 3/8 x 4 1/8" mtg. ctrs. Type M mounting. Plate supply is high voltage winding designed to deliver 405 VDC at 295 ma. into an 80 mfd. condenser input filter following 2 type 5U4G tubes in a full wave rectifier circuit. Ratings: 350-0-350 AC volts, 295 ma.; rectifier fl. 5.0 v., 6.0 amps.; auxiliary fl. 5.0 v., 2.0 amp., 12.6 v. CT. 5.0 amp. **\$15.43**

(M) TYPE P-8153

A combination plate and filament transformer for replacement in RCA model 721TS receiver. 3 3/8 x 4 1/8" mtg. ctrs. Size, 3 1/2 x 4 1/2 x 5" high. Type M mounting. Ratings: plate supply 365-0-365 VAC, 250 DC ma.; rect. fl. 5.0 v., 3.0 amp.; auxiliary fl. 6.3 v., 6.0 amp., 6.3 v., 0.8 amp., 5.0 v. — 2.0 amp. High voltage winding designed to deliver 350 VDC at 250 ma. into 80 mfd. condenser input filter following a Type 5U4G tube in a full wave rectifier circuit. **\$12.94**

(M) TYPE P-8154

Designed to work together with Type 8155, below, as a more economical power supply than is possible with one unit; serves as Admiral model 80B11 replacement. High voltage winding delivers 400 v. DC at 205 ma. into a 40 mfd. condenser input filter following a type 5U4G tube in a full wave rectifier circuit. Ratings: plate supply 375-0-375 VAC, 205 ma. DC.; rect. fl. 5.0 v., 3 amp.; auxiliary fl. 5.0 v. — 2 amp.; 6.3 v. — 5.6 amp. 3 3/8 x 3" mtg. ctrs. Size, 3 3/8 x 4 1/2 x 4 1/2" high. Type M mounting. **\$8.94**

(M) TYPE P-8155

Designed to work together with Type 8154 above. Serves as Admiral model 80B12 replacement. High voltage winding delivers 210 volts DC at 90 ma. into a 40 mfd. condenser input filter following a 5Y3-G tube in a full wave rectifier circuit. Ratings: plate supply 225-0-225 VAC, 90 ma. DC; rect. fl. 5.0 v., 2 amp.; auxiliary fl. 6.3 v. — 5.15 amp., 2 1/2 x 2 1/2" mtg. ctrs. Size 2 1/2 x 3 1/2 x 3 1/2" high. Type M mounting. **\$5.23**

(A) Filter Choke

TYPE C-2325 has rated inductance of 2 hy. min.; 200 ma. DC test voltage of 1500 volts; DC resistance 60 ohms. Core is 1 1/2" x 1 1/2". 3 1/2" mtg. ctrs. Size 2 1/2 x 3 1/2 x 2 1/2". **\$1.70**

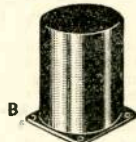
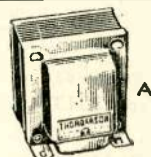
(A) Thordarson Television Power Transformers

TYPE T22R40 — Ideal for use in high-voltage, low-current power supplies. Prl. rated 117 volts 60 cycles. Sec. insulated for 7500 volts RMS test. With instructions. **\$9.00**

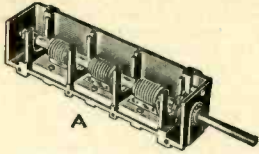
(B) UTC Television Transformers

Compound-sealed in heavy steel cases affording a high degree of shielding.

Cat. No.	Type	Application	Case	Net
13-248	R-91	Horizontal oscillator (15750 cycles)	RC-50	\$4.12
13-249	R-92	Vertical oscillator (60 cycles)	RC-50	4.12
13-250	R-93	Vertical output, tapped for different tubes	RC-100	8.23
13-251	R-94	Horizontal output (special core), tapped for adjustment	RC-100	11.76
13-252	R-95	2800 VAC (4000 DC) 2.5V-1.8A, 6.3V-.6A tapped 2.5V-2.1A; 7000 V. test	RC-125	8.82



TELEVISION COMPONENTS

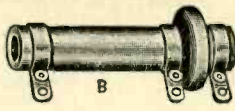


MALLORY
(A) 8301 Inductuner

A variable inductance tuner for all bands within the 44-216 mc range, including 6, 2 and 1 1/2 meters. Especially suited for television and FM and is exact replacement for the DuMont television set. Tunes all channels in 10 turns of the shaft.
Cat. No. 22-301 Net Price . . . \$29.40

(B) Video Coupler

An inter-stage coupling device consisting of peaking inductances and a load resistance providing a flat response to 4 mc per second. Will work into a terminating capacity of 22.5 mmfd. and has a maximum dissipation of 2 watts. Size 3/4" x 1 1/2".
Cat. No. 22-302 Net Price . . . \$1.03



AMPHENOL Magnal Socket

For 11 prong cathode-ray and television tubes; 1 1/8" o.d. circle; mounts in 1 1/2" hole. Steatite.
Cat. No. 02-041 Net Each . . . 71c

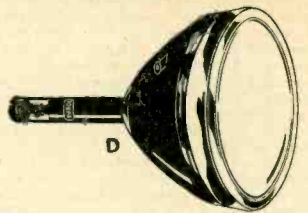


(C) Diheptal Tube Sockets

For TV, oscilloscope, and cathode ray tubes. Maximum of 14 equally spaced pins on circle diameter of 1.750".
Cat. No. 02-082 Type 59-415 Small Net 98c
Cat. No. 02-083 Type 59-417 Medium Net 98c

IRC "W" Television Controls

For vertical and horizontal control of television pictures. 2-watt wire wound with lineal tapers. Spiral spring connectors. Control tapped.
Cat. No. 09-004 Type W10X 510 ohms . . . \$1.09
Net Each . . . \$1.09
Cat. No. 09-005 Type W20X10 20 ohms . . . \$1.09
Net Each . . . \$1.09



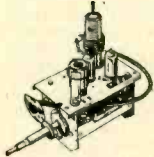
(D) RCA Television Tubes

High grade, long life, RCA Kinescope tubes for exceptional brilliance. White screens

Cat. No.	Type	Screen	Net.
38-101	5TP4	5"	\$59.40
38-102	7DP4	7"	23.80
38-103	*7JP4	7"	22.08
38-104	9AP4	9"	57.60
38-105	10BP4	10"	34.00
38-106	12AP4	12"	66.00

* Replaces 7GP4.

See page 12 for a listing of RCA and DuMont Cathode Ray Tubes.



RCA RF Tuner
Type 201E1



RCA
Television Picture Magnifier.
Type 203P2



201R1



201D1



201X1

RCA TELEVISION COMPONENTS

The RCA television components listed here are the basic parts of the RCA Model 630TS table model receiver using the 10BP4 10" tube. All the additional parts needed by the amateur, experimenter, or serviceman to build this famous model are standard radio components listed elsewhere in this catalog.

Other RCA television parts and accessories are available from the Radio Shack. Write for information and prices.

Escutcheon

Channel marker escutcheon.
Cat. No. 00-501 Net Each . . . \$1.00

Knobs

Cat. No.	Type	Net Ea.
00-502	Station selector	32c
00-503	Outside knob	21c
00-504	Inside knob	18c
00-505	Fine tuning	24c
00-506	Dummy knob	18c

Type 201E1 RF Tuner

For picture and sound, covering all 12 TV channels; includes 1st I.F. Exact duplicate of unit used in RCA Model 630 television receiver. Complete with 3—6J6's; assembly is furnished mounted and aligned.
Cat. No. 36-201 Net Price . . . \$44.10

Picture Magnifier Type 203P2

May be used with either 7" or 10" picture tube to give a magnified image equal to that of about a 15" tube. Universal bracket fits under table model receiver. Includes focusing adjustment. High index of light transmission by means of plastic cased liquid lens. Convex surface enables undistorted viewing from any angle.
Cat. No. 16-302 Net Price . . . \$24.63

Type 201T6 Power Transformer

Power transformer for 630TS 30-tube television receiver.
Cat. No. 14-310 Net Each . . . \$17.64

RCA TV Service Data Book

A vast mine of data to aid the service man as well as a guide to building the Model 630TS RCA 10" tube television receiver. Includes schematic diagrams, illustrations, alignment methods, parts lists, wave forms for 630TS and 648 PTK projection model receivers. More than 100 pages.
Cat. No. 42-256 Net Price . . . \$1.50

Type 201R1 Variable Reactor

Screw driver - adjusted variable reactor for use with RCA 211T1 horizontal output transformer where kinescope anode potential does not exceed 9 KV.
Cat. No. 22-102 Net Price . . . 47c

Type 201R3 Horizontal Linearity Control

For use in deflection circuits using RCA 211T1 horizontal output transformer and RCA 201D1 deflection yoke. Screw driver adjustment.
Cat. No. 22-103 Net Price . . . 50c

Type 204L1 Filament Choke

Eliminates undesirable RF currents from filament circuit. 16 turn coil with baked on varnish.
Cat. No. 22-104 Net Price . . . 18c

Type 204X1 IF and Video Coil Kit

All coils necessary to build picture, sound and video circuits. Kit includes:
Cat. No. in . . .

No.	Type Kit	Description	Net
22-105	201K1 2	Sound IF transformer	\$1.35
22-106	202K1 1	Converter transformer	1.59
22-107	202K2 1	1st PIX IF	1.59
22-108	202K3 1	2nd PIX IF	1.12
22-109	202K4 1	Cathode trap	1.35
22-110	203K1 1	Discriminator transformer	1.65
22-111	202L1 2	3rd and 4th PIX IF	.43
22-112	203L1 1	Video series peaking coil	.35
22-113	203L2 1	Video shunt peaking coil	.35
22-114	203L3 2	Video series peaking coil	.35
22-115	203L4 2	Video shunt peaking coil	.35
Cat. No. 22-101	Kit 204X1 Complete		\$12.94

Type 208T8 Horizontal Sync-Discriminator Transformer

Designed to couple horizontal sweep oscillator to a horizontal sync discriminator. Two windings in a metal can with screw driver adjustment on inductance of the primary and knob adjustment on the bifilar secondary. Provides automatic horizontal sweep frequency control.
Cat. No. 22-117 Net Price . . . \$1.62

Type 201D1 Deflection Yoke

For use with direct view tubes requiring 50° magnetic deflection. Provides required retrace time when used with typical deflection circuits using RCA Horizontal Output Transformers 211T1, 204T3 or 204T1 and 204T2 Vertical Output Transformers.
Cat. No. 22-118 Net Price . . . \$5.29

Type 202D1 Deflection Yoke

For magnetically focused tubes having deflection angles up to 50°. Large clearance hole in coil center for tipping and displacing axis when required.
Cat. No. 22-120 Net Price . . . \$5.35

Type 201X1 Yoke Mounting Hood

Holds type 201D1 deflection yoke on tubes, with provisions for radial and axial adjustment of the yoke to orient picture. Rubber bumper for tube protection.
Cat. No. 22-121 Net Price . . . 94c

Type 203D1 Ion Trap Magnet

Used where tubes with ion trap guns are used. Prevents ions from bombarding the sensitive tube screen.
Cat. No. 14-301 Net Price . . . \$3.82

Type 211T1 Horizontal Output Transformer

For use with 201D1 deflection yoke and with direct viewing tubes requiring 50° magnetic deflection. Auto-transformer primary supplies voltage for pulse rectifier to supply picture tube anode potential. Filament winding for pulse rectifier included. Secondary tapped for connecting width control 201R1. Powdered iron core.
Cat. No. 14-304 Net Price . . . \$6.76

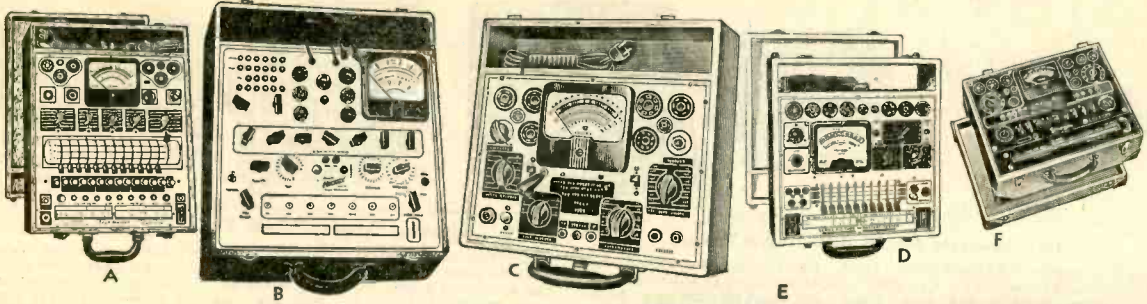
Type 204T2 Vertical Output Transformer

For use in vertical deflection circuits. Couples the vertical output tube to the deflection yoke. Used in circuits with 201D1 or 201D2 deflection yokes and direct view of projection kinescopes requiring 50° magnetic deflection. Rigid mounting brackets and special impregnation.
Cat. No. 14-306 Net Price . . . \$4.12

Type 208T2 Vertical Blocking Oscillator Transformer

Generates 60 cps pulses required to drive grids of vertical discharge tubes. Potted can for moisture resistance.
Cat. No. 14-307 Net Price . . . \$2.12

TUBE AND SET TESTERS



(A) Precision Electronic 10-00 Master Series 10-12 Tube and Battery Testers

A free-point tester featuring the electronic circuit. Test all type tubes; 17 filament voltages to 117 volts. Master-lever element selector locates tube elements. Facilities for battery, ballast, noise, pilot bulb, and condenser testing. Neon continuity check. $4\frac{1}{2}$ " meter with 2% accuracy. Double-window roller tube chart. For 110-120 volts 50-60 cycles. Hardwood case with removable cover.

Cat. No. 32-067 Net Price **\$96.10**
 10-12C Counter model chrome trimmed black cabinet. **\$99.40**
 Cat. No. 32-068 Net Price
 10-54P Portable AC/DC tube/battery tester. 20,000 ohms per volt DC; 1000 ohms per volt AC; 35 ranges. In hardwood case with test leads. 110-120 volts 50-60 cycle AC. **\$134.40**
 Cat. No. 32-069 Net Price
 10-54C Counter model of above. **\$137.70**
 Cat. No. 32-070 Net Price

Hickok Model 534-A

(B) Dynamic Mutual Conductance Tube and Set Tester

Tests all receiving tubes under actual operating conditions. Voltage ranges 0-20/200/500/1000/5000 volts AC and DC; 20,000 ohms per volt sensitivity DC, 1000 ohms per volt AC. Resistance from 0.1 ohms to 100 megohms in 3 ranges; no batteries necessary; capacitance checks from .0001 to 100 mfd. For 110 volts, 60 cycle operation. Portable with study carrying case and detachable cover.

Cat. No. 32-166 Net Price **\$154.80**
 Model 533P — Portable tube tester only. Includes all the tube testing features of Model 534A. **\$128.00**
 Cat. No. 32-167 Net Price

(C) Radio City Model 802-N Tube & Set Tester

A combination multimeter and tube tester in a compact, portable unit. A real factor in quick job output. Employs Germanium crystal rectifier. Battery operated 100,000-ohm range permits resistance tests without AC supply. Tests paper, mica, electrolytic capacitors for leakage; checks individual sections of multi-purpose tube; checks noisy, swinging, or high resistance internal tube connections. $4\frac{1}{2}$ " meter with Alnico high-torque movement. Ranges: DC volts 0-10/50/500/1000 at 1000 ohms/volt; AC volts, 0-10/50/500/1000 volts; DC ma., 0-1/10/100/1000; DC amps, 0-10; ohms, 0-500/5000, 0-1/1-10 megohms; DB, -8 to +55 in four ranges; output 0-10/50/500/1000 volts. 100-130 volts, 50/60 cycle operation. Complete with test leads, self-contained battery for ohmmeter. Size: 5" x 13" x 9". Rollindex 103 fits into test lead compartment.

Cat. No. 32-453 less Rollindex Net Price **\$58.31**

(A) Precision 10-20 Tube and Battery Tester

A 34-range, push-button-operated unit. 1000 ohms per volt AC/DC circuit tester. Tests all modern tubes; 17 filament voltages. Ranges: AC/DC and output volts 0-6-12-60-300-1200-3000; DC current 0-600 microamps, 0-60-0-300-1200 ma. and 0-12 amps. Resistance 0-1000-100,000 ohms; 0-1-10 megohms; db. ranges from minus 20 to plus 64. 2% $4\frac{1}{2}$ " meter. Hardwood case with tool section. For 105-125 volts 50-60 cycle operation.

Cat. No. 32-060 Net Price **\$119.80**
 10-20-C Counter model. As above. **\$123.10**
 Cat. No. 32-061 Net Price
 10-15 Counter type tester with 9" meter. For 110-120 volts 50-60 cycle AC. **\$132.65**
 Cat. No. 32-062 Net Price
 10-22 Tube and battery tester plus multi-range AC/DC set tester. Counter type. For 110-120 volts 50-60 cycle AC. **\$155.15**
 Cat. No. 32-063 Net Price

(D) Precision 612-P Tube Tester

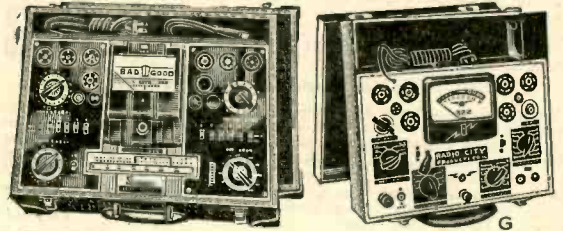
Tests all modern tubes. Filament voltages from $\frac{1}{2}$ to 117 volts. Free point element and short check selection. $4\frac{1}{2}$ " meter. Noise and condenser test pin jacks. "Under load" test for batteries. Built-in roll chart. Hardwood case with removable cover.

Cat. No. 32-064 Net Price **\$69.50**
 614 Deluxe model with 7" dial. For counter use. Same characteristics as above. **\$89.30**
 Cat. No. 32-065 Net Price

Precision 620P Tube and Set Tester

Circuit testing functions isolated from tube test circuit and power line. $4\frac{1}{2}$ " 400-microamp. meter. Rotary, selective-function and range switching. 28 ranges to 3000 volts, 12 amperes, plus 64 db., 10 megohms. 1000 ohms per volt AC/DC. In hardwood portable case with ohmmeter batteries, test leads and instructions.

Cat. No. 32-066 Net Price **\$94.10**



(E) Simpson Model 555 Tube Tester

Will test all receiving tubes, including the latest nine pin miniatures and the subminiatures used in hearing aids, etc. Extra sockets are provided and the flexible individual element switching arrangement takes care of future tube developments. Tests can also be made on gaseous rectifiers, pilot lamps, and continuity of ballast tubes. Illuminated meter for quick readings. Beautiful modern styling in the shining silver and black of highly polished, enduring, anodized aluminum. With "No-Backlash" Roll Chart. Size $16\frac{1}{2}$ " x $12\frac{1}{2}$ " x 6".

Cat. No. 32-408 Net Price **\$69.85**

Simpson Model 335 Plate Conductance Tube Tester

Dial indicates percentage of rated plate conductance, which is proportional to percentage of rated mutual conductance with constant amplification factor. Minimum settings; filament voltages constant; short test for all electrodes; low-voltage diode test; automatic reset switch; all standard tube sockets with provisions for additions. Portable case $15\frac{1}{2}$ " x $9\frac{1}{2}$ " x $6\frac{1}{2}$ ".

Cat. No. 32-401 Net Price **\$98.50**

Simpson Model 445 Plate Conductance Tube & Set Tester

Handles just about every radio testing requirement. Tube tester is of plate conductance type; see Model 335 above. High sensitivity volt-ohm-milliammeter; negligible current consumption assures accurate full-scale readings from 2.5 to 5,000 volts; current readings from 1 microamp to 500 milliamps; resistance from $\frac{1}{2}$ ohm to 20 megohms. Ranges: volts 0-2.5/10/50/250/1000/5000; DC millamps, 0-10/100/500; DC microamps, 0-100; resistance 0-200/200,000 ohms/20 megohms; db. -10 to +52 in 5 ranges. DC sensitivity 20,000 ohms/volt; AC sensitivity 1000 ohms/volt. $4\frac{1}{2}$ " dial. Size $15\frac{1}{2}$ " x $9\frac{1}{2}$ " x $6\frac{1}{2}$ ".

Cat. No. 32-402 Net Price **\$128.50**

(F) Simpson Model 330RC Mutual Conductance Tube Tester

Tests tube in percentage of rated dynamic mutual conductance; voltage applied automatically over entire tube operating range approximating actual conditions in radio set. Colored zones on dial coincide with micromho ratings, indicating good, fair, doubtful, bad. Tests all types, including acorn tubes. Neon glow tube for shorts. Only a few settings needed for the most complicated tubes. $4\frac{1}{2}$ " meter. With "No Backlash" Roll Chart see into panel. Case of sturdy plywood construction, fabricoid trimmed. Removable cover. Size: $15\frac{1}{2}$ " x $9\frac{1}{2}$ " x $6\frac{1}{2}$ ".

Cat. No. 32-403 Net Price **\$137.50**

(G) Radio City Dynoptimum Tube Tester Model 322

A tube tester that is easy to operate. Only five controls. Permits accurate checking of widest variety of old or new tubes. Provides means of checking sections of multi-purpose tubes, miniatures, and sub-miniatures. Extremely low test-circuit voltage drop. Jack is provided for head-phone noise test to check noisy, swinging, or high-resistance internal tube connections. Neon lamp for rapid short and leakage tests between elements. Operates on 100-130 volts 50/60 cycles. Sizes: $5\frac{1}{2}$ " x $12\frac{1}{2}$ " x 7".

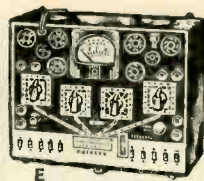
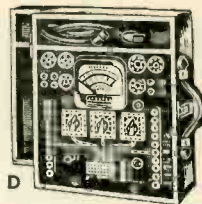
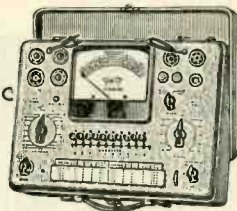
Cat. No. 32-450 Net Price **\$37.19**
 Portable Model 322P — Same as above, in steel carrying case with detachable cover. $5\frac{1}{2}$ " x $12\frac{1}{2}$ " x 9". **\$41.11**
 Cat. No. 32-451 Net Price

Rollindex Model 103

Roll chart for accurate data at flick of a dial. For use with Models 322, 322P, 802N.

Cat. No. 32-452 Net Price **\$7.35**

Tube & Set Testers Signal Generators Simpson Roto-Ranger



(A) Sylvania Model 140 Tube Tester

Tests all popular and most special tubes. Extra sockets and switch contacts for additional types. Dynamic plate conductance type which simulates actual operation of the tube. Triple roller chart for tube data. Portable case. For 105-120 volt 50-60 cycles.
 Cat. No. 32-509 Net Price **\$79.50**
 Model 139 — Counter type. Same as above.
 Cat. No. 32-501 Net Price **\$79.50**

(B) Triplett Model 3480 Tube Tester

Combination tube tester and volt-ohm-milliammeter has tube tester circuits for emission, short and open tests, "good and bad" scale; tests all receiving tubes, gaseous rectifiers, pilot lamps, resistors and ballast tubes. Set tester ranges: DC/AC volts 0-3-12-60-300-1200; DC 0-1.2-12-120 ma., 0-12 amps.; resistance 0-1000-10,000 ohms and 0-1-50 megs. 6" meter. In metal portable-type case; baked enamel finish. Built-in roll tube chart. For 110-120 volts, 50-60 cycles.
 Cat. No. 32-205 Net Price **\$96.77**

Triplett Model 3212 Tube Tester

Counter model with speed roll tube chart — tests all receiving tubes, pilot lamps, resistors and gives short and continuity test of motors, leads and resistance elements. Line, hot-cathode short, and quality tests on one switch. Large scale indicates "Good-Bad." 19-position filament selector covers from 0.75 to 110 volts. Spare switch and socket for future modification. Heavy steel case. For 110-120 volts 60 cycles.
 Cat. No. 32-206 Net Price **\$62.23**

(C) Triplett Model 3413 Tube Tester

Multi-purpose test circuit provides for emission test, short and open element test, and transconductance comparison test for matching tubes. Tests all receiving tubes, gaseous rectifiers, ballasts and pilot lamps with neon short indicator. "Good-Bad" indicator. Built-in roll chart. For 110 volts 60 cycle.
 Cat. No. 32-207 Net Price **\$68.10**

(D) Supreme Model 504B Tube and Set Tester

A convenient combination of multimeter, battery tester, condenser tester and tube tester. Will test any type of tube. Multimeter operated by push-button selector system for speedy operation. Equipped with Supreme 4" meter with "good and bad." Scale also reads DC volts 0 to 2500 at 1000 ohms per volt; AC volts 0 to 1000; current 0-500 DC microamps., 0 to 250 DC ma. and 0-10 DC amps.; resistance 0 to 20,000 ohms and 0 to 20 megs.; output volts 0 to 1000. Roller chart built in for tube settings. For 110-125 volts 50-60 cycles.
 Cat. No. 32-257 Net Price **\$100.45**

(E) Supreme Model 589A Tube and Battery Tester

The model 589A is designed as an economical, simple, and efficient tube and battery tester. Supreme's floating filament circuit is incorporated in the instrument, with filament voltages from 1/2 volt to full line voltage. Built-in roll tube setting chart for easy operation. Neon lamp provided for checking leakages between tube elements and for open circuits. Noisy, loose, and bad connections may be checked by use of headphones for which a jack is provided. The battery tester checks A and B batteries under their normal load on easy-reading "replace-good" scale. Power supply 100 to 133 volts 50-60 cycles.
 Cat. No. 32-255 Net Price **\$53.75**

Supreme Model 620 Dynamic Tube Tester

This new model 620 tester uses Supreme's double-floating filament-return selector system which eliminates the use of more than one socket of each type. Equipped with rugged 4" Supreme meter. Tests all receiver tubes including the latest sub-miniature types and selects the tubes "good and bad" on standardized percentage rating. Filament voltages available from 1 volt to full line voltage with a circuit insert provided for checking noise, leakage, loose and bad connections. Settings for tubes provided on chart with easy-rolling mechanism; simply turn chart to proper tube listing and set controls as chart indicates.
 Cat. No. 32-256 Net Price **\$108.00**

SIMPSON -- FERRET

Signal Generators



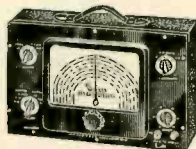
(G) Simpson Model 415 AM-FM Signal Generator

Continuous coverage, with smooth, vernier-tuning direct reading dial, from 70 KC to 130 MC in 8 ranges at frequency accuracy of 1%. Stable thru wide variations in line voltage. Continuously variable vernier controls RF output, 0-4 volts, through shielded ladder attenuator. 0 to 100% modulation from internal 400-cycle sine wave source or from external source. Up to 20 volts of 400-cycle sine wave for external use. High-fidelity modulation to 100% from below 60 cycles to over 10 KC. No undesirable frequency modulation present. Coils and tuning condenser individually shielded and additional shield covers both assemblies. Case is steel, copper plated for shielding. Size: 5 1/4" x 11 1/2" x 15 1/4".
 Cat. No. 32-410 Net Price **\$112.70**
 Model 415A — Model 415 with 1 MC sweep for FM alignment. **\$142.10**
 Cat. No. 32-411 Net Price



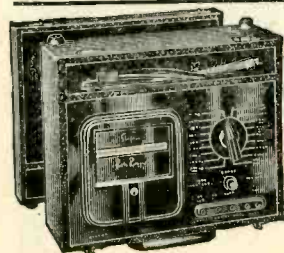
(F) Ferret Model 701 Signal Generator

For servicing any type of AM, FM or television equipment. Range 170 kc. to 128 mc. Completely shielded for minimum radiation; crystal calibrated, low-loss, permeability-tuned RF coils; internal 400-cycle sine wave modulation 0 to 100%, calibrated directly on dial; 20 to 10,000-cycle external modulation for frequency response measurements; turret coil construction with shortest possible leads for minimum leakage and maximum RF stability; low-loss, low-impedance, coaxial cable output. Vernier 3:1 drive. 110-volt 60-cycle operation.
 Cat. No. 32-615 Net Price **\$73.45**



(H) Simpson Model 340 Signal Generator

A new signal generator with seven RF ranges: 75KC-30 MC fundamental frequency; up to 120 MC on harmonics. Unmodulated, or 30% AM at 400 cycles. RF output from 0.5 microvolts to 0.1 volt controlled by step attenuator of ladder type. Audio signal, continuously variable from 0 to 5 volts. Electron-coupled circuit gives extreme stability and uniform output. Has shielded coils and line cord and line filter. Highly readable 9-inch meter dial. Vernier tuning. Enclosed in steel case 16" x 10" x 6".
 Cat. No. 32-412 Net Price **\$68.45**

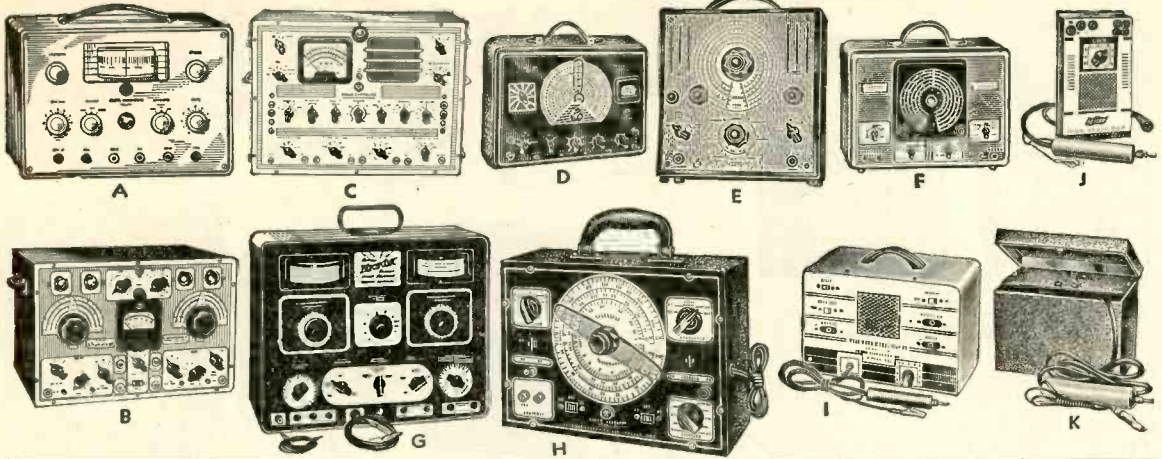


New Simpson Roto-Ranger Multi-tester

The only multi-range tester on the market which provides a single full length scale for each range. As selector switch is moved to the range desired, an ingenious gearing mechanism rotates a drum, bringing into place behind the meter window the proper scale for that range. Here is the equivalent of 18 separate instruments combined in one sturdy and compact unit. There are no cramped calibrations in these full sized Roto-Ranger scales. Each is designed as it would be for a separate instrument. Ranges are: volts, AC and DC, 2.5, 10, 50, 250, 1000, 5000; DC milliamperes, 10, 100, 500; DC microamperes, 100; Amps., DC, 10; Output, 2-5, 10, 50, 250, 1000; ohms, 0-2000 (12 ohms center), 0-200,000 (1200 ohms center), 0-20 meg. (120,000 ohms center). Sensitivity 20,000 ohms per volt DC, 1000 ohms per volt AC.
 Cat. No. 32-431 Complete with test leads, manual. Net Price **\$68.45**

See the New RCA TV-FM-AM Test Rack on Page 73

SIGNAL GENERATORS



(A) RCA Audio Oscillator Model WA-54A

A temperature-controlled beat-frequency audio oscillator with output transformer matching 250, 500 and 5000 ohms impedances. Electronic eye indicates zero beat exactly and functions as output voltmeter. Frequency range 20 to 17,000 c.p.s. Distortion under 5% over entire range. Hum level 60 db. below max. output; power output 125 milliwatts. Operates from 105-125 volts, 50/60 cycles. Dimensions $9\frac{1}{2} \times 13\frac{1}{2} \times 7\frac{1}{2}$ ". **\$152.50**
Cat. No. 32-015 Net Price

RCA FM Sweep Generator Model WR53A

Furnishes all signals needed for alignment of FM receivers. Provides a signal tunable over the 88 to 110 MC FM band. Both CW and AM signals available for local oscillator alignment. FM center frequency signal from 8.3 to 10.7 mc. with variable sweep-width for IF alignment; wide range with step and fine attenuation. IF output 1 microvolt to 0.1 volt. IF internal modulation frequency is lower line frequency; RF modulation frequency is double line frequency. Sweep width ± 200 KC at 8.3 MC., ± 400 KC at 10.7 mc. RF oscillator frequency range 85 to 110 mc. Terminals for deflection voltages on oscilloscope. Phasing control to position, scope pattern. Power supply 105-125 volts, 50/60 cycles, 30 watts. **\$162.50**
Cat. No. 32-011 Net Price

(B) RCA—Rider Chanalyst Model 162-C

The Chanalyst lets you hear the signal in any part of the set, without interfering with operation of the set; provides tracing that is a major advance in radio servicing methods. RF-IF channel: frequency range 96 to 1,700 KC; calibration $\pm 2\%$. Oscillator channel: range 600 KC to 15,000 KC; calibration $\pm 2\%$. AF channel: 150 to 50,000 cycles; sensitivity 0.1 volt. Wattage indicator channel: input range 30 to 250 watts; accuracy $\pm 15\%$. Electronic voltmeter: ranges 0-5/25/125/500 DC; input impedance 11 megohms. 105-125 volts, 50/60 cycles, 60 watts. **\$162.50**
Cat. No. 32-014 Net Price

(C) RCA Audio-Chanalyst Model 170-A

Four instruments in one forming a complete portable sound-system testing laboratory. The volt-ohmmeter channel provides high-resistance voltage measurement up to 1000 volts DC; measures resistance to 1000 megohms; checks voltage up to 100 volts throughout the audio spectrum; as AC volt-ohm-eter, will measure up to 1000 volts at power-line frequencies. Oscillator channel; range 20 cycles to 10 KC.; direct output 0-1 volt, with ampl. 1 watt; hum level -40 db. Amplifier channel: over all gain 110 db.; undistorted output 1 watt; frequency range 200 to 15,000 cycles. Electronic indicator (magic eye) used to measure identical substitutions. **\$345.00**
Cat. No. 32-013 Net Price

RCA Test Oscillator Model WR67A

For every requirement, even the most complex receiver alignment jobs. Frequency range: 100 KC to 30 MC in six bands; highly stable; three fixed frequencies — 455, 600, 1500 KC — switch-controlled for convenience in aligning standard BC receivers. Variable modulation of output with internal 400 cycle tone or external audio signal. RF output, 5 microvolts to 1 volt; AF output 25 volts. Smooth, vernier control of output. Complete with shielded cable and probe. Operates on 105-125 volts, 50/60 cycles. **\$89.50**
Cat. No. 32-012 Net Price

RCA Model 710-A UHF Signal Generator

Frequency output range flat $\pm 0.5\%$ from 370-560 mc. at 2 microvolts; 0.09 volts output. Calibrated attenuation; dial reads directly in MC. Internal 400-cycle AM or CW tone, or external AM. Operates on 110-125 volts, 50/60 cycles. Complete with tubes, 2 cables. **\$700.00**
Cat. No. 32-010 Net Price

(D) Triplet Model 3433 Signal Generator

An FM-AM signal generator that covers 100 kc. to 120 mc. in 10 bands and, when mixed with built-in 50-mc. fixed-frequency reactance-modulated oscillator, covers 100 kc. to 170 mc. Has buffer amplifier, heterodyne detector, mixer, modulator and AF oscillator stages. 3-impedance switch positions on RF output. Horizontal sweep voltage for visual alignment. **\$169.78**
Cat. No. 32-211 Net Price

(E) Triplet Model 2432 Signal Generator

A quality RF signal generator with 6-position turret-type coil switching device for rapid, efficient band changing. Has coaxial jacks for RF and AF output. Frequency range 75-224, 220-750, 700-2500, 2450-8500 kc. and 8-25, 24-50 mc. Voltage regulator tube insures stability under normal line fluctuations. Unmodulated or 400-cycle sine wave modulated output. Air-trimmed permeability-tuned coils Metal case with hinged cover and leather strap handle. For 110-120 volts, 60 cycles. **\$66.15**
Cat. No. 32-212 Net Price

(F) Triplet Model 3432 Signal Generator

Extremely accurate signal generator with lighted lucite dial; 7-band coverage — 165 kc. to 120 mc.; 165 kc. to 40 mc. on fundamentals, 36 mc. to 120 mc. on harmonics. Large, legible scales with 10 to 1 vernier tuning. Internally modulated RF (30% at 400 cycles), externally modulated RF, unmodulated RF and 400-cycle AF. RF output given fine control by output attenuator. For 110-120 volts 50/60 cycles. Electrostatically shielded transformer. With coaxial cable and tubes. **\$68.11**
Cat. No. 32-210 Net Price

(G) Hickok 288X FM-AM Universal Signal Generator

A variable frequency signal generator, crystal controlled, for AM, FM and television. RF unmodulated or internally amplitude modulated at 400 cycles, or internally frequency modulated. RF variable from 100 kc. to 110 mc. on AM and 100 kc. to 160 mc. on FM, in 7 bands, all fundamental. Fixed 50-mc. output is internally frequency modulated at 60 cycles and at 400 cycles for FM and television. Fixed, crystal-controlled 100-kc. and 1000-kc. outputs either unmodulated or internally amplitude modulated. Fixed 1000 kc. internally frequency modulated at 60 cycles for visual IF alignment. 50 mc. and 1000 kc. oscillators beat with variable RF oscillator to give variable FM signals. Variable AF output 0-15,000 cycles; fixed AF, 400 cycles. Outputs continuously variable with multiplier and linear controls. Db. meter -10 to plus 38 in 3 ranges. 110-volt 60-cycle operation. **\$169.20**
Cat. No. 32-158 Net Price
Model 277X same as 288X but without decibel meter. **\$150.36**
Cat. No. 32-159 Net Price

(H) Radio City Model 705 Signal Generator

Frequency range from 95 KC to 100 MC; fundamentals in 5 bands are continuously variable from 95 KC to 25 MC. Self-contained modulator source generates 400-cycle sine wave, modulates carrier 30% or 80%; 400-cycle frequency available for external use. 5-step ladder attenuator controls voltage from zero to maximum. Calibration accurate to 2% thru BC band; to 3% for HF bands. Practically zero drift during warm-up. RF circuits, coil assembly, and attenuator individually shielded for stable operation. High-ratio planetary-drive tuning condenser with choice of vernier or direct drive. 110-130 volts 50/60 cycle operation Size: $8 \times 11\frac{1}{2} \times 5$ ". Complete with shielded cable fitted with coax connector, alligator clips. **\$48.51**
Cat. No. 32-458 Net Price

(I) Feiler Model TS-3 Radio Stethoscope

For radio servicing. Signal is heard in 5" speaker when 1" shielded probe is touched to any part of the set. May be attached to VOM meter for visual indication. With headphone jack, steel case, 4 tubes, probe and service guide. For 115 volts 50-60 cycles. **\$34.95**
Cat. No. 32-604 Net Price
MODEL TS-2 FEILER — Similar to TS-3 but battery operated. Uses two 45 volt and one 4.5 volt batteries. Same features as AC model. With tubes, probe and instructions — less batteries. **\$29.95**
Cat. No. 32-602 Net Price

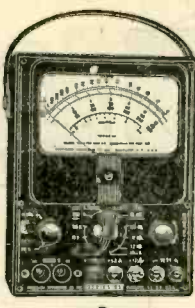
(J) Feiler Pocket Stethoscope

Portable, will fit into a pocket. 3" PM speaker; high-gain amplifier; with 4 tubes; high-sensitivity probe. For 105-125 volts DC. **\$28.95**
Cat. No. 32-601 Net Price

(K) Model TS-1 Economy Kit

Low-cost analyzer. Using any magnetic earphones, any part of the set may be checked by audible signal. Metal case, snap-lock cover, with compartment for batteries, 3' cable, and probe. With tube, less batteries and phones. **\$9.85**
Cat. No. 32-603 Net Price

SERVICE INSTRUMENTS



A

B

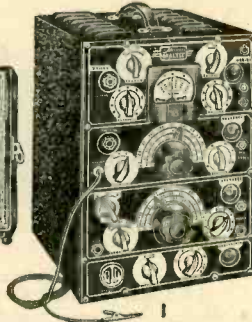
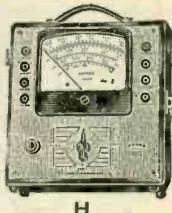
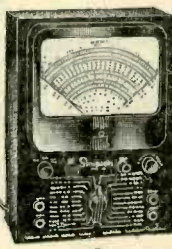
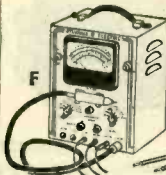
C

D

E

(C) RCA Audio Voltmeter Model WV-73A

For fidelity measurements, conductivity measurements, and use as a high-gain a-f amplifier. Model WV-73A offers: unusual sensitivity, 0.001 volt AC; wide range, 1,000,000 to 1; can be connected across 1000-volt DC circuits; withstands overloads of 1000 to 1; excellent frequency response 20 cycles to 20 KC. Operates on 105-125 volts, 50/60 cycles.
Cat. No. 32-020 Net Price **\$175.00**



G

H

I

(A) RCA Model WV-65A Voltohmyst

Type WV-65A performs all the measurement functions of the model above but is operated by internal battery, entirely independent of external power source. Measures DC volts 0-1000 in six ranges, 11-megohm input impedance; AC volts 0-1000 in five ranges, 1000 ohms/volt sensitivity; ohms 0-1000 megohms in six ranges; direct current 0-300 milliamperes, 0-10 amps. With 1 meg. shielded signal-tracing probe for dynamic voltage measurements.
Cat. No. 32-002 Net Price **\$87.50**

(A) RCA Model 195-A Voltohmyst

One of the most useful and versatile voltage testing devices for signal tracing and testing. Incorporates 6 instruments in one. DC voltmeter; 0-5/10/50/100/500/1000 volts. Electronic ohmmeter: 0-1000/10,000/100,000 ohms, 1/10/1000 megohms. AC voltmeter; 0-5/10/50/100/500/1000 volts. Electronic AF voltmeter: range 30-100 KC.; 0-5/10/50/100 volts. Electronic output meter: range -20 to +62 db. in 6 ranges. FM alignment indicator: meter reads plus or minus for alignment of FM discriminator circuit. Includes new features such as a diode rectifier for AC measurements directly on DC scale, new plastic meter case with one-piece unbreakable front, and shielded cable and probe.
Cat. No. 32-004 Net Price **\$79.50**

(A) RCA Model WV-75A Voltohmyst

An electronic voltmeter with a newly developed diode probe for reading peak-to-peak RF voltages up to 250 MC, and DC resistance to 1000 megohms. For FM and TV, all AC measurements in receivers. DC measurements directly at grid, plate, screen or cathode terminal. Meter is burn-out proof. Drift virtually eliminated. One meg. isolating resistor in DC probe for dynamic voltage checking. Polarity reversing switch. One scale for all ohmmeter ranges. Push-pull DC VTVM circuit is highly stable and linear. Ranges: DC volts 0-3/10/30/100/300/1000 volts with 11 megohm input; AC volts 0-3/10/30/100/300/1000; resistance 0-1000/10,000/100,000 ohms, 1/10/1000 megohms. Probe RF input impedance at 1 MC, 0.625 megohms and 15 mmf. Complete with tubes, probe. Operates on 105-125 volts, 50/60 cycles, 15 watts.
Cat. No. 32-001 Net Price **\$125.00**

RCA Crystal Probe Model MI-8263

Makes any model RCA Voltohmyst a VHF voltmeter; can also be used on voltmeter channel of RCA Chanalyst described on this page. Probe employs a germanium crystal rectifier. Frequency range that $\pm 10\%$ from 1KC to 100 MC for FM, TV, and other HF testing. Input voltage 20 rms. volts max. Overall accuracy $\pm 7.5\%$ at full scale. Probe point is long and narrow for easy testing; shielded cable; probe body insulated and shielded.
Cat. No. 32-003 Net Price **\$8.95**

(B) Precision Model 85 Multi Range Testers

34 ranges to 6000 volts, 12 amperes, plus 70 DB, 60 megohms. $4\frac{1}{2}$ " 50-microampere meter. Full rotary range and function selection. Molded bakelite case with plastic handle. Recessed 6000-volt safety jacks. 20,000 ohms per volt DC; 1000 ohms per volt AC. With batteries and test leads.
Cat. No. 32-052 Net Price **\$38.75**

(B) Model 80 34-Range Tester

Same as model 85 but 1000 ohms per volt AC and DC. Complete with batteries and test leads.
Cat. No. 32-053 Net Price **\$32.70**

Precision Model EV10MCP

A VTVM and set tester with ranges: 0-6000 VDC; 0-2000 megohms; also 0-6000 volts AC/DC at 1000 ohms per volt; DC to 12 amps.; db minus 26 to plus 70. Steel case with probe and battery.
Cat. No. 32-054 Net Price **\$89.95**
Model EV10P — Same as above but walnut-finished hard wood case.
Cat. No. 32-055 Net Price **\$92.70**
Model RF10 — VT RF probe for use with above.
Cat. No. 32-056 Net Price **\$14.40**

(D) Precision Model E200C

For servicing AM, FM and television receivers; 88 kc. to 120 mc. in 8 bands; (on fundamentals 88 kc. to 30 mc.) 1% maximum deviation. Unmodulated RF, 400 cycle modulated RF, externally modulated RF, and 400 cycle audio output. Dual-calibrated RF attenuators. 0-100% modulation control. $6\frac{1}{2}$ " scale with vernier for reading 1000:1. 0-50 volts AVC voltage. Complete with coaxial cable. In heavy steel case. For 110-120 volts, 50-60 cycles.
Cat. No. 32-051 Net Price **\$67.25**

(I) Meissner Analyst

Tests receivers and locates faults by the "signal tracing" method; completely equipped with all devices needed for simultaneous checks on various parts of the receiver circuit; five separate channels, each integrated in its own panel division with all controls clearly marked and accurately calibrated. The Analyst is completely wired, aligned, and laboratory tested; furnished with full set of 12 tubes and ready to use the minute it is connected to the 110-volt AC line. Includes 4-range electronic voltmeter, wide-range audio channel, 95 to 1,700 KC rf-if channel, four electron ray indicators, shielded test cables and prods, and detailed instruction book.
Cat. No. 32-100 Net Price **\$111.57**

(E) Hickock Model 156 Indicating Tracometer

For quick signal tracing from antenna to speaker. Operation of 1F, detector, discriminator, limiter, RF mixer, local oscillator, AF and power supply may be checked without changing a test lead. Built-in speaker for monitoring. Separate meters for each of 5 channels. VTVM cannot be damaged by overloads. Wattmeter measures 0 to 150 watts. For 105-125 volts 50-60 cycle.
Cat. No. 32-150 Net Price **\$195.00**

(F) Sylvania Model 134 Polymer

A VTVM for laboratory and servicing. Uses midjet probe with proximity-fuse tube; only 3 mmf. shunt capacity. Ranges: AC-DC-RF volts and milliamperes. 0-10/30/100/300 plus 0-1000 DC volts and 0-10 DC amps; resistance 0-1000/10,000/100,000 ohms and 0-1/10/100 megohms; frequency range: AC volts, 20-15,000 cps.; RF volts, 10 kc. to 300 mc. Input impedance DC volts 16 megohms; AC and RF volts 2.7 megohms. DC ranges accurate to plus or minus 5%, except plus or minus 7% on 10 amp scale; AC and RF ranges plus or minus 7-9%. For 105-125 volts 50-60 cycles.
Cat. No. 32-505 Net Price **\$89.50**

(G) Simpson Model 321 "Giant" Set Tester

Model 321 incorporates 50 ranges. Suited for either bench use or panel mounting. 7-inch meter, housed in molded bakelite case; DC scales in black. AC scales in red. Range selector fitted with large, easily operated bakelite handle; markings plainly read. All voltage ranges, AC and DC, have resistance of 1000 ohms per volt. Ranges: AC/DC volts 0-3/7.5/30/75/150/300/750/1500/3000; DC milliamperes. 0-1.5/7.5/15/75/300/750; DC amps 0-15; resistance 0-2000/20,000/200,000 ohms 2/20 megohms; mid. 0-0.05/0.5/5; db. -20 to +48 in 7 ranges. 3% accuracy DC, 5% accuracy AC, 3000-volt test leads furnished. Size 11 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " x 4".
Cat. No. 32-407 Net Price **\$59.50**

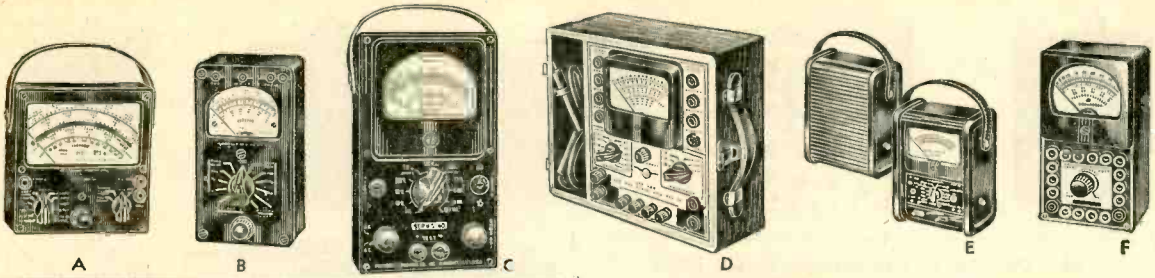
(H) Triplett Model 2405A Volt-Milliammeter

Ranges 0-10-50-250-500-1000 volts DC at 25,000 ohms per volt and AC at 1000 ohms per volt; AC amps. 0-0.5-1.5-10; DC amps. 0-10; DC ma 0-1-10-50-250; DC microamps. 0-50; ohms 0-4000-40,000; megohms 0-4-40; DB minus 10 to plus 55. 6" meter. With batteries; 50" leads.
Cat. No. 32-200 Net Price **\$59.75**

Speco Model Stab-Kit

A complete kit of parts including cabinet: to build a model Stab-Kit signal tracer. Includes all parts, instruction book with assembly and wiring instructions, etc.
Cat. No. 32-325 Net Price **\$17.95**

MULTITESTERS



(A) Triplett Model 625NA Volt-Ohm Milliammeter

For testing all high resistance circuits including television and FM. 6" meter with mirrored scale. Ranges: DC volts 0-1.25/5/25/125/500/2500 at 20,000 ohms per volt; 0-2.5/10/50/250/1000/E000 at 10,000 ohms per volt; AC volts 0-2.5/10/50/250/1000/E000 at 10,000 ohms per volt; DC amps. 0-10; all DC current measurements at 250 MV; resistances 0-2000/200,000 ohms/40 megs.; db. readings from minus 30 to plus 69. Molded case, leather carrying strap, test leads, alligator clips and instructions. Cat. No. 32-220 Net Price **\$44.10** Leather carrying case for above. Cat. No. 32-221 Net Price **\$5.39**

(B) Triplett Model 666-HH Volt-Ohm-Milliammeter

A precision, compact instrument that provides a complete miniature laboratory for DC and AC voltages and resistance analyses. Ranges: DC volts 0-10-50-250-1000-5000 at 1000 ohms per volt; AC volts 0-10-50-250-1000-5000 at 1000 ohms per volt; DC ma. 0-10-100-500 at 250 millivolts; ohms 0-2000-400,000. Self contained battery — plug-in type — 1.5 volts 50" test leads with clips and plugs furnished. Black moulded case 3 1/4" x 5 1/2" x 2 3/8". Cat. No. 32-201 Net Price **\$21.56** Cat. No. 32-202 Model 669 Leather Case. Net Price **\$4.65**

(C) Precision Series 40 AC-DC Multi-Range Tester

Small, portable unit incorporating all features found in larger instruments. 1000 ohms sensitivity on both AC and DC. Rotary selective; with 3" meter with legible scales. Ranges AC/DC and output volts 0-3-12-60-300-1200-6000; DC current 0-0.6-6-60-600 ma.; resistance 0-5000-500,000 ohms-5 megs.; 6 db. ranges, minus 26 to plus 70 db. Black moulded bakelite case with handle, ohmmeter batteries, test leads and instructions. **\$24.25** Cat. No. 32-074 Net Price

(D) Radio City Multi-Tester Model 488-A

An ultra-sensitive multi-tester with a dual sensitivity of 20,000 and 1,000 ohms per volt. For current measurement from 1 microamp. to 12 amps. Ideal for TV receiver servicing. Current transformer type AC ammeter with voltage drop of only 0.4 volts at full-scale 12 amp. range. Center of low ohm scale reads 37 ohms, permits extremely accurate readings. Wide-scale 4 1/2" meter with movement of 50 microamps. Is accurate to 2% of full scale. All multipliers, shunts are matched and accurate to 1%. Read as low as 1 microamp, .25 ohms, .1 volt. Batteries easily accessible. Overall accuracy 3% on DC, 5% on AC. 15,000-volt test leads supplied. Complete with self-contained battery. Ranges: DC volts. 0-3/12/60/300/600/1,200/6,000; AC volts. 0-3/12/60/300/600/1,200/6,000; DC milliams. 0-3/20/120/600; DC microamps. 0-60/300; DC amps. 0-12; AC amps. 0-3/6/12; resistance. 0-3,000/300,000 ohms. 30 megohms; output volts 0-3/12/60/300/600/1,200/6,000 volts. Size: 11 1/2" x 9 1/2" x 6 1/2". **\$58.31** Cat. No. 32-460 Net Price

(E) Simpson Model 260 Set Tester

A very popular, fine-quality VOM for testing television and radio sets. DC sensitivity 20,000 ohms per volt. Negligible current consumption in ranges remarkably accurate full-scale voltage readings. Low readings of 1 microamp, 1/2 ohms can be made, high readings of 10 amps, 20 megohms. AC sensitivity 1000 ohms per volt. Ranges: AC and DC volts 0-2.5/10/50/250/1000/5000; DC amps 0-10; DC milliams 0-10/100/500; DC microamps 0-100; resistance 0-2,000/200,000/ohms, 20 megohms; db. -10 to +52 in five ranges. Internal construction of separate recesses for components gives high accessibility, added insulation, great strength.

ROLL-TOP CASE TYPE

Model 260 tester contained in roll-top safety case. Flick of the finger rolls it up and instrument is ready to use. Test lead compartment. **\$42.87** Cat. No. 32-404 Net Price

OPEN-FACE TYPE

Molded Bakelite case as shown above. **\$38.17** Cat. No. 32-405 Net Price
Cowhide leather case for above. **\$7.84** Cat. No. 32-406 Net Price

Supreme Model 542 Multimeter

The model 542 is a dependable, accurate-reading, compact instrument for general applications. Virtually a pocket laboratory; dimensions 5 1/4" x 3 1/2" x 2 1/4" weight 23 ounces. Ranges: DC ma. 0-0.3/6/30/150; DC volts 0-6/150/300/1500; ohms 0-2000/20,000/200,000/2 meg.; AC volts 0-6/30/150/600; output volts 0-6/30/150/600; db. ranges -6 to +10, +8 to +24, +22 to +38, +34 to +50. Uses 3" meter with sensitivity of 5000 ohms per volt. Equipped with batteries, in molded bakelite case. **\$23.18** Cat. No. 32-250 Net Price



(F) Radio City Pocket Multi-Tester Model 449

An ultra-compact, highly efficient instrument for general testing and fast trouble shooting. Germanium crystal rectifier affords meter stability, eliminates AC voltmeter temperature errors, extends frequency response to 50 KC. 3-inch square meter accurate to 2%; sensitivity 200 microamps, 5,000 ohms per DC volt. AC voltmeter frequency response flat 30-50 KC. Voltage multipliers have 1% tolerance. Ranges: DC volts 0-5/50/250/1,000; AC volts 0-5/50/250/1,000; DC milliams., 0-0.5/10/100/1,000; resistance 0-2,000/20,000/ohms, 0-2/2 megohms; db. -6 to +52 in four ranges calibrated on 500-ohm impedance line, correction charts for other impedances. Metal case, 6" x 3" x 2 1/4". With batteries; without leads. Cat. No. 32-461 Net Price **\$24.01**

(G) Radio City Model 447 AC/DC Multi-Tester

Three-inch d'Arsonval-type 0.1 milliampere meter; low-range, low-drain ohmmeter; wire-wound shunts with 2 1/2% tolerance; 5% accuracy on AC measurements, better on DC; suppressor-type copper-oxide rectifier. Ranges: DC volts 0-5/50/250/500/2,500; AC volts 0-10/100/500/1,000; DC milliams 0-1/10/100; DC amps 0-1/10; resistance 0-500/100,000 ohms, 0-1 megohm; db. -8 to +55, scale calibrated for 500-ohm impedance, correction charts for others. Complete with test leads; self-contained battery. Size: 5 1/2" x 8 1/2" x 3 1/4". Cat. No. 32-462 Net Price **\$17.59**

Model 447-P — Same as above, in portable hardwood case with compartment and self-latching cover. Test leads and self-contained battery are supplied. Size: 6 1/2" x 8 1/2" x 4 1/4". **\$21.51** Cat. No. 32-463 Net Price

Hickok Model 203 Electronic Multitester

Compact universal test instrument for AC/DC volts, ohms, DC milliamperes, capacity, and inductance; ideal for alignment of FM and television receivers. Ranges: volts AC or DC 0-3/12/30/120/300/1200; mls 0-3/12/30/120/300/1200; capacity 0-100-000 mmf. in 2 ranges, 0-1000 in 5 ranges; inductance 50 mh.-100 h.; and ohms 1 ohm-10,000 megohms in 7 ranges; AC impedance to 5 megs. may be measured. Input impedance 15 megs. on DC, 12 megs. on AC. For 105-125 volts 50-60 cycles. Cat. No. 32-160 Net Price **\$89.40**

(H) Hickok Model 209 Volt-Ohm-Capacity-Milliammeter

A 300-megacycle VTVM with capacity ranges 0-10000 mmf. and 0-1000 mfd.; resistance .1 ohm to 10,000 megs.; inductance, 60 mh. to 100 h.; AC/DC volts 0-3-12-30-120-300-1200; DC ma. 0-3-12-30-120-300-1200; input imp. 15 megs. DC and 12 megs. AC. Complete with 6 tubes, RF probe and test leads. 105-125 volts 50-60 cycles. **\$99.60** Cat. No. 32-151 Net Price

Hickok 435 Volt-Ohm-Milliammeter

Wide-range, easy to read, large square-face meter. Ranges: AC/DC and output volts 0-2.5-10-50-1000-5000 at 20,000 ohms/volt; AC 0-2.5-10-50-250-1000 ma. and 0-10a; resistance, 0-10 megs. in 4 ranges; Db minis 20 to plus 29. Operates on one 4.5 volt battery. **\$37.50** Cat. No. 32-152 Net Price

Hickok 858P Dual-Sensitivity Tester

54 ranges, with push-button control for all functions. AC/DC and output volts 0-3-6-12-60-300-600-1200-6000 at 20,000 or 1000 ohms per volt DC and 1000 ohms per volt AC; DC current 0-60-120 microamps. 0-1.2-12-120-600 ma. and 0-1.2-12 amps.; ohms 0-6000-60,000-600,000 and 0-6-60-600 megs.; db. minus 26 to plus 70. 4 1/2" 50-microamp. meter. Hardwood case with batteries and test leads. **\$48.94** Cat. No. 32-153 Net Price
847P — Same as above. 5000 and 1000 ohms per volt. Ranges to 6000 volts, 12 amps., 200 megs. and 70 db.; with batteries and test leads. 4 1/2" 200-microamp. meter. **\$44.00** Cat. No. 32-154 Net Price

See the New Simpson Roto Ranger on Page 46



A



B



C



D



E

(A) Dumont 5" Oscilloscope Model 208B

Uses 5LP1 tube at 1,400 volts accelerating potential; sweep range is 2 to 50,000 cycles; deflection factors — .010 volts per inch vertical, .50 volts per inch horizontal; input impedance — 2 megohms vertical, 5 megohms horizontal; input frequencies 2 to 100,000 cycles; distortionless input attenuator.
Cat. No. 32-530 Type 208B. Complete with tubes. Net Price **\$285.00**

Dumont 3" High Frequency Oscilloscope

For studying audio and video signals above the usual working range of oscilloscopes; wide-range response adequate for work with square waves, pulses, and steep wave-fronts; furnished with test probe having shielded cable and low input capacitance. Uses 3GP1 tube at 1,000 volts accelerating potential; sweep range 15 to 30,000 cycles; input range 20 to 2,000,000 cycles vertical, 10 to 100,000 cycles horizontal; deflection factors — .70 volts per inch horizontal, .10 volts per inch vertical, .40 volts per inch vertical with probe; input impedances — 2 megohms at terminals, 1 megohm at probe; metal case 14 1/2" x 8 3/8" x 15 1/2"; carrying handle.
Cat. No. 32-531 Type 224A complete with tubes and probe. Net Price **\$290.00**

(B) 5" Dumont Oscilloscope Model 274-A

This precision instrument was developed as an inexpensive general purpose instrument for laboratory, radio service, and educational applications. The Type 274 serves as an excellent null indicator on inductance/capacitance bridges, as a means of measuring time and amplitude of pulses, as an indicator in studies of sound, light, electricity, and electronics and many other general applications.
Cat. No. 32-532 Net Price **\$136.50**

(C) Dumont 3" General Purpose Oscilloscope

A small, convenient cathode-ray oscilloscope for laboratory and shop use; valuable in field work where minimum power consumption, small size, and light weight are essential; uses 3API high-vacuum tube at 1,100 volts accelerating potential; gas-discharge sawtooth oscillator for sweep continuously variable from 15 to 30,000 cycles; amplifiers cover 5 to 100,000 cycle range; deflection factors — .70 RMS volts per inch vertical, .55 volts per inch horizontal; input impedance — 1 megohm vertical, 800,000 ohms horizontal; metal case 11 3/8" x 7 1/8" x 14" with convenient carrying handle.
Cat. No. 32-534 Type 164E complete with tubes. Net Price **\$127.20**

(D) Dumont Electronic Switch and Square-Wave Generator

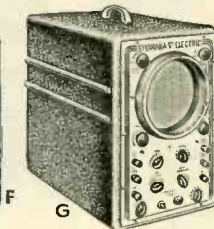
Permits simultaneous observation of two independent signals on the screen of a single cathode-ray tube; useful in comparing amplitude, wave-form, and phase relationships; may be cascaded for study of three circuits on a single tube; switching rate is continuously variable from 10 to 2,000 times per second; input resistance 100,000 ohms; output resistance 50,000 ohms; square-wave output 30 volts peak-to-peak, frequency continuously variable 10 to 500 square-wave cycles per second; metal case 11 1/2" x 7 1/8" x 13"; carrying handle.
Cat. No. 32-525 Type 185A complete with tubes. Net Price **\$105.00**

(E) Dumont 215 Linear Time-Base Generator

Extends the low-frequency time-base of any 5" balanced deflection oscillograph. Balanced output adjustable to undistorted maximum of about 400 volts peak to peak. Sweep frequencies from 0.2 to 125 c.p.s. with positive or negative return-trace blanking signal. Has compensating circuit for exact linearity. 300 volts DC positioning voltage. Steel case with carrying handle. For 115-230 volts 40-60 cycles. With tubes. Net Price **\$215.00**

MILLEN OSCILLOSCOPES Series 90902

For either general laboratory and experimental use or as complete self-contained portable equipment. As transmitter modulation monitor, no additional equipment is needed; trapezoidal patterns are obtained by feeding modulation carrier voltage to vertical plates and audio modulating voltage to horizontal plates. For laboratory use, sweep, pulse generator, amplifier, etc., can be added to companion rack panels. Complete with tubes
Cat. No. 32-101 2" scope. Net Price **\$42.50**
Cat. No. 32-102 3" scope. Net Price **49.50**
Cat. No. 32-103 5" scope. Net Price **100.00**



(F) Hickok Model 505 5" Oscilloscope

Designed for servicing AM and FM receivers. Has a demodulator for viewing any modulated RF signal and a modulation circuit for modulating FM oscillator either internally or externally. Features built-in wide and narrow band FM oscillators; self-contained mixer permits mixing any signal generator with FM oscillators for variable frequency FM source; FM narrow band, 1000 kc. modulated at 60 cycles with 0-30 kc. sweep; adjustable linear sweep, 10 cycles to 25 kc.; FM wide band 50-mc. modulated at 60 cycles with 0-450 kc. sweep; vertical amplifier, 30 cycles to 1 mc. Retractable light shield. 110-volt, 60 cycle operation. Net Price **\$179.00**
Cat. No. 32-167

(G) Sylvania Type 132 7" Oscilloscope

A deluxe test instrument for modern radio and electronic circuit testing and alignment, audio circuit analysis and transmitter checking. Extra-big wave-form patterns on 7" cathode-ray tube. Power supply — 105 to 125 volts, 50-60 cycles, 35 watts. Vertical input: direct — 15 volts rms. give one inch peak to peak deflection; amplifier .21 volts rms. give 1" peak to peak deflection; amplifier frequency response exceeds 10 cps. to 70 kc. Impedance: direct 3.9 meg., .20 mmfd.; amplifier: 0.5 meg., .26 mmfd. Horizontal input: direct 18 volts rms. give 1" peak to peak deflection; amplifier .25 volts rms. give 1" peak to peak deflection; amplifier frequency response exceeds 10 cps. to 55 kc. Impedance: direct 3.9 meg., .20 mmfd.; amplifier 0.5 meg., .33 mmfd.; sweep from left to right; frequencies from 15 to 30,000 cycles, in five ranges. Impedance to ground approximately 0.5 meg., .30 mmfd.
Cat. No. 32-508 Net Price **\$144.50**

(H) National Type CRU Oscilloscope

A compact inexpensive instrument for the progressive amateur or experimenter. Uses a 2" tube and has INTENSITY, FOCUS, and SWEEP controls in addition to the AC ON/OFF and 60 cycle/external-sweep switches. See this amazing value at the Radio Shack or write for further details.
Cat. No. 32-761 Net Price **\$39.90**
Rack panel and control plate to rack mount CRU Scope. Cat. No. 32-762 Net Price **\$2.85**

RCA 3" Oscilloscope Model WO-79A

A wide-range 3" oscilloscope incorporating features for the study of television sync and deflection circuits, ignition systems, pulse generators and radar equipment, heretofore available only in more elaborate and expensive laboratory equipment. Wide frequency range and high gain characteristics permit study of high-speed transient and pulsed voltages of the order of 1 microsecond. Operates on 105-120 volts, 50-60 cycles. Net Price **\$550.00**
Cat. No. 32-025

RCA 5" Oscilloscope Model WO-60C

A general purpose instrument designed for rugged duty. Exceptionally good phase-shift characteristics and low-frequency response. Measures mechanical movements as low as 60 RPM; valuable in testing servo mechanisms and super-sonic equipment, and in vibration measurements. Sensitivity: X-axis .067 volts, peak-to-peak, per inch, Y-axis .056 volts, peak-to-peak, per inch. Input impedance X or Y amplifier or direct to X or Y plates, 1.0 megohm shunted by approximately 22 mfd. Sawtooth time base 3 to 30,000 c.p.s. Frequency range from 5 to 300,000 cycles. Square wave has no tilt or overshoot from 20 to 5000 cycles. Designed for fast change-over of c-r tube. C-r tube supplied is medium-persistence type for general applications. Special circuits for steady signal. Operates on 105-125 volts, 50/60 cycles. Net Price **\$345.00**
Cat. No. 32-026

Dumont Type 264A Voltage Calibrator

This voltage calibrator is a small, compact, direct-reading instrument that is convenient to use. May be used with any commercial cathode-ray oscillograph. The output is essentially a square wave with amplitude continuously variable from 0 to 100 volts. By throwing the selector switch, either the unknown signal or any of four ranges of calibrating voltage may be applied to the input of the oscillograph. Net Price **\$39.50**
Cat. No. 32-533

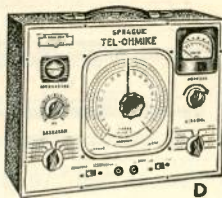
TESTERS Capacitance - Resistance - Inductance



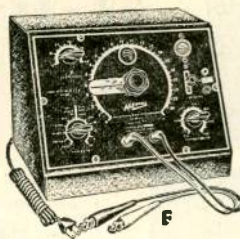
A



C



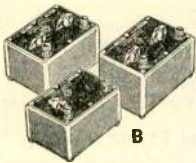
D



F



E



(A) C-D Capacitor Analyzer

A precision instrument for laboratory and shop; accurately measures capacity of paper, mica, air, and electrolytic capacitors from .00001 to 240 mfd.; measures power factor; indicates leakage and insulation resistance; detects defective capacitors; readings are on six linear color-coded scales. The Wien bridge circuit has high sensitivity and includes balance sensitivity control that speeds operation. Visual eye indicates balance and leakage. Push-button switching for rapid control. Contained in portable case 6½ x 12 x 9½" with built-in power supply for 110 volt AC operation.

Cat. No. 32-730 Type BF-50, less tubes. Net Price . . . \$41.80
 Cat. No. 32-731 Kit of tubes 1-12A7 and 1-6E5. Net . . . 2.44

(B) C-D Capacitor Decades

Provide accurate standards over wide range of capacity; may be used in groups of three, or individually; each unit furnished with calibration chart giving exact capacity values for all scale markings; rated at 600 volts DC,

Cat. No.	Type	Max. Mfd.	Steps	Tol.	Net
32-734	CDA-5	.011	.0001	5%†	\$8.33
32-735	CDB-5	1.1	.01	5%*	8.33
32-736	CDB-3	1.1	.01	3%*	11.76
32-737	CDC-5	10.0	1.0	5%*	17.15
32-738	CDC-3	10.0	1.0	3%*	19.11

* Oil-paper dielectric.

† Mica dielectric.

(G) C-D Capacitor Bridge

This ultra-compact bridge (Wien type) quickly and accurately measures all types of capacitors from .00001 to 50 mfd.; indicates power factor; detects defective condensers; checks circuit continuity. Dual type visual eye bridge balance and direct-reading scale for rapid, easy use. This compact instrument—only 3½ x 5 x 3"—is wholly self-contained, requiring no accessories; bakelite case, is attractive walnut color. Furnished with detachable test leads and complete operating instructions.

Cat. No. 32-732 Type BN, less tubes. Net Price . . . \$19.50

Cat. No. 32-733 Kit of tubes 1-6AF6G and 1-12A7. Net . . . 2.85

(D) Sprague Tel-Ohmike Model To-3

Universal capacitor and resistor analyzer with built-in DC volt-milliammeter. Checks capacitors and resistors without removing them from the circuit. Capacity: 0.00001 to 2000 mfd. in 4 ranges; power factor: 0-50% at 60 cycles; insulation resistance 0-2500 megohms; resistance 2.5 ohms to 25 megohms. In 3 ranges; DC meter range 0-15/150/750 volts—0-1.5/15/75 ma.; 35 watts at 115 volts 60 cycle.

Cat. No. 32-660 Net Price . . . \$59.70

(C) Aerovox L-C Checker

Tests condensers and inductances at radio frequencies under essentially working conditions . . . while part is still in its circuit. Also tests combinations of capacitance and inductance, showing resonant frequency, hence operating efficiency of circuit. Indispensable to the serious radio worker. Large, full-vision dial reads capacitance .0004 to 1.0 mfd. and inductance 0.1 to 10,000 mmh. in six frequency ranges, 60-170, 170-490, 490-1,500 kc., 1.5-4.6, 4.5-15, 13-40 mc. Magic eye type 6E5 is indicator. Other tubes are 6J5G, 25Z5, and VR105. Accuracy of L and C readings is better than 10%; frequency readings, about 1%. Instrument contained in crackle-finished steel housing with slide compartment holding power cord, test leads, coupling link, and capacity clip. Size 10½ x 7½ x 5½".

Cat. No. 32-754 L-C Checker Model 95, complete as described, including explicit operating instructions. Net Price . . . \$44.75

(E) Aerovox Motor-Starting Capacitor Selector

Determines the necessary capacitance to replace the wornout motor-starting capacitor, at the mere flip of a switch. In the absence of label, nameplate or other means of identification, this instrument provides the immediate answer. The 0-150 volts AC voltmeter can be used separately.

Cat. No. 32-751 Model 87. Net Price . . . \$20.53
 Cat. No. 32-752 Model 85. Net Price . . . 11.41
 Cat. No. 32-753 Emergency Capacitor. Net Price . . . 4.56

(F) Aerovox Capacitance and Resistance Bridge 76

This instrument combines simplicity of operation, and accuracy at a modest price. Measures capacitance from 100 mmf. to 200 mfd. in six ranges. Measures resistance from 10 ohms to 20 megohms in six ranges. Measures power factor from 0 to 50%. Provides DC polarizing potential for leakage measurements, from 0 to 600 volts DC, continuously variable and calculated in volts. Checks leakage or insulation resistance.

Cat. No. 32-750 Net Price . . . \$44.76

(H) Solar Type CF Exam-eter

A sturdy, reliable capacitor analyzer designed to simplify electronic servicing. Has exclusive, patented "Quick-Check" circuit for tests and "Intermittent" checks without unsoldering capacitor leads. Capacity range 10 mmf. to 2000 mfc.; power factor range 0 to 50%; insulation resistance range 3 to 10,000 megohms; leakage current reads on 4½" meter; continuously adjustable 0-550 VDC power supply; 0-600 volts 3-range DC VTVM; 100 ohm to 7.5 meg. AC resistance bridge. Furnished with technical manual.

Cat. No. 32-665 CF1-60 115 volt 50-60 cycles. Net Price . . . \$58.50

Cat. No. 32-666 CF 2-U 115-230 volts 25-60 cycles Net Price. \$70.45

(I) Solar Model CBB Analyzer

Magic Eye for bridge balance indication; capacitance range—10 mmf. to 800 m.; power factor range 0 to 55%; neon lamp circuit for insulation resistance and electrolytic leakage; resistance bridge 50 ohms to 2 megohms; color coded scales. Portable case with detachable cover.

Cat. No. 32-667 CBB1-60 115 volts AC 50-60 cycles. Net Price \$39.00

Cat. No. 32-668 CBB2-U 115 volts AC 25-60 cycles. Net Price \$46.90

Triplett Model 2450 VTVM-Capacity Meter

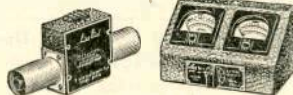
Ranges: Volts AC/DC 0-2.5-10-50-250-500-1000; DC ma. 0-1-1-10-50-250-1000; ohms 0-1000-10,000-100,000; megohms 0-1-10-100-1000; mfd. 0-.05-.5-5-50-500. Input impedance 51 megohms, on DC, 8 megohms, and 5 mmf. on AC. 6" meter. For 110-120 volts 60 cycles.

Cat. No. 32-217 Net Price . . . \$97.51

Jones Micro-Match Model MM200 for FM, TV

Continuously and simultaneously while transmitter is in operation, Micro-Match measures standing wave ratio and actual RF power output. Permits load or antenna matching to line. Frequency range 20 to 122 MC; impedance 51.5 ohms; 1½" 51.5 ohm coax connectors. Ranges: 0-.4/1.2/4/12 KW; accuracy ± 4% on RF power. Model MM200 consists of coupler unit, which connects directly to standard coax line, and indicator unit with standing wave ratio and RF power meter.

Cat. No. 32-650 Net Price . . . \$150.00



Model MM1 Micro-Match

For measuring standing wave ratio and RF power. Model MM1 can be connected into a transmission line of any impedance from 70 to 300 ohms. Reversing terminals permits reading RF power fed down transmission line. Operates on any frequency from 3 to 30 MC, with any transmitter power from 10 to 100 watts.

Cat. No. 32-654 Net Price . . . \$29.50

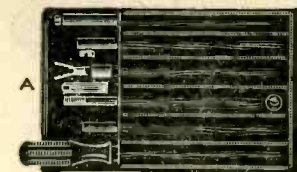
Model MM2 Micro-Match

For measuring standing wave ratio and RF power on coaxial transmission lines. Reads accurately in frequency range from 3 to 162 MC without absorbing appreciable power from line. May be left in line to monitor standing wave ratio and RF power while line is in use. Line impedance 52 to 72 ohms; power range from 10 to 500 watts, reflection coefficient less than 1 db.; directivity more than 20 db.; power loss less than 0.3 db. With Amphenol connectors.

Cat. No. 32-651 Coupler & Indicator, 52 ohms. Net . . . \$37.45
 Cat. No. 32-652 Coupler & Indicator for 72 ohms. Net . . . \$37.45
 Cat. No. 32-653 Coupler for either of above. Net . . . \$19.95

Whatever Your Capacitor Requirements, "The Shack" Can Fill Them

NEUTRALIZING TOOLS - TEST PRODS



(A) ICA Kit "994"

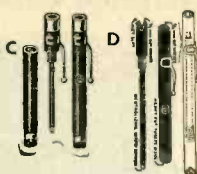
14 tools telescope to form 6 more tools for alignment of almost all types of receivers. With leatherette, compartment case. Tools include: flexible shaft screwdriver, alignment tool, alligator side wrench, $\frac{1}{8}$ " insulated square nut wrench, $\frac{1}{8}$ " hex nut side wrench, 6" insulated driver with metal nib, $\frac{1}{8}$ " and $\frac{1}{4}$ " nut wrench, $\frac{1}{8}$ " hex slotted insulated wrench driver, $\frac{1}{8}$ " hex insulated nut wrench, 5" and 6" insulated driver. Cat. No. 32-842 Net Price \$4.41

ICA Kit "998"

"Twelve-in-4" telescoping tools include: $\frac{1}{8}$ " hex nut wrenches, $\frac{1}{8}$ " and $\frac{1}{4}$ " nut wrenches, 2 $\frac{1}{2}$ ", 5", 6" screwdrivers, alligator side wrench, etc. Supplied with case. Cat. No. 32-843 Net Price \$3.82

(B) Alignment & Neutralizing Tools ICA Kit 995

Kit includes all the tools needed for aligning any type of set. 21 tools with roll case: flexible-shaft screwdriver, 4-in-1 alignment tool, 5-in-1 alignment tool, tuning wand, test leads, balancing tool, adjustable tool for $\frac{1}{8}$ " hex nuts, $\frac{1}{4}$ " hex wrench, wrench tool for $\frac{1}{8}$ " and $\frac{1}{4}$ " hex nuts, fork-type neutralizing wrench and screwdriver, narrow-shaft alignment tool, bone-fibre screwdrivers alignment tool for $\frac{1}{4}$ " nuts. Cat. No. 32-841 Net Price \$11.76



(C) 5-in-1 Alignment Tool "1022"

5 tools telescope into one "fountain pen" size unit. Cat. No. 32-844 Net Price 79c

(D) 4-in-1 Alignment Tool "1019"

A handy pocket-size unit with fenoline handle. Cat. No. 32-845 Net Price 50c

(E) Amphenol Polystyrene HF Neutralizer

Has no capacity effect when aligning critical circuits. An essential for high frequency circuit adjustments. Cat. No. 32-878 Net Each 15c

(F) Non-Metallic Adjustable Tool

Neutralizing tool of rugged plastic construction has screwdriver at one end, $\frac{1}{8}$ " hex socket at other end. Cat. No. 32-846 Adjustable from 6" to 10" Net Price 44c

Cat. No. 32-847 Adjustable from 12" to 16" Net Price 59c

Non-Metallic Aligning Screwdriver

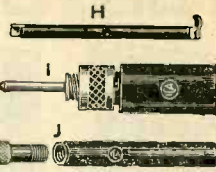
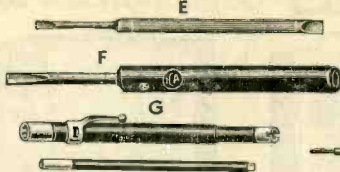
For adjustment of trimmer capacitors in RF circuits. Barrel diam. $\frac{1}{8}$ ", 6" long overall. Cat. No. 32-848 Net Each 41c

Bakelite Dual-end Screwdriver

Barrel of Bakelite $\frac{1}{8}$ " diam., 7" long overall. Cat. No. 32-849 Net Each 23c

(G) Metal-Collar Neutralizer

Metal collars make this tool a long lasting part of any hardworking tool kit. $\frac{1}{8}$ " and $\frac{1}{4}$ " hex nut sockets. Cat. No. 32-850 Net Each 88c



(H) Philco Alignment Tool

Special hook on one end for neutralizing air trimmer condensers on Philco sets. Cat. No. 32-851 Net Each 35c

(I) Test Lead Phone Tips

Solderless connection; knurled collar tightens after wire is inserted thru barrel. Insulated sleeve. Fits all standard tip jacks. $\frac{1}{8}$ " overall. Cat. No. 32-836 Red Net Each 10c
Cat. No. 32-837 Black Net Each 10c

(J) Phono Needle Test Prods

Chuck takes standard phonograph needles, tighten with nut. Solderless connections. Cat. No. 32-834 Red Net Ea. 24c
Cat. No. 32-835 Black Net Ea. 24c

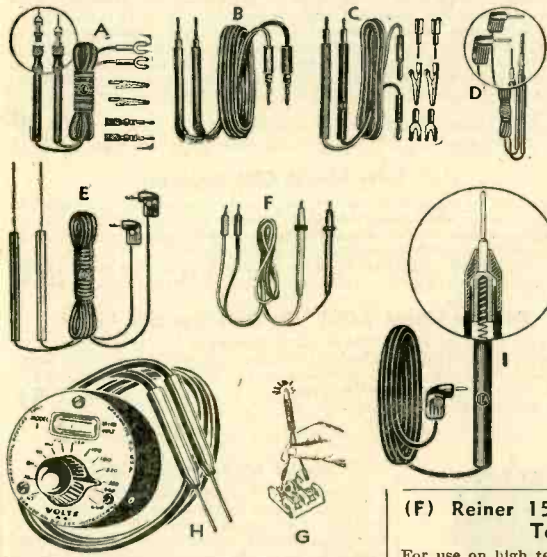
(K) Combination Clip-Wrench Tool

TYPE 5012 — Alligator clip at one end of bone fibre barrel, $\frac{1}{8}$ " hex nut socket at other end. Cat. No. 32-852 Net Each 29c

(L) Tuning Wand

TYPE 5002 — With brass end and iron core end to increase or decrease coil inductance as desired when adjusting coils. Cat. No. 32-853 Net Each 59c

TEST SETS



(H) Mini-volt Neon Glow Voltmeter

A rugged, simple meter of good accuracy, virtually burnout proof, for use by servicemen, electricians, laboratories. Calibrated for 65 to 665 volts AC; may be used on DC. G-E neon lamp guaranteed for 10,000 hours of operation. Complete with 12" flexible leads, test prods; lightweight, compact bakelite case takes rugged handling. Cat. No. 32-771 Net Price \$1.47

(A) Heavy-Duty Test Leads & Prods

With replaceable phonograph needle points that penetrate the insulation of wire; extra-flexible red and black rubber-covered "kinkless" leads 48" long; 6" fenoline handles. With insulated phone tip terminals. ICA Type 400. Cat. No. 32-826 Net Per Pair 82c

Cat. No. 32-827 With Alligator clip terminals. ICA 388. Net Per Pair 82c

Cat. No. 32-828 With non-insulated clip terminals. ICA 312. Net Per Pair 82c

(B) Unbreakable Test Leads

Handles are brass, cadmium plated, covered with live rubber; 4 ft "kinkless" leads, rubber-covered. Pointed phone tip prods, phone tip terminals. Cat. No. 32-831 ICA 332. Non-insulated phone tips. Per Pr. Net Price 59c

Cat. No. 32-832 ICA 331. Insulated phone tips. Per Pr. Net Price 68c

(C) ICA Test Prod Kit

A universal test kit; insulated fittings are provided for every type of testing. One pair of test leads 4 ft. long. One end has insulated phone tip prods and the other end insulated, removable, banana-type plugs. Extra fittings, spade lugs, phone tip, and alligator clip terminals are interchangeable with banana plugs. Cat. No. 32-829 ICA 312. Net Price \$1.47

(D) Finger-Grip Test Leads

Molded, finger-grip insulated phone tips at ends of flexible "kinkless" leads 4 ft. long; sharp pointed prods screw into 5" handles of red and black fenoline; all connections well soldered. Cat. No. 32-830 ICA 373. Net Price \$1.03

(E) Thin-Shaft Test Leads

Long thin shaft lets prod reach into crowded spaces without touching off a short. A new ICA set. Handles are Teulon, black and red; 4 ft. wire leads. Molded finger-grip phone tip plugs. Cat. No. 32-833 ICA 438. Per Pr. Net Price 88c

(F) Reiner 15,000 V. Heavy Duty Test Leads

For use on high tension circuits. Combination triple barrier long path leakage guard and thumb rests with 6" red and black prods. Leads 45" long. Cat. No. 32-885 Net Price \$2.91

(G) General Cement Ne-O-Lite

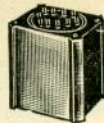
Tests for live lines, polarity, blown fuses, defective spark plugs and cables; indicates DC, AC, or RF and voltage up to 500 volts; short-prod leads and tips; handy pocket-clip. Cat. No. 32-880 Net Each 59c

(I) ICA Safe-T-Tester

Insulated for 10,000 volts for testing high-voltage equipment, this safety prod permits the energizing circuit to be completed only when the handle is pushed to make positive contact. Eliminates accidental shorts which can cause drastic damage. Fits standard test equipment. With 4 ft. leads. Cat. No. 32-840 ICA 446. Net Price 88c

A complete assortment of Mueller spring and alligator clips for test and service work is listed on page 17 of this catalog.

UTC - Linear Standard AUDIO TRANSFORMERS



Low-Impedance to Grid Transformers Series LS

Cat. No.	Type	Imp. Ohms	Secondary Imp. Ohms	Shielding and Hum Reduction	Net
Mtg. type LS-1 except † is LS-2.					
13-001	10	50, 125, 200, 250, 333, 500	69,000, 2 sect.	Dual alloy shield-74DB	\$14.70
13-002	10X	50, 125, 200, 250, 333, 500	50,000	Quadruple alloy shield-92DB	18.92
13-003	12	50, 125, 200, 250, 333, 500	120,000, 2 sect.	Dual alloy shield-74DB	16.46
13-004	LS-12X	50, 125, 200, 250, 333, 500	80,000, 2 sect.	Quadruple alloy shield-92DB	20.58
13-005	14	2.5, 5.5, 10, 15, 22, 30, 60	60,000, 2 sect.	Dual alloy shield-74DB	16.48
13-006	14X	2.5, 5.5, 10, 15, 22, 30, 60	60,000, 2 sect.	Quadruple alloy shield-92DB	20.58
13-007	15X*	30, 50, 200, 250 ohms each primary	60,000, 2 sect.	Quadruple alloy shield-92DB	20.58
13-008	18†	50, 125, 200, 250, 333, 500	50,000, 2 sect.	Alloy casting -50DB	18.82
13-009	26	5,000 ohms	60,000, 2 sect.	Dual alloy shield-74DB	14.70

* Three isolated lines or pads to one or two grids.
† High level multiple line to PP grids.

LS-1 CASE	LS-2 CASE	LS-3 CASE
L = 3 1/2"	L = 4 1/2"	L = 5 1/2"
W = 2 1/2"	W = 3 1/2"	W = 5"
H = 3 1/2"	H = 4 1/2"	H = 4 1/2"

Mtg. = 1 1/2 x 2 1/8" Mt. = 2 1/2 x 3 1/8" Mtg. = 4 1/8 x 5 W"

Hybrid and Repeat Coils

Mounting type LS-1	Application	Pri. and Sec. Imps.	Hum Reduction	Net
13-028	Line to line for isolating balanced and unbalanced circuits; balanced for maximum reduction cross talk (70DB)	500/600 ohms 500/600 ohms both split	Quad. alloy shield-92DB	\$20.58
13-029	3 sets balanced windings for hybrid service; centertapped	500/600 ohms 500/600 ohms	Dual alloy shield-74DB	16.46
13-030	Line to line and to push pull grids for hybrid service	500/600 ohms 500/600 ohms	Dual alloy shield-74DB	20.58

Interstage Audio Transformers

Cat. No.	Type	Imp. Ohms	Secondary Imp. Ohms	Shielding and Hum Reduction	Net
13-010	19**	15,000 ohms	95,000; 1.25:1 ea. side	Dual alloy shield-50DB	\$14.11
13-011	20*	50-500, 8,000-15,000	60,000 2:1 ratio	Dual alloy shield-74DB	12.35
13-012	21**	50-500, 8,000-15,000	135,000; ratio 1.5:1	Dual alloy shield-74DB	14.11
13-013†	22†	8,000-15,000	38,000 ohms sec. turn ratio 1.6:1	Alloy casting -74DB	18.23
13-014	25†	30,000 ohms plate to plate	50,000; 1.3:1 overall	Dual alloy shield-74DB	16.46
13-015	26††	5,000 ohms	60,000; 2 sect.	Dual alloy shield-74DB	14.70
13-016	40**	8,000 to 15,000 ohms also for bridging 50/500 ohm line	135,000; ratio 1.5:1 ea. side	Dual alloy shield-74DB	14.11

* Single plate to single grid. † P.P. Plates to P.P. grid.
** Single plate to P.P. grids. †† Single plate or line to one or two grids.
‡ Primary and secondary each in two sections.

Mixing Transformers

Mounting Type LS-1	Cat. No.	Type	Imp. Ohms	Secondary Imp. Ohms	Shielding and Hum Reduction	Net
13-017	30	30	50, 125, 200, 250, 333, 500-600	250,333,500-600	Dual alloy shield-74DB	\$14.70
13-018	30X	30X	50, 125, 200, 250, 333, 500-600	50, 125, 200, 250,333, 500-600	Quadruple alloy shield-92DB	18.82
13-019	31X*	31X*	30, 50, 200, 250 ea. pri.	50, 125, 200, 250, 333, 500/600	Quadruple alloy shield-92DB	20.58
13-020	31*	31*	30, 50, 200, 500 ea. pri.	50, 125, 200, 250, 333, 500	Dual alloy shield-74DB	16.80
13-021	31X	31X	30, 50, 200, 500 ea. pri.	50, 125, 200, 250, 333, 500	Quadruple alloy shield-92DB	14.70

* Three isolated lines or pads to multiple lines.

Plate, Crystal, Photocell, and Bridging to Line Transformers

Mounting Type LS-1	Cat. No.	Type	Application	Pri. Imp.	Sec. Imp.	Net
13-022	50	50	Single plate to multiple line	8,000/15,000	50, 125, 200, 250, 333, 500-600	\$14.11
13-023	51	51	Push pull low level plates to multiple line	8,000/15,000 each side	50, 125, 200,250, 333, 500-600	14.11
13-024	37	37	Crystal microphone or pickup to multiple line	100,000	50, 125, 200, 250, 333, 500-600	14.70
13-025	38	38	Crystal microphone or pickup to multiple line, with external equalizer	100,000	50, 125, 200, 250, 333, 500-600	18.82
13-026	150	150	Bridging transformer from 50 to 500 ohm line to multiple line	4,000 bridging	50, 125, 200, 250, 333, 500-600	14.70
13-027	151	151	Bridging transformer from 50 to 500 ohm line to multiple line	16,000 bridging	50, 125, 200, 250, 333, 500-600	14.70

Output Transformers to Line and Voice Coil

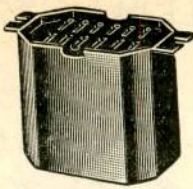
Cat. No.	Type	Type Tubes	Primary Imp. Ohms	Secondary Imp. Ohms	Net
13-034*	52	52	Push-pull 2A5, 250, 6V6, 42 or 2A5 A prime	8,000 ohms	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-035*	54	54	Same as above	8,000 ohms	500,333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-036*	55	55	Push-pull 2A3's, 6A5G's, 300A's, 275A's, 6A3's	5,000 ohms pl. to pl. and 3,000 ohms plate to plate	500,333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-037*	57	57	Same as above	8,000 ohms pl. to pl. and 3,000 ohms plate to plate	30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-038†	58	58	Push-pull-parallel 2A3's, 6A5G's, 300A's, 6A3's	2,500 ohms pl. to pl. and 1,500 ohms pl. to pl.	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-039*	61	61	Push-pull 6B5, 6A6, 53, 6F6, 71A, 59, 79, 89, Class B 46's, 59's	10,000 ohms pl. to pl. and 6,000 ohms plate to plate	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-040†	6L1	6L1	Push-pull 6L6's self bias; incorporates tertiary winding for stabilized feedback	6,000 ohms pl. to pl.	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2
13-041†	6L4	6L4	Push-pull 6L6's fixed bias or PP parallel 6L6's self bias	3,800 ohms pl. to pl. & 4,500 ohms pl. to pl.	500, 333, 250, 200, 125, 50, 30, 20, 15, 10, 7.5, 5, 2.5, 1.2

* Mounting type LS-2. † Mounting type LS-4. § Mounting type LS-3.

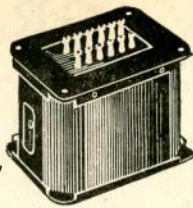
High Level Matching Transformers

Cat. No.	Type	Application	Primary Imp. Ohms	Secondary Ohms	Net
13-042*	33	High-level line matching 15 watts	50, 125, 200, 250, 333, 500	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500	\$16.46
13-043†	34	High-level line matching 30 watts	50, 125, 200, 250, 333, 500	1.2, 2.5, 5, 7.5, 10, 15, 20, 30, 50, 125, 200, 250, 333, 500	24.70

* Mounting type LS-2. † Mounting type LS-3



G-1, G-2, G-3, G-4,



G-5, G-7, G-8, G-9, G-10, G-11, G-12

Case Sizes Special Series Audio & Power Transformers

Table with columns: Mtg. Fig., Height, Width, Depth, Mtg. Fig., Height, Width, Depth for transformer types G-1 through G-7.

Class A Input Transformers

Table with columns: Cat.No., Type, Ratio, Application, Mtg. Fig., Net for Class A Input Transformers.

Universal Driver Transformers

Table with columns: Cat.No., Type, Application, Mtg. Fig., Net for Universal Driver Transformers.

Matching Transformers

Table with columns: Cat. No., Type, Application, Pri. Ohms, Sec., Mtg. Fig., Net for Matching Transformers.

Universal Output Transformers

Table with columns: Cat.No., Type, Primary Impedance, Watts, Mtg. Fig., Net for Universal Output Transformers.

Plate and Filament Transformers 115 V., 50/60 Cycles

Table with columns: Cat. No., H.V., Rect. fil., Mtg. Fig., Net for Plate and Filament Transformers.

Plate Transformers 115VAC

Table with columns: Cat. No., Type, AC High Voltage, DC Ma, Mtg. Fig., Net for Plate Transformers.

Combined Plate and Filament Transformer

Table with columns: Cat. No., I.S. Application, Pri. V., High Voltage, Filament Windings, Net for Combined Plate and Filament Transformer.

* Mounting type LS-3.

2-Section Filter Choke

Table with columns: Cat. No., Type, Application, Inductance, DC Ma, Mtg. Fig., Net for 2-Section Filter Choke.

UTC AUDIO and POWER EQUIPMENT SPECIAL SERIES

Filter, Swinging and Audio Chokes

Table with columns: * Audio, † P.P. Audio C.T., § Swinging, All others are filter types. Cat. No., Type, Henrys, Ma, Ohms, Insul., Mtg. Fig., Net.

Single-Secondary Filament Transformers

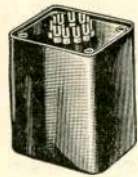
Table with columns: All pr. tapped 105-115 volts 50/60 cycles. Cat. No., Type, Sec. (CT), Amps., Insul., Mtg. Fig., Net.

Multiple-Secondary Filament Transformers

Table with columns: Primary tapped 105-115 volts, 50/60 cycles. Insulation, 3000 volts, except S-71, 10,000 volts and S-72, 5000 volts. In G-5 case except *G-7 case. Cat. No., Type, Fil. 1, Fil. 2, Fil. 3, Net.

Universal Modulation Transformers

Table with columns: Cat. No., Type, Audio Power, Mtg. Fig., Net for Universal Modulation Transformers.



Type A

Ultra Compact High Fidelity Audios

Table with columns: Maximum level plus 10 DB. Excellent shielding. Top or bottom mounting; size 1 1/2" x 1 1/2" x 2". Cat. No., Type, Pri. Imp., Sec. Imp., Net.

* Extra shielding.

Audio Choke. Type A30. 300 hy. at 2 ma., 6,000 ohms DC, 75 hy. at 4 ma.: 1500 ohms DC, inductance with no DC 450 hy. Cat. No. 13-100 Net Price \$5.88

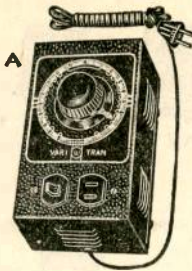
For Faster Service Use the Catalog Numbers When Ordering

U T C - VARIMATCH TRANSFORMERS

Varipower Autoformers

These units are designed to serve three functions, namely, to effect reduced power for transmitter operation, to take care of line voltage variations from 95 to 130 volts, and to permit minor voltage variation from other transformers. Taps are provided at 55, 75, 95, 100, 105, 110, 115, 120, 125, and 130 volts. Output voltages from 0 to 130 volts in 5 volt steps can be obtained.

Cat. No.	Type	Rating	Net
13-298	VA-1	150 watt	\$5.88
13-299	VA-2	250 watt	9.60
13-300	VA-3	500 watt	10.29
13-301	VA-4	1,000 watt	14.70
13-302	VA-5	2,000 watt	21.17



Type RC

Varimatch Modulation Units

The Varimatch transformer will not only match PRESENT available modulator tubes, but any tube that may be released at a FUTURE date. These transformers will also match the line impedance output of PA or similar amplifiers direct to the Class C tubes.

Cat. No.	Cap. Audio	Will Modulate	Mtg. Fig.	Net
13-287	CVM-0	12	25 watts RC-100	\$5.00
13-288	CVM-1	30	60 watts RC-125	8.23
13-289	CVM-2	60	120 watts RC-150	12.05
13-290	CVM-3	125	250 watts RC-152	17.64
13-291	CVM-4	300	600 watts RC-175	29.40
13-292	CVM-5	600	1 KW	67.62

The secondaries of all Varimatch transformers are designed to carry the Class C plate current.

Varimatch Driver Transformers

Cat. No.	Type	From Plates	To Grids	Class	Mtg. Fig.	Net
13-293	CG-51AX	*46, *61L6, *45, *59, *2A3, *49	46, 59	B	RC-87	\$6.17
		*37, *76, *6C6, *6C5, *30	*19, 79, *19			
13-294	CG-53AX	*2A5, *42, *45, 42, 45, 50, 59	45, 2A5, 42, 210, 801, RK18	AB		
		2A3 or 6L6	35T, 800, 838, 203A, 50T, 35T	B	RC-112	7.35
13-295	CG-59AX	500, 200 or 50 ohm line to P.P. Par, 2A3	805, 838, 203A, 800, RK18, 801	B	RC-112	7.35
13-296	CG-238AX	45, 50, 59, 6L6, 100T, 845	P.P. Par, 805, 838, 203A	B	RC-150	18.92
13-297	CG-512	500, 200 or 50 Ohm to	250T, HF200, 250T, HF300, HF200 or 849	B	RC-150	17.64

* Single tubes. All others push pull.

(A) Varitran Control Units

Provides continuously variable output voltage, using a sliding contact riding over the turns of an autotransformer; 115-volt input, 0-130 volts continuously variable output. Complete with cord, plug, and switch. For motor control, heat control, rectifier control, light control, line voltage control.

Cat. No.	Type	Watts	Amps	Size	Net
13-046	V-0	230	2.0	4 1/2" x 6 1/2" x 4 1/2"	\$11.27
13-047	V-1	570	5.0	4 1/2" x 8" x 3 1/2"	17.15
13-048	V-1-M*	570	5.0	4 1/2" x 9 1/2" x 3 1/2"	28.42
13-049	V-2	570	5.0	4 1/2" x 7 1/2" x 3 1/2"	14.70
13-050	V-3	850	7.5	4 1/2" x 7 1/2" x 3 1/2"	21.56
13-051	V-4	1250	11.0	6 1/2" x 10 1/2" x 5"	31.36

(B) Sub Ouncer Units

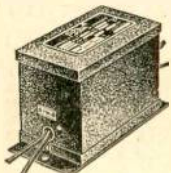
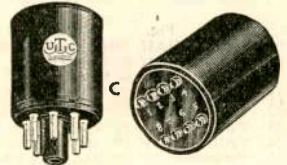
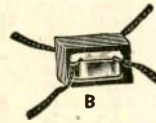
For use in hearing aids, vest pocket radios and midget devices.

Cat. No.	Type	Application	Pri. Imp.	Pri. DC	Sec. Imp.	Net
13-082	SO-1	Input	200, 50	0	250M, 62.5M	\$3.29
13-083	SO-2	Interstage, 1:3	10,000	0	90M	3.29
13-084	SO-3	Plate to Line	10M, 25M	3, 1.5MA	200, 500	3.29
13-085	SO-4	Output	30,000	1 MA	50	3.29
13-086	SO-5	Reactor 50 hy. at 1 MA. DC; 3000 ohms DC res.				3.00

(C) Ouncer and Plug-In Audio Units

Ideal for hearing-aid, aircraft, glider, portable, concealed service and other applications. Overall dimensions 1 1/2" diam. by 1 1/2", including lugs. Weight about one ounce. Mounting by two screws on 1 1/2" centers. Units not carrying DC have flat response 40-15,000 cycles; units with DC in primary (and 0-14 & 0-15) are for voice frequencies 150 to 4,000 cycles. Max. level 0 db. 200-ohm balanced winding may be used for 250-ohm service. Plug-in units are identical in characteristics with Ouncers; submersion-proof design; fit standard octal sockets; 1 1/2" diam., 1 1/2" above socket.

Cat. No.	Net Ea.	Ouncer Type	Application	Pri. Imp.	Sec. Imp.	Plug-In Units Type	Cat. No.	Net Ea.
13-052	\$7.95	0-1	Mike, pickup or line to 1 grid	50, 200/250, 500/600	50,000	P-1	13-067	\$8.70
13-053	7.95	0-2	Mike, pickup or line to 2 grids	50, 200/250, 500/600	50,000	P-2	13-068	8.70
13-054	7.20	0-3	Dynamic mike to 1 grid	7.5/30	50,000	P-3	13-069	7.95
13-055	6.30	0-4	Single plate to 1 grid	15,000	60,000	P-4	13-070	7.20
13-056	6.30	0-5	Single plate to 1 grid, DC in Pri.	15,000	60,000	P-5	13-071	7.20
13-057	7.20	0-6	Single plate to 2 grids	15,000	95,000	P-6	13-072	7.95
13-058	7.20	0-7	Single plate to 2 grids, DC in Pri.	15,000	95,000	P-7	13-073	7.95
13-059	7.95	0-8	Single plate to line	15,000	50, 200/250, 500/600	P-8	13-074	8.70
13-060	7.95	0-9	Single plate to line, DC in Pri.	15,000	50, 200/250, 500/600	P-9	13-075	8.70
13-061	7.95	0-10	Push pull plates to line	3000 P. to P.	50, 200/250, 500/600	P-10	13-076	8.70
13-062	7.95	0-11	Crystal mike or pick-up to line	50,000	50, 200/250, 500/600	P-11	13-077	8.70
13-063	7.20	0-12	Mixing and matching	50, 200/250	50, 200/250, 500/600	P-12	13-078	7.95
13-064	5.70	0-13	Reactor, 200 Hys.—no DC.; 50 Hys.—2Ma. DC 6000 ohms	200		P-13	13-079	6.30
13-065	7.95	0-14	50:1 mike or line to 1 grid	200	1 megohm	P-14	13-080	8.70
13-066	7.95	0-15	10:1 single plate to 1 grid	15,000	1 megohm	P-15	13-081	8.70



Type 1

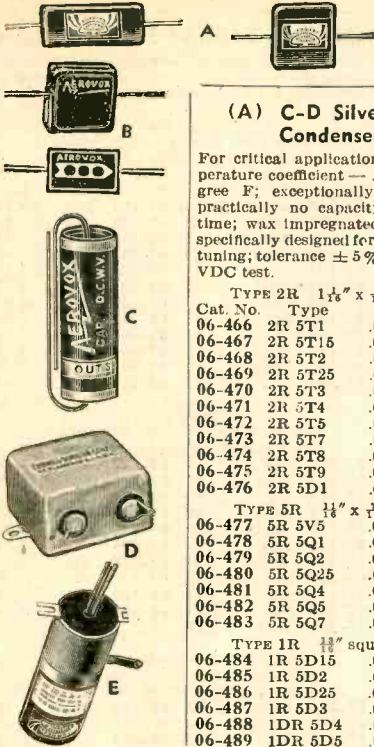
Type 2

SOLA Constant Voltage Transformers

Maintain constant output voltage within 1% on 95-125 volt, 60 cycle single-phase operation. Type 1 is for use with commercial equipment. Type 2 has ventilated end bell housing with input cord and plug and standard receptacle. Type 22 is similar to Type 2 but with knockout for conduit and BX connection. Type 3 is standard ventilated housing for 160-600 VA units. Type 4 is ventilated housing for 650-2300 VA units.

Cat. No.	Type	Mtg. Style	Volt-Amp.	Output Volts	Net Ea.
14-551	30488	1	15	6.0	\$15.00
14-552	30498	1	15	115.0	15.00
14-553	30804	2	30	115.0	17.00
14-554	30805	2	60	115.0	24.00
14-555	30806	2	120	115.0	32.00
14-556	30885	22	60	115.0	24.00
14-557	30886	22	120	115.0	32.00
14-558	30807	3	250	115.0	52.00
14-559	30808	3	500	115.0	75.00
14-560	30809	4	1000	115.0	125.00

The Radio Shack Can Fill Your Industrial Transformer Requirements



(A) C-D Silver Mica Condensers

For critical applications; low temperature coefficient — .0022 per degree F; exceptionally high "Q"; practically no capacity drift with time; wax impregnated externally; specifically designed for push-button tuning; tolerance ± 5%; 1000 volts VDC test.

Table with columns: Cat. No., Type, Mfd., Net. Lists various models like 06-466, 06-467, 06-468, etc., under different size categories.

(A) C-D Molded Mica Receiving Capacitors

Ideal for use as padding units, plate blocking, grid stop, RF bypass and tuned filter capacitors. *300 volts DC working. 600 volts DC test.

Table with columns: Cat. No., Type, Mfd., Net. Lists models like 06-435, 06-436, 06-437, etc., under categories like TYPE 5W, TYPE 1W, TYPE 1D.

(E) Type EZ Cardboard-tube Electrolytics

The most practical all-around replacement capacitor available. Has mounting feet for upright mounting and strap for horizontal mounting.

Table with columns: Cat. No., Cap., D.C., W.V., D x L, Net. Lists various electrolytic capacitor models and their specifications.

AEROVOX

(B) Silvered Mica Capacitors

For critical applications; low temperature coefficient — .0022 per degree F; exceptionally high "Q"; practically no capacity drift with time; wax impregnated externally; specifically designed for push-button tuning; tolerance ± 5%; 1,000 volt DC test; size 3/4 square.

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 07-278, 07-279, 07-280, etc.

Midget Size

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists midget size models like 07-285, 07-286, 07-287, etc.

(B) Type 1467 Mica Capacitors

Compact, size 1/4 square; provided with wire leads; 1000 volts DC test—500 volts DC working.

Table with columns: Cat. No., Cap., Mfd., Net, Cat. No., Cap., Mfd., Net. Lists models like 07-111, 07-112, 07-113, etc.

(B) Type 1468 Mica Capacitors

Midget size 1/4 x 3/8 x 1/8; provided with wire leads; 1000 volts DC test—500 volts DC working.

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 07-123, 07-124, 07-125, etc.

(D) Type DYR Metal Shell C-D Capacitors

Non-inductive by-pass units impregnated and filled with Dykanol "A" and sealed in non-corrosive cases with leak-proof screw-lug terminals. Suitable for RF and AF bypass, audio frequency coupling, and AC circuits. Will stand immersion in hot salt water; hence are desirable for marine, aircraft and tropical service.

Table with columns: 600 V.D.C. WORKING, Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 06-351, 06-352, 06-353, etc.

C-D Type DT Tubulars

A compact and dependable non-inductive condenser that is oil-saturated and wax-impregnated. Is moisture-proof and has a low power factor. Wire leads are soldered and firmly anchored.

Table with columns: 400 VOLTS DC WORKING, Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 06-244, 06-245, 06-246, etc.

TRIPLE SEPARATE-SECTION UNITS*

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 06-203, 06-204, 06-205, etc.

QUADRUPLE COMMON-NEGATIVE UNITS

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 06-212, 06-213, 06-214, etc.

QUADRUPLE SEPARATE-SECTION UNITS*

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 06-218, 06-219, 06-220, etc.

(C) Tubular Paper Capacitors

These Aerovox cartridge capacitors are especially desirable for use where high grade units are required at low cost. They are compact, non-inductively wound, and sealed in wax-impregnated paper tubes with wax-filled ends for longer life and protection against moisture.

Table with columns: Cat. No., Mfd., Net, Cat. No., Mfd., Net. Lists models like 07-304, 07-305, 07-306, etc., under categories like TYPE 484-400 VOLT, TYPE 684-600 VOLT, TYPE 1084-1000 VOLT.



"Dividohm" Adjustable Resistors

Resistance wire is wound over porcelain core. Vitreous enamel covers the surface and protects the unit against both mechanical and electrical injury.

Table with columns for resistance values (10, 25, 50, 75 WATT) and stock ranges. Includes a sub-table for available stock ranges.

Table listing Ohmite resistor models (09-154 to 09-178) with their specifications, prices, and stock availability.

Table listing Ohmite resistor models (09-120 to 09-128) with their specifications and prices.

Table listing Ohmite resistor models (09-105 to 09-110) with their specifications and prices.

Table listing Ohmite resistor models (09-198 to 09-199) with their specifications and prices.

Table listing Ohmite resistor models (09-101 to 09-104) with their specifications and prices.



Parasitic Suppressor

The model P300 suppressor is designed to prevent unwanted ultra high frequency parasitic oscillations...

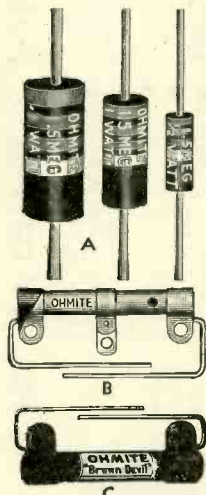


Table (A) 'Little Devil' Molded Composition Resistors. Includes a table of resistance values and a table of physical dimensions.

Ohmite Ohm's Law Calculator. Includes an image of the calculator and text describing its use for solving Ohm's law formulae.

Table (B) 10-Watt Center-tapped Resistors. Includes a table of resistance values and a table of physical dimensions.

Table (C) 'Brown Devil' Vitreous Enameled Resistors. Includes a table of resistance values and a table of physical dimensions.

(A) New Astatic "Cardinal" Mike

CRYSTAL — DYNAMIC

A compact, versatile, economical new model microphone available in both crystal or dynamic models whose performance compares favorably with many higher priced models. Case is die cast and finished in bright gold. Dark brown plastic base is available separately. Wide-range response, 30-10,000 c.p.s.; high output level. May be used on floor stand, desk stand, or as hand mike. Adaptable to standard AC or DC circuits. Furnished with 15-ft. cable.

Cat. No.	Type	Load	Output	Net Price
20-010	CX*	5 Meg.	-50 db.	\$5.73
20-011	CX-1†	5 Meg.	-50 db.	5.73
20-012	CD5	500 ohms	-62 db.	11.47
20-013	CDH	5 Meg.	-50 db.	11.47

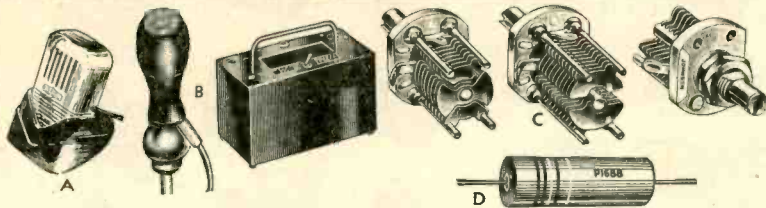
* Model CX smooth response 30-10,000 c.p.s.
† Model CX-1 rising characteristic between 1500 and 5500 c.p.s. speech range.

Cat. No. 20-014 Base sold separately. Net Price 59c

(B) Tru-sonic Model C-1 Microphone

Operating on a truly unique principle, different from that of any other microphone available today, performance of the Stephens Model C-1 is the outstanding microphone development of recent years. Many unequalled features due to utilization of phase-modulated crystal-controlled carrier frequency with remotely located oscillator/demodulator. Head operates on principle of minute capacity changes that produce electrical energy. Absolutely flat response throughout entire audio range. Small size, 1 x 1 1/2" pickup, reduces acoustic interference pattern, permits more freedom of movement and placement. Operated directly into line. Superior signal-to-noise ratio. No polarized voltage on diaphragm, permitting close spacing and high pressure sensitivity. High output level — 10 db. Lightweight and rugged to stand unusual abuse. Freedom from "bloops" and "blops" in close talking. Non-microphonic because oscillator/demodulator is removed from operating area. Diaphragm diameter is 1/2", minimizing phase cancellations at audible frequencies. Output impedance 200 ohms. Operates on 110-120 volts AC. Pickup and demodulator carried in 8 1/2 x 9 1/2 x 7 1/2" leatherette case with 30' coax cable, 16' shielded cable, AC cord, and all fittings. Cat. No. 20-099 C-1 Microphone system as above. Net Price \$290.00

LATE RELEASES of NEW PRODUCTS



(C) Johnson Miniature Variable Capacitors

The smallest variable built, these new Johnson miniature capacitors are ideal for most assemblies. 1/2" wide x 3/8" high overall; depth behind panel ranges from 3/16" for smallest types to 1 1/4" for largest capacity value type. Single-hole mounting, flats on mounting prevent turning. Beryllium copper contact spring. Split sleeve rotor bearing — no wobble to shaft; steatite end frame. Nickel plate finish. Voltage breakdown 750 volts r.m.s. at 210 mc. 0.15" spacing.

Cat. No.	Type	SINGLE			Net Price
		Plates	Max. Mmf.	Min. Mmf.	
18-601	160-102	5	5.14	1.55	\$0.94
18-602	160-104	9	8.89	1.73	1.00
18-603	160-107	15	14.58	2.15	1.09
18-604	160-110	21	19.7	2.6	1.18
DIFFERENTIAL TYPE					
18-605	160-303	7	5.58	1.84	1.27
18-606	160-305	13	9.30	1.98	1.39
18-607	160-308	22	14.82	2.32	1.54
18-608	160-311	31	19.30	2.67	1.71
BUTTERFLY TYPE					
18-609	160-203	7	3.30	1.72	1.36
18-610	160-205	13	5.27	2.10	1.47
18-611	160-208	22	8.50	2.72	1.71
18-612	160-211	31	11.02	3.20	1.88

(D) Aerovox Duranite Molded Tubular Capacitors

Entirely new DURANITE provides permanent, non-varying, rock-hard casing with smooth, clean surface. Pigtail leads will not pull out or work loose. Moisture-proof, they stand up under extreme temperatures from sub-zero to 212° F. Temperature co-efficient of capacitance similar to wax and oil capacitors. Smaller dimensions than conventional tubulars.

P288 — 200 VDC W.					
Cat. No.	Mfd.	Net	Cat. No.	Mfd.	Net
07-401	.015	15c	07-404	.1	21c
07-402	.04	18c	07-405	.5	35c
07-403	.05	18c			
P488 — 400 VDC W.					
07-406	.006	15c	07-410	.05	18c
07-407	.01	15c	07-411	.1	21c
07-408	.02	15c	07-412	.25	26c
07-409	.03	18c			
P688 — 600 VDC W.					
07-413	.001	15c	07-420	.01	18c
07-414	.0015	15c	07-421	.02	18c
07-415	.002	15c	07-422	.03	21c
07-416	.003	15c	07-423	.04	21c
07-417	.004	15c	07-424	.05	24c
07-418	.005	15c	07-425	.1	26c
07-419	.006	15c			

RCA TEST RACK For Complete TV, FM and AM Testing

At last — to enable the up-to-date serviceman to keep abreast of the ever-changing requirements of modern servicing, RCA engineering has produced this invaluable equipment. Provides all the test equipment the serviceman needs to cope with complex service problems of all TV, FM, and AM receivers. The six RCA instruments furnished with the complete table rack are of the noted RCA quality, all are designed to do their job with the utmost convenience, precision, and completeness. 48 x 33 x 12 1/2" deep.

Cat. No. 32-035 Table Rack with 6 test units described below. Net Price \$1099.00
Cat. No. 32-036 RCA Table rack only. Net Price \$90.00

WV-95A Master Voltohmmyst

A foremost model of the famed RCA Voltohmmyst test instrument line. Range: AC volts, 0-1000 in 7 steps; DC volts, 0-1000 in six steps (11 megohms input resistance); flat 30-20,000 c.p.s.; 0-10 DC amps in 6 ranges; ohms 0-1000 megs in 6 ranges; minimum reading 1 microamp.; capacitance, 5 mmf. to 1000 mfd. with polarizing voltage on high. Operates on 105-125 volts, 50-60 cycles. 9 1/2 x 13 1/2 x 7 1/2". \$152.50
Cat. No. 32-005 Net Price

WR-59A TV Sweep Generator

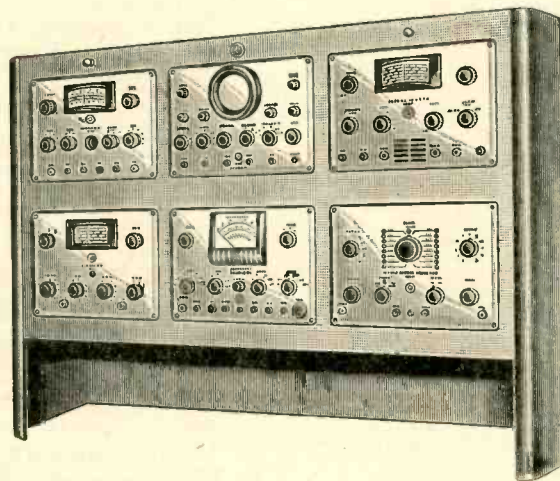
I.f./v.r. ranges: 0-10 Mc. video; 5-15 Mc. prewar plx i.f.; 20-30 Mc.; 20-30 Mc. postwar plx i.f. FM i.f. 10-11.5 Mc.; TV sound i.f. 20.25-22.25 Mc.; 25-40 Mc. spare; 13 TV r.f. channels. Output 1-175 volts RMS. Output impedance: r.f., matched with 300 ohms balanced to ground; i.f./v.r., cable terminated in 100 ohms. Power supply, 105-125 volts 50/60 cycles; consumption, 36 watts. Includes 1 WR-59A TV sweep unit, 1 power cord, 1 i.f./v.r. output cable, 1 r.f. output cable. 7 1/2 x 10 x 13 1/2". \$325.00
Cat. No. 32-041 Net Price

WR-39A Television Calibrator

A signal source, heterodyne detector, and crystal standard for producing all the standard RMA frequencies used in Television service. TV calibration, 19 Mc-120 Mc. in 4 bands, 170-240 Mc. in two bands. Tuning ratio 10:1. Output 1 volts R.M.S. min.; output impedance 100 ohms; output control range 100 to 1. Audio characteristics: gain, approximately 1000; output to speaker or phone jack; max. output .3 watts. Internal crystal standards. Complete with power cord and output cable, built-in speaker. Cat. No. 32-042 Net Price \$250.00

Model WR-67A Test Oscillator

Cat. No. 32-012 See full description of this instrument in Signal Generator Section, page 47, of this catalog. Net Price \$89.50



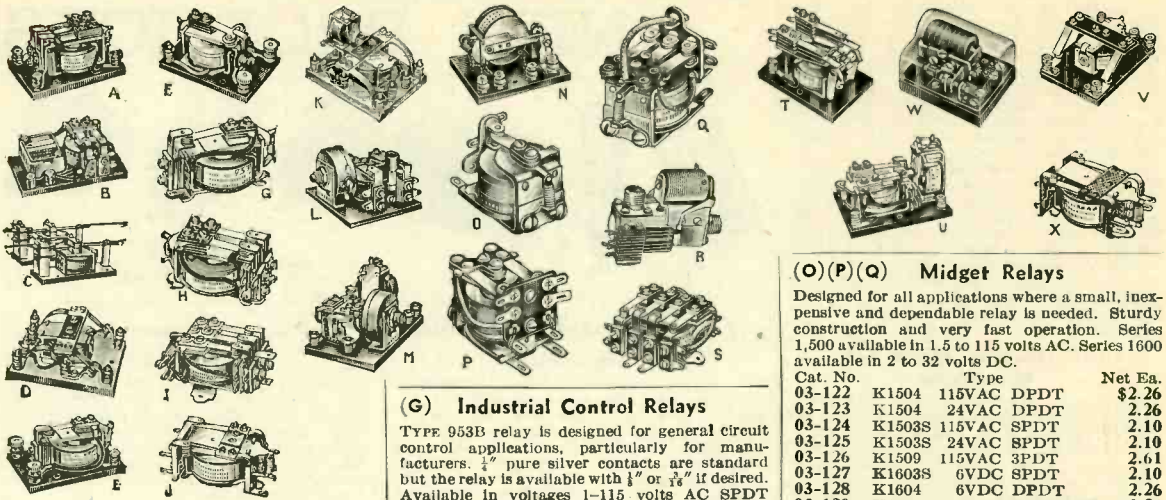
Model WA-54A Audio Oscillator

Cat. No. 32-015 See full description of this instrument on page 47 in Signal Generator Section of this catalog. Net Price \$152.50

WO-55A 3" Oscilloscope

An invaluable aid for servicing FM, and AM sets, an indispensable instrument for TV servicing. Ruled screen for measuring peak-to-peak voltages with internal voltage source for calibration. Vertical and horizontal sensitivity 1.4 volts per inch, peak-to-peak. Input impedance, 5 megohms and 55 mmf. Range up to 200 Kc. Operates on 105-125 volts, 50-60 cycles. Lightweight, uses miniature tubes to effect economy of test panel space, 9 1/2 x 13 1/2 x 7 1/2". \$129.50
Cat. No. 32-028 Net Price

ADVANCE RELAYS



(A) Keying Relay
 Safe operation up to 5,000 volts is assured by use of two SPST switches in series; $\frac{1}{2}$ " pure silver contacts in heavy phosphor bronze spring leaves; heavy-duty magnet coil and strong return spring provide for exceptional keying speeds. Size $3\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ ". Binding posts for coil and line connections.

Cat. No.	Type	Net Ea.
03-101	101K 6 v. AC	\$3.62
03-102	101K 115 v. AC	3.62
03-103	201K 110 v. DC	3.62

(B) Time Delay Relay
 Series 300 normally open thermostat. Particularly suited to preheat control for tube filaments, this unit has many other uses; adjustable for delay periods of 10 seconds to one minute; timing is accurate and relay makes or breaks without hesitation or chattering; $\frac{1}{2}$ " pure silver contacts handle 30A at 6 volts to 10A at 110 volts.
 Operates on 110 volts AC;

Cat. No.	Type	Net Ea.
03-104	301B SPST N/O	\$4.26
03-105	304B DPDT	5.00
03-106	305B DPST N/O	5.00
03-107	306B DPST N/C	5.55

Normally Closed Thermostat
 Cat. No. 03-108 Type 354B DPDT 115 volt.AC. Net Price \$5.00

(C) Spaced Antenna Relays
 The new type 2,300, used in pairs, provides the highest efficiency in transmission line switching. The spacing between contact assembly and coil, and between contacts, allows high loading of RF and will, under proper conditions, handle any load up to 1KW and is also ideal for other RF applications such as diathermy, etc. Standard coils are wound for 110 volts AC, 50-60 cycles.
 Cat. No. 03-109 Net Price \$4.69

(D) Antenna Relays
 The type 400 relay is ideal for transmitting purposes where high radio frequency is being handled. The contact combination is DPDT using $\frac{1}{2}$ " pure silver points rated at 10A on 110 volts AC non-inductive loads. 115 volt AC coils. Size $1\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{1}{2}$ ".
 Cat. No. 03-110 Net Price \$6.37

(E) 20 Ampere Relay
 Type 951C is an exceptionally sturdy power transfer relay with $\frac{3}{8}$ " pure silver contacts rated at 20 amperes on 110 volts AC non-inductive loads; SPST circuit, 6-volt DC coil.
 Cat. No. 03-111 Net Price \$4.27

(F) 30 Ampere Relay
 Type 961C is constructed with two sets of $\frac{3}{8}$ " silver contacts allowing for greater capacity and a rating of 30 amperes on 110 volts AC non-inductive loads. SPST circuit, 6 volt DC coil.
 Cat. No. 03-112 Net Price \$4.98

(G) Industrial Control Relays
 TYPE 953B relay is designed for general circuit control applications, particularly for manufacturers. $\frac{1}{2}$ " pure silver contacts are standard but the relay is available with $\frac{1}{4}$ " or $\frac{3}{8}$ " if desired. Available in voltages 1-115 volts AC SPDT circuit. 115 volts AC coils.
 Cat. No. 03-113 Net Price \$4.29

(H) TYPE 968B is designed expressly for use in industrial applications - air conditioning, lighting and power transfer systems. DPST NC with $\frac{1}{2}$ " contacts. 115 volts AC coils.
 Cat. No. 03-114 Net Price \$3.36

(J) TYPE 979B relay is a 3PDT unit with highly efficient AC coils requiring 6 watts may be placed in continuous service without danger of overheating. $\frac{1}{2}$ " silver contacts. 115 volts AC coils.
 Cat. No. 03-115 Net Price \$4.47

(J) Midget Type Ceramic Insulated
 This unit is a compact DPDT ceramic-insulated relay especially designed for aircraft, marine, mobile and portable radio equipment. To handle RF power safely, high-dielectric "Ceramic Steatite" insulation is used throughout and $\frac{1}{2}$ " pure silver contacts are adequately spaced.
 Cat. No. 03-116 Type 1000 10a 115 volt AC. Net Price \$5.33
 Cat. No. 03-117 Type 2000 10a 6 volts DC. Net Price \$5.33

(K) Latching Antenna Relay— Electrical Reset
 With the Type 400M relay it is possible to transmit and receive without power consumption in the relay coils. A momentary impulse changes the antenna and provides quiet operation and positive contact in either position. DPDT contacts are $\frac{1}{2}$ " pure silver rated at 10A on 110 volts AC non-inductive loads. 115-volt AC coils.
 Cat. No. 03-118 Net Price \$8.41

(L) Overload Relay Manual Reset
 The Type 700 relay is an excellent safety device for various types of electronic apparatus to protect equipment against excessive currents. When current passing through the coil reaches a predetermined value, within the prescribed range, the armature of the relay is pulled in which snaps open the contacts which are thus locked open mechanically until reset by the hand lever. Type 700 comes in two styles: type A which allows the relay to close on any current from 250 to 500 mills and type B for any setting between 500 and 1,000 mills.
 Cat. No. 03-119 Net Price \$6.57

(M) Overload Relay Electrical Reset
 Type 750 relay is equipped with a variable potentiometer that may be easily adjusted for any desired overload current within the prescribed range. It is available in two styles: type A for any current setting between 250 and 500 mills and type B for any setting from 500 to 1,000 mills.
 Cat. No. 03-120 Net Price \$8.54

(N) Electronic Relay
 The Type 850 relay is a sensitive DC relay for use in electronic tube circuits. Coils are obtainable in resistances from 1500 to 20,000 ohms. Positive, dependable operation may be obtained on as little as 12 milliwatts. SPDT combination, silver contacts rated at 1.5 amp. on 110 volts AC non-inductive loads.
 Cat. No. 03-121 Net Price \$4.63

(O)(P)(Q) Midget Relays
 Designed for all applications where a small, inexpensive and dependable relay is needed. Sturdy construction and very fast operation. Series 1,500 available in 1.5 to 115 volts AC. Series 1600 available in 2 to 32 volts DC.

Cat. No.	Type	Net Ea.
03-122	K1504 115VAC DPDT	\$2.26
03-123	K1504 24VAC DPDT	2.26
03-124	K1503S 115VAC SPDT	2.10
03-125	K1503S 24VAC SPDT	2.10
03-126	K1509 115VAC 3PDT	2.61
03-127	K1603S 6VDC SPDT	2.10
03-128	K1604 6VDC DPDT	2.26
03-129	K1603 6VDC SPDT-DM	2.26

(R) Coaxial Relays
 For use with 52 or 75 ohm RG coaxial cables Max. rating 88 watts at 100 mc. Power consumption type 7200 3-4 va; type 8200.

Cat. No.	Type	Net Ea.
03-130	7200 115VAC	\$8.08
03-131	7204 115VAC	10.03
03-132	8200 6VDC	8.08

(S) Industrial Control Relay
 Type 9813B four-pole double-throw relay was designed to meet the need for a compact and small size, positive and reliable four pole relay. Has $\frac{1}{2}$ " pure silver contacts.
 Cat. No. 03-133 115VAC Net Price \$6.40

(T) Impulse Relay
 Series 900 relay has innumerable applications and provides great flexibility in new developments and new circuits. Is small in size but will give positive, dependable service. Obtainable in all AC and DC voltages.

Cat. No.	Type	Net Price
03-134	Type 904B DPDT	115VAC. \$7.47
03-135	Type 904B DPDT	24VAC. \$7.47

Mechanically Locking Electrically Reset Relays
 Series 600 relay is especially good for applications where it is not practical to have the holding coil in constant service. When ordering this type be sure to specify input voltage and whether for AC or DC operation.

Cat. No.	Type	Net Price
03-136	Type 604B DPDT	115VAC. \$6.21

(V) Industrial Relays
 This series 450 relay is available for operation on 1 to 115 volts AC or 2 to 40 volts DC. Has $\frac{1}{2}$ " silver contacts rated at 20 amperes on 110 volts non-inductive loads.

Cat. No.	Type	Net Price
03-137	Type 454 DPDT	115 VAC. \$4.53

(W) Ultra-sensitive DC Relay
 Type 1200 offers the last word in modern design— combining sensitivity, durability, compactness and fine appearance. Has moulded bakelite base, clear plastic cover and a counter-balanced armature makes operation possible in any position— withstanding vibration up to 10 G's. Contacts SPDT rated at 1 ampere at 110 volts AC non-inductive load. Supplied in coil resistances from 1 ohm to 30,000 ohms.

Cat. No.	Type	Net Price
03-138	8700 ohms	\$5.72
03-139	20000 ohms	6.43

(X) Small Bakelite-insulated Relay
 Series 100M and 200M are similar in design to the 1,000 series relays, except for the insulation which is bakelite, and are available for operation on any AC voltage from 1-115 and any DC voltage from 2-40 (200 series).

Cat. No.	Type	Net Price
03-140	Type 104AM DPDT	115VAC \$3.62
03-141	Type 204AM DPDT	6VDC \$3.62

SWITCHES TAP - ROTARY - TOGGLE - KNIFE - PUSH-BUTTON

(A) Ohmite Power Switches

New Ohmite tap switches are high-amperage load-break multi-point selectors particularly designed for alternating current use. Each switch is a non-shorting, single-pole, rotary, multi-position unit. Several switches can be connected mechanically to form multi-pole assemblies. Silver-to-silver contact, compact, all-enclosed, ceramic construction. Many contacts, convenient terminals, "Slow-Break" Action for Alternating current, low contact resistance, self-cleaning contacts, back-of-panel mounting, high current ratings, non-shorting type. All ratings for alternating current non-inductive load. Net price does not include knob.

MODEL 111 TAP SWITCH

No. of Taps	*Single Unit		†2 In Tandem	
	Cat. No.	Net	Cat. No.	Net
8	05-201	\$2.14		
6	05-202	2.07		
4	05-203	1.99	05-205	\$7.80
2	05-204	1.99	05-206	7.80

* Depth behind panel 1 1/4". † Depth behind panel 2 1/4".

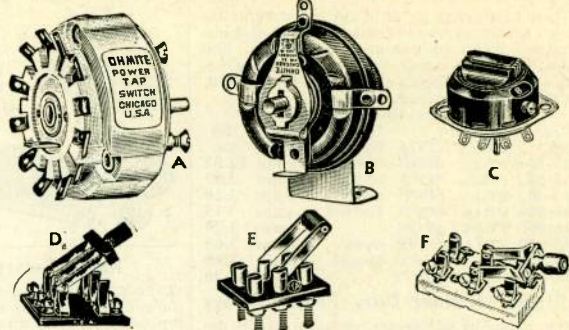
No. Taps	*Single Unit		†2 In Tandem		‡3 In Tandem	
	Cat. No.	Net	Cat. No.	Net	Cat. No.	Net
12	05-207	\$5.72	05-218	\$15.45	05-229	\$22.93
11	05-208	5.72	05-219	15.45	05-230	22.93
10	05-209	5.55	05-220	15.06	05-231	22.36
9	05-210	5.55	05-221	15.06	05-232	22.36
8	05-211	5.35	05-222	14.68	05-233	21.79
7	05-212	5.35	05-223	14.68	05-234	21.79
6	05-213	5.17	05-224	14.29	05-235	21.22
5	05-214	5.17	05-225	14.29	05-236	21.22
4	05-215	4.97	05-226	13.92	05-237	20.64
3	05-216	4.97	05-227	13.92	05-238	20.64
2	05-217	4.97	05-228	13.92	05-239	20.64

* Depth behind panel 1 1/4". † Depth behind panel 4 1/4".
‡ Depth behind panel 6 1/4".

(B) OHMITE BC-3 Transmitter Band Change

All-purpose high-voltage switch provides instant, easy change from one frequency to another by front-of-panel knob control. Porcelain vitreous enamel insulation; low-resistance contacts; suitable for circuits up to 1 kw. rating. Supplied with knob and mounting bracket. **Cat. No. 05-240 Net Price \$2.52**

ON-OFF INDICATING PLATES. Toggle switch plates; rigid, die-cast plate with statuary bronze finish. 3/4" hole.
Cat. No. 05-293 Net Each 2c 10 for 15c
Etched and polished aluminum; for toggle or rotary switch.
Cat. No. 05-294 Net Each 11c 10 for 98c



(C) Amphenol Tap Change Switch

Eight-position, single-pole, continuously-rotating switch. White marks clearly legible. Set screw permits locking switch arm in position to prevent accidental change.
Cat. No. Type-Marking Net Ea.
05-050 36-1, numbered 1 to 8 53c
05-051 36-2, impedance 0 to 500

(D) ICA Bakelite Knife Switches

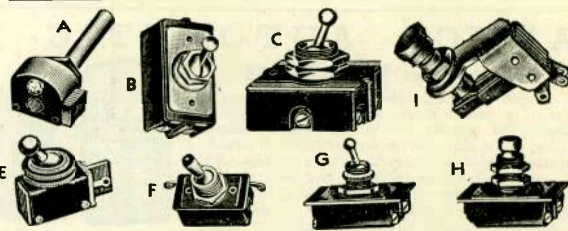
Brass hardware heavily nickel-plated. Mounted on black bakelite base.
Cat. No. Type Circuit Net
05-250 1216 SPST \$0.51
05-251 1217 SPDT 60c
05-252 1218 DPST 69c
05-253 1219 DPDT 81c
05-254 1360 3PST 1.11
05-255 1220 3PDT 1.20
05-256 1221 4PST 1.50
05-257 1222 4PDT 1.80
05-258 1364 5PDT 2.10

(F) Midget Porcelain Knife Switch

Ideal for experimental and test hook-ups. Brass hardware, nickel plated. Wet processed white porcelain base.
Cat. No. Circuit Net Ea.
05-040 SPST 13c
05-041 SPDT 16c
05-042 DPST 23c
05-043 DPDT 27c
05-044 DPDT 33c

(E) Panel Midget Knife Switches

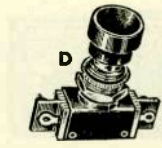
A highly compact, Bakelite-base, knife switch for panel mounting. All 1 1/4" long. SP types are 3/8" wide; DP types are 1" wide. Hardware brass, nickel plated.
Cat. No. Circuit Net Ea.
05-045 SPST 19c
05-046 SPDT 32c
05-047 DPST 40c
05-048 DPDT 38c



H&H SWITCHES

(A) Rotary Switches

Positive contact at 1 amp. 250 volts, 3 amps. 125 volts. Stem is 1 1/2" long; shank diam. 1/8" Lock nuts supplied. U, L, listed.
Cat. No. H&H Type Circuit Net Ea for
05-012 1561 SPST 28c \$2.52
05-013 1565 DPST 35c 3.15
05-014 1572 DPST 49c 4.68
05-015 1575 DPDT 56c 5.04



(D) H&H Momentary-Contact

Single push button gives both "On" and "Off" control. Rated at 3 amps., 250 volts; 6 amps., 125 volts. U, L, listed. Snap-on Bakelite button-cap; specify red or black cap when ordering. SPST.
Cat. No. 05-016 Net Each 56c 10 for \$5.04
Above push-button switches without Bakelite cap on metal actuator.
Cat. No. 05-017 Net Each 47c 10 for \$4.23

(E) H&H Toggle Switches

These toggle switches are approved by Underwriters laboratories to carry 3 amp. at 125 volts or 1 amp. at 250 volts. Two lock nuts included. All with 3/8" stem.
Cat. No. H&H Type Circuit Net Ea for
05-001 20994-A SPST 26c \$2.34
05-002 21350-B SPDT 32c 2.88
05-003 20902-AM DPST 50c 4.50
05-004 20905-Z DPDT 53c 4.77

(H) H&H Push Button Power Switch

A safety switch for transmitters; used in racks and cabinets; opens circuit when door is opened; DPST; 12 amps. at 125 volts. 1/8" shank.
Cat. No. 05-022 Net Price \$1.01

(B) Heavy-Duty Toggle Switch

Carries 20 amp at 125 volts or 1 1/2 HP. DPST, Bakelite body; screw terminals.
Cat. No. 05-018 Net Price \$2.23

(F) Bat-Handle Toggle Switches

All-Bakelite body, bat handle, lug terminals. 1/8" dia. mtg. shank. Takes 3 amps. at 250 volts; 6 amps. at 125 volts. All with 3/8" stem. UL listed.
Cat. No. H&H Type Circuit Net Ea for
05-005 81015 SPST 45c \$4.05
05-006 81021 SPDT 53c 4.99
05-007 81024 DPST 59c 5.29
05-008 81027 DPDT 69c 6.18

(C) H&H Neutral-Center Toggle

Heavy-duty DPDT 10 amp. at 125 volts. Screw terminals.
Cat. No. 05-019 Net Price \$3.51

(G) Power Toggle Switch

A heavy-duty toggle switch for use in transmitter circuits, motors, and appliances. SPST and DPST models are rated 6 amps. at 250 volts, 12 amps. at 125 volts SPDT rating, 3 amps., 250 volts, 6 amps., 125 volts. Screw terminals: 3/8" diam shank, 1/2" long With two lock nuts U, L, listed.
Cat. No. H&H Type Circuit Net Ea for
05-009 80607 SPST 50c \$4.50
05-010 80600 DPST 53c 4.77
05-011 80618 SPDT 53c 4.77

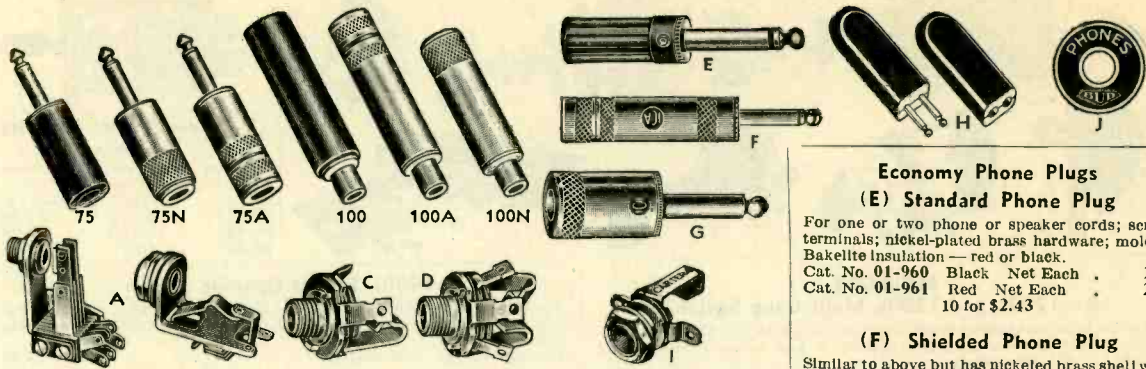
(D) H&H Momentary-Contact Two-Circuit Momentary-Contact

One circuit normally on and one normally off; may be connected for SPDT circuit. Rated 1 amp. at 125 volts. Metal, red or black Bakelite button.
Cat. No. 05-021 Net Price 50c 10 for \$4.50

(I) Mallory 2000 Single Push-button Switch

Ideal for applications requiring momentary or permanent contact. Many different circuit combinations available in locking or non-locking types. Excellent for use in meter circuits, and test panels. With knob and mounting hardware. "L" added to type number indicates locking.
Cat. No. Type Action Net
05-165 2001 SPST-make \$.76
05-166 2001-L SPST-make .76
05-167 2002 SPST-break .76
05-168 2002-L SPST-break .76
05-169 2003 SPDT .82
05-170 2003-L SPDT .82
05-171 2004 DPST-make 2 .94
05-172 2004-L DPST-make 2 .94
05-173 2005 DPST-break 2 .94
05-174 2005-L DPST-break 2 .94
05-175 2006 DPDT 1.15
05-176 2006-L DPDT 1.15
05-177 2007 DP-make 2 break 1 1.03
05-178 2007-L DP-make 2 break 1 1.03
05-179 2008 DPDT-make before break 1.29
05-180 2008-L DPDT-make before break 1.29

— JACKS and PLUGS —



Extension Type Jacks

Cat. No.	Type	Description	Net
01-883	100	Two-way Extension Jack (Fiber Shell) for No. 75 Phone Plug	\$0.76
01-884	100N	Two-way Extension Jack (Shielded One-piece Nickel Shell) for No. 75N Phone Plug	.97
01-885	100A	Two-way Extension Jack (Shielded Two-piece Nickel Shell) for No. 75A Phone Plug (with Built-in Cable Clamp)	1.35

Phone and Microphone Type Plugs

Cat. No.	Type	Description	Net
01-886	75	Two-way Phone Plug with Tie-cord Anchor (Phenolic Resin Shell)	\$0.38
01-887	75N	Two-way Phone Plug with Tie-cord Anchor (Shielded One-piece Nickel Shell)	.59
01-888	75A	Two-way Phone Plug with Tie-cord Anchor (Shielded Two-piece Nickel Shell) (with Built-in Cable Clamp)	.97
01-889	76	Three-way Microphone Plug (Phenolic Resin Shell)	.59
01-890	76A	Three-way Microphone Plug (Shielded Two-piece Nickel Shell) (with Built-in Cable Clamp)	1.15

Mallory Junior and Midget Jacks

(A) MALLORY JUNIOR JACKS — "Short Frame" jacks require only 1 1/4" space back of panel. Frame supports the spring stack at right angle with short spring. Mount in 1/2" hole in panel up to 1/2" thick. Take all standard Mallory plugs.

Cat. No.	Type	Net Ea.
01-867	701 — Open circuit	32c
01-868	702B — 3-circuit Takes Types 76, 76A plugs	44c
01-869	703 — Open circuit with extra "make" circuit	50c

(B) MALLORY MIDGET JACKS — Very compact with shorter frame and springs than the Junior Type above. Mount in 3/8" hole on panel up to 1/2" thick.

Cat. No.	Type	Net Ea.
01-870	A-2 — Shorting type; closed circuit	29c
01-871	A-2A — Transfer type; closed circuit	32c
01-872	A-3A — Closed circuit; makebreak	47c

MALLORY "INFANT" JACK TYPE A-1 — Smallest single-circuit jack made to fit standard plugs.

Cat. No.	Net Price	18c
Cat. No. 01-873	Net Price	18c
GROUNDING JACK TYPE GJ-1	— For grounding airplanes while refueling.	
Cat. No. 01-874	Net Price	26c

(C, D) Mallory SC Jacks

SC1A PHONE JACK — Equivalent of Signal Corps Jack No JK-34A. For plugs: Mallory No. 75, Western Electric No. 47A and 47B, Signal Corps Nos. PL47, PL48, PL55, PL148 and PL155.

Cat. No.	Net Price	32c
Cat. No. 01-881	Net Price	32c

SCA2B MICROPHONE JACK — Equivalent of Signal Corps Jack No. JK33A. For plugs: Western Electric No. 109 and Signal Corps Nos. PL46, PL68 and PL168.

Cat. No.	Net Price	38c
Cat. No. 01-882	Net Price	38c

Economy Phone Plugs

(E) Standard Phone Plug

For one or two phone or speaker cords; screw terminals; nickel-plated brass hardware; molded Bakelite insulation — red or black.

Cat. No. 01-960	Black	Net Each	27c
Cat. No. 01-961	Red	Net Each	27c
		10 for	\$2.43

(F) Shielded Phone Plug

Similar to above but has nicketed brass shell with gum rubber insulating bushing for cord.

Cat. No. 01-962	Net Each	49c	10 for \$4.41
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(G) Stubby Shielded Plug

Shielded, with metal-shell barrel 1" long. Screw connections

Cat No 01-963	Net Each	42c	10 for \$3.75
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Midget Phone Plug

Barrel 1" long, overall length 2 1/4". Solder lug connections.

Cat. No. 01-964	Black	Net Each	27c
Cat. No. 01-965	Black	10 for	\$2.43

(H) Walsco Miniature Jack and Plug

Ideal for hearing aids, speaker extensions, carbon mikes; two-conductor, army-type; molded case, needs no screws; 1 1/4" long.

Cat. No. 01-877	Plug	Net Price	24c
Cat. No. 01-878	Jack	Net Price	24c

(I) Midget Jacks

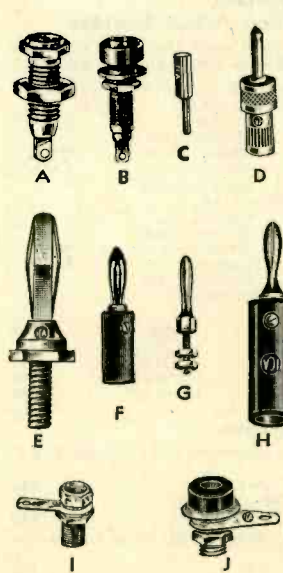
Compact size; require 3/8" mounting hole; Bakelite insulation.

Cat. No. 01-879	Open circuit	10 for	\$1.44
Net Each	16c		
Cat. No. 01-880	Closed circuit	10 for	\$1.71
Net Each	19c		

(J) Bud Jack and Switch Plates

Aluminum with polished letters on black enameled background. Outside diam. 1 1/4".

Cat. No.	Marking	Hole	Net
05-301	Microphone	1 1/4"	Each
05-302	Phones	1 1/4"	Each
05-303	On-Off	.475"	12c



(A) Plain Phone Tip Jacks

Made of nickel-plated brass. A strong spring assures perfect contact. Fits 1/2" mounting hole in panel up to 1/2" thick.

Cat. No. 01-808	Net Each	6c
10 for		54c

(B) Insulated Tip Jacks

For standard phone tips. Colored head 1/4" diam. New, improved springs hold phone tips very rigid.

Cat. No. 01-809	Black	10 for	80c
Cat. No. 01-810	Red		

Banana Plug or Tip Jack

Takes standard phone tips or banana type plugs. Plugs fit interchangeably. Fits 1/2" diam. hole in panel up to 1/2" thick.

Cat. No. 01-811	Black	10 for	99c
Cat. No. 01-812	Red		

(C) Standard Cord Tip

Fits standard tip jacks listed above. Length overall 1 1/8", shank diameter 1/4"

Cat. No. 01-830	10 for	12c
100 for		\$1.00

(D) Solderless Phone Tips

Lead wire is fastened securely by screw and nut connection. Two sizes.

Cat. No. 01-813	1 1/4" long	10 for	54c
Cat. No. 01-814	1 1/8" long		
Net Each	6c		

Insulated Solderless Phone Tip

Fits all standard tip jacks; insulated handle; 1 1/4" long, overall

Cat. No. 01-815	Red	10 for	90c
Cat. No. 01-816	Black		

(E) Banana Plugs

All-metal plugs, nickel-plated brass, complete with two plated nuts; 6-32 thread; 3/4" long.

Cat. No. 01-817	Net Each	7c
Per 10 60c	Per 100	\$5.40

(F) Insulated Banana Plugs

Set screw in side of insulated barrel secures wire. Barrel 1/2" long. 6-32 x 1/2" thread.

Cat. No. 01-818	Red	10 for	\$9.70
Cat. No. 01-819	Black		
Net Each	12c	10 for	\$1.08

(G) Split-Type Banana Plug

Non-insulated banana plug, split-type snugly fits standard banana jack; with nuts.

Cat. No. 01-820	Net Each	7c	
10 for	62c	100 for	\$5.60

(H) Insulated Split Banana Plug

As above but insulated barrel to match insulated jacks below; solderless connection; 1 1/8" overall; 1/2" plug.

Cat. No. 01-821	Black	10 for	\$1.07
Cat. No. 01-822	Red		
Net Each	12c	100 for	\$9.70

(I) Banana Plug Jack

Takes all standard banana jacks; made of brass, nickel plated; fits 1/2" hole.

Cat. No. 01-823	Net Each	4c	
10 for	81c	100 for	\$3.25

(J) Insulated Banana Jack

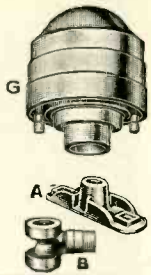
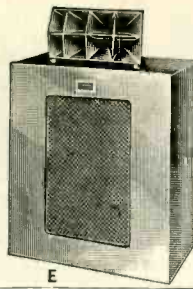
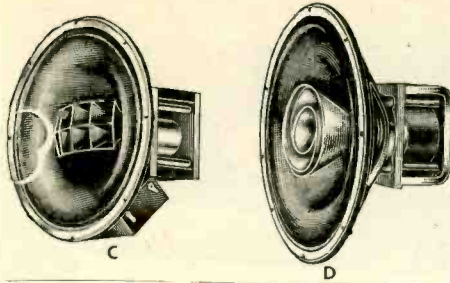
Take insulated banana plugs above; mount in 1/2" hole on panel up to 1/2" thick.

Cat. No. 01-824	Red	100 for	\$7.60
Cat. No. 01-825	Black		
Net Each	9c		

Tru-Sonic

REPRODUCERS - CABINETS REFLEX HORNS

University



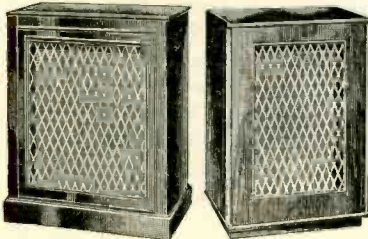
(C) TRU-SONIC Coaxial P-52A

A high-fidelity 15" coaxial speaker with cone-type low-frequency unit and multicellular type high-frequency unit and dividing unit, which delivers the low frequencies to the large cone. High frequencies are distributed throughout the entire listening area without loss of level. Widest possible angle of high frequency distribution is obtained by use of 8 cellular horns in a compact assembly. Input impedance 16 ohms; signal input 20 watts. Response is plus or minus 5 db. from 50 to 12,000 c.p.s. **\$120.54**
Cat. No. 31-303 Net Price

(D) P-52FR Co-Spiral Speaker

A newly designed 15" Co-Spiral Speaker embodying the Silver Spiral, a differential diffuser which accomplishes high-frequency dispersion with an almost 100 per cent spherical polar pattern of over 90°. Frequency range is from 40 to 14,000 c.p.s. The frequency characteristic has been calculated to attenuate record motor rumble below 70 c.p.s., and to emphasize a band in the "power" range around 500 c.p.s. "Presence" is accentuated by a rise at 2,300 c.p.s. High frequency "hash" is subdued by gradual roll-off from 8,000 c.p.s. 2½ pounds of Alnico 5 magnet. Power input 15 watts. Input impedance 16 ohms. **\$47.04**
Cat. No. 31-301 15" size. Net Price
Cat. No. 31-302 12" size. Net Price **\$41.16**

TRU-SONIC Speaker Cabinets



TYPE 52-SD — Period cabinet available in mahogany or bleached blonde. Superbly designed, distinctively modern, designed to fit in with quality furnishings. Rare woods finished by master craftsmen, and harmonizing metal grille. Approximate size, 35" x 24" x 17" deep. Will accommodate P-52HF. Separate 2-way reproducer system. **Net \$105.84**
Cat. No. 31-304 Cabinet only. Price

TYPE 52-D — Deluxe speaker cabinet available in mahogany or bleached blonde. Acoustically engineered for realizing the full possibilities of a high fidelity speaker, mechanically constructed for a superb furniture piece. Lined with sound-absorbing fabric, enclosed against dust. Release port beneath cone relieves back-pressure and reinforces the frontal wave. **\$76.44**
Cat. No. 31-307 Net Price

(F) University Reflex Horns

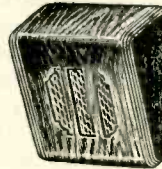
Compact units for small-space, weatherproof installations without sacrifice in quality performance. Fabricated of heavy metal with corrosion-resistant finish over all exposed parts, to withstand exposure, vibration, or wind. Rubber-damped rims eliminate mechanical resonance. Model GH, with 6½ ft. air column, has low frequency cutoff for fine music reproduction. LH has higher cutoff for general purpose work. PH serves for both speech and music. SMH is especially suited for high clarity speech reproduction. Complete with U mounting bracket, without driver unit.

Cat. No.	Mfr's. Type	Bell Dia.	Overall Length	Cutoff C.P.S.	Net. Ea.
31-404	GH	30"	25"	85	\$35.28
31-405	LH	25.5"	18.5"	120	26.17
31-406	PH	20"	15"	150	17.05
31-407	SMH	15.5"	12"	200	14.41

(E) P-52HF Separate 2-Way System

A sound-reproduction system that approaches perfection. The characteristics listed below combine to achieve a reproducer that lets a faint whisper be heard throughout the listening area, with balanced deep bass and highest overtones. Power input 20 watts; crossover frequency 800 c.p.s.; horizontal distribution angle 80°; vertical distribution angle 40°; 8 high frequency cells; combined field 6 lbs. Alnico 5; input impedance 16 ohms; cone resonance 55 cycles; diaphragm resonance 400 cycles; frequency response 30-16,000 c.p.s. plus or minus 5 db. **\$145.06**
Mfr's. only.
Cat. No. 31-305 Net Price
In Model 52U Cabinet. **\$188.16**
Cat. No. 31-306 Net Price

Standard RMS Baffles



These speaker baffles are recommended for indoor installation. When mounted on a wall they direct the sound to about ear level. Will improve most sound installations. Walnut veneer highly finished. Available to fit speaker sizes listed below.
Cat. No. 31-501 5-inch Net ea. **\$1.82**
31-502 6-inch **2.50**
31-503 8-inch **2.94**
31-504 10-inch **3.29**
31-505 12-inch **4.32**

DeLuxe 15" RMS Baffle

A heavy-duty baffle massively constructed of walnut; heavily reinforced throughout. Specifically designed for 15" speakers, its lustrous walnut wood finish, handsome, unique grille design and fine sound reproduction make it ideal for concert hall and large auditorium use. **\$11.67**
Cat. No. 31-506 Type DLS-12 Net Price

(G) Breakdown-Proof Driver Units

Permanent magnet (Alnico) dynamic type units. These models employ one-piece molded phenolic diaphragms which are immune to extreme temperatures and corrosion, and have good fatigue characteristics. Unique University design of diaphragm and throat give an excellent frequency characteristic. Voice coil mounted on duralumin band fastened to diaphragm for rigidity and good heat dissipation. Driver unit is built on unique "rim centering" principle to provide rigid assembly and a high conversion efficiency for size and weight. Misalignment of voice coil by shock or vibration is almost impossible.

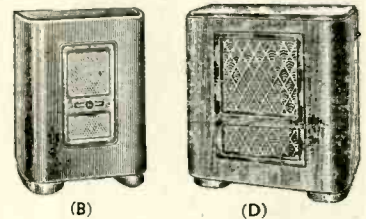
Model PAH has largest magnetic structure, therefore a higher conversion efficiency and better low-frequency response. MAH is recommended for power requirements not exceeding 12 watts. SAH and PAH are high power units.

Cat. No.	Mfr's. Type	Range C.P.S.	W. Ohms	Net. Rat. imp. Ea.
31-401	MA-25	90-6000	25	16 \$14.70
31-402	SA-HF	90-10,000	25	16 21.76
31-403	PAH	80-6000	25	16 29.10

(B) CONNECTOR TYPE 2YC — For connecting two driver units to any trumpet. **\$5.88**
Cat. No. 31-409 Net Price

(A) ADAPTER TYPE PMA — Attaches to any U bracket for mounting any trumpet on ½" pipe fittings. **88c**
Cat. No. 31-410 Net Price

Jensen Bass Reflex Cabinets



TYPE B — A moderately priced fine general purpose cabinet incorporating Jensen Bass Reflex designed for maximum acoustic performance. Instead of conventional plywood for outer walls and panels, these cabinets employ a new wood composition material. Framing is of heavy, solid lumber to give strength and rigidity. A spectacularly handsome over-all appearance, with baked-on tan color hammerlaid finish, trimmed with chromium and aluminum. Type B-81; 24" high; 18" wide; 9½" deep. Type B-121; 27" high; 24½" wide; 13½" deep. Type B-151; 32½" high; 27½" wide; 13½" deep.

Cat. No.	Mfrs. Type	Spkr. Size	Net. Ea.
31-045	B-81	8"	\$20.58
31-046	B-121	12"	29.08
31-047	B-151	15"	34.47


TYPE D — A truly deluxe cabinet in design and appearance. All hard woods are of selected striped walnut. Finish is natural walnut rubbed to a satin texture. Fundamentally designed to provide highest acoustic efficiency for Jensen coaxial and extended range speakers. Embodies Jensen Bass Reflex for maximum extension of low frequency response free from "boom" or resonance. Size is 27½" x 31½" x 13½".

Cat. No.	Mfrs. Type	For Spkr. Size	Net. Ea.
31-048	D121	12"	\$50.64
31-049	D151	15"	50.64

For high-fidelity phono systems you can build using some of the speakers listed here, see the amplifiers listed on page 98.

CLARKSTAN Sweep-frequency Transcription

Provides a brand new method of making instantaneous frequency response runs in testing play-back systems. With an oscilloscope, instantaneous response measurements are easily accomplished with only a few quick adjustments on the equalizer circuit. Also may be used with a high-quality playback system as a secondary sweep signal generator for testing audio amplifiers, loud speakers, microphones, etc. Frequency sweep range from 60 to 10,000 c.p.s. on 16" record, 70-10,000 c.p.s. on 12" record. Transcriptions are vinylite, 16" at 333 R.P.M.
Cat. No. 15-165 Type 100A. Net Each **\$15.00**
Cat. No. 15-166 Type 1000A. 12", for 78 R.P.M. 70-10,000 c.p.s. +1 db., crossover at 500 cps. Net Each **\$6.60**



THE ONLY WAY TO SELECT SOUND EQUIPMENT
IS BY AUDIO-COMPARISON IN THE RADIO SHACK

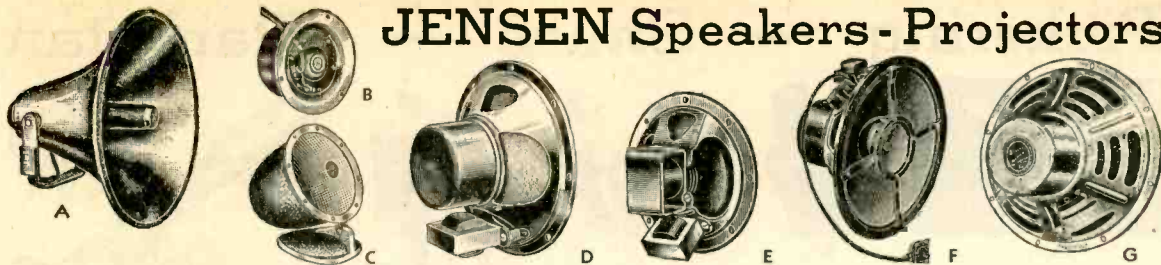
AUDIO COMPARATOR

For discriminating listeners who desire custom-built music reproduction systems, the Audio Comparator offers scientific, unbiased selection-by-comparison among scores of unit combinations. From one central control board, the Audio Comparator attendant can combine and operate every loudspeaker, amplifier, tuner, and pickup in the entire room. A flip of the switch lets your ear compare—to give but one example—a variety of 6-, 8-, 10-, 12-, and 15-inch speakers under the same set of pickup-amplifier-acoustic conditions! In this manner the Audio Comparator eliminates guess-work and prejudice. Your own critical ear is the judge and jury.

OVER 4000 COMBINATIONS

Yes, more than 4000 basic equipment combinations are effortlessly and instantly made on the Audio Comparator control board. Designed and built by Radio Shack engineers in the Fall of 1947, this amazing "selection-by-comparison" demonstrator is rapidly becoming the most copied technique in America, although there is still nothing like it in New England. It has been the subject of numerous magazine and newspaper articles. You are cordially invited to visit the Audio Comparator whenever you are in Boston. Bring your own records with you, if you desire. We can promise you a distinctly new experience in music enjoyment!

JENSEN Speakers - Projectors



(A) HYPEX Projectors With Annular Diaphragm Units

Type VH — A Jensen development — not exponential but with an entirely new flare formula that gives increased efficiency in the region above acoustic cut-off; especially suitable for speech reproduction since response extends from the vicinity of acoustic cut-off to the 6,000 c.p.s. region, with greatest emphasis on the middle highs that add punch and carrying power; commercially acceptable reproduction of music, within the limitations of all small reflex horns, is also provided. Sturdy steel-encased unit, plus reflex horn construction, insures dependable operation indoors and out, under all weather conditions. Finish is durable baked lacquer. May be securely locked into desired projection position by tightening two mounting bracket trunnion nuts. Rustproof, weatherproof terminal box; no exposed terminals. No soldering connections for installation. These new units are furnished with type V-21 driver unit, described below, which is included in net price as listed.

MODEL VH-24 — For speech and superior music reproduction. Useful frequency response 110 to 6000 c.p.s. 58" acoustic path length. Power rating 25 watts. Voice coil impedance 16 ohms. Dimensions 25" diam., length 22".

Cat. No. 31-023 Complete with bracket and driver. Net Price \$43.81

MODEL VH-20 — For speech and music reproduction. Useful frequency response 140 to 6000 c.p.s. 52" acoustic path length. Power rating 25 watts. Voice coil impedance 16 ohms. Dimensions: 21" diam., length 20 1/2".

Cat. No. 31-022 Complete with bracket and driver. Net Price \$37.04

HYPEX Speechmaster Projector

TYPE VH-91 — Meets the need for paging and intercom applications. Highly efficient in the voice frequency range, it delivers clear, intelligible speech with "punch" to override high noise levels. Aims in any direction and locks. Mounting provisions for table, wall, ceiling or post. Cloth-base, phenolic-impregnated diaphragm. Voice coil impedance, 8 ohms. 15 watts max. speech input. Supplied with cable for connections; also facilities for mounting transformer. Useful output over a 100° total angle. Driver included.

Cat. No. 31-027 Net Price \$19.11

(B) Annular Drive Units

An exclusive Jensen design with dural diaphragm clamped at center and at periphery resulting in extra stability, greater freedom from harsh "breakup." Alnico permanent-magnet type, rated at 25 watts maximum with normal voice or music input. 16-ohm voice coil; dust-proof, screened sound chamber; internal screw terminals.

Cat. No. 31-024 Type V-21. Net Price \$19.11

Stand for HYPEX Projectors

EA-5 STAND — Adjustable stand for mounting projector on any flat surface; sturdy cast 3-leg base with horizontal and vertical adjustment.

Cat. No. 31-025 Net Price \$2.94

Jensen Volume Controls

"L" pad type volume controls for connection at speaker voice coil circuit. Complete with pointer knob and escutcheon.

Cat. No.	Type	V.C. Ohms	Watts	Net Ea.
31-042	ST-276	6	5	\$1.29
31-043	ST-411	8	15	1.76
31-044	ST-606	16	15	1.76

(E) Jensen "Standard Series"

These unusually sensitive Alnico 5 PM speakers have exceptional performance characteristics. Completely dustproofed; all field coil models have bucking coils. All speakers are supplied less transformers but with brackets for mounting the transformers listed on this page.

Cat. No.	Type	Size	Voice Ohms	Coil Watts	Net Ea.
31-005	P4-X	4"	3-4	2	\$2.44
31-006	P5-X	5"	45-50	2.5	2.91
31-007	P5-X	5"	3-4	2.5	2.53
31-008	P6-X	6"	3-4	3	2.94
31-009	P6-V	6"	3-4	4	3.59
31-010	P8-V	8"	3-4	5	4.29
31-011	P8-S	8"	6-8	8	7.20
31-012	P10-T	10"	6-8	8	6.26
31-013	P10-S	10"	6-8	9	8.97
31-014	P12-T	12"	6-8	9	6.97
31-015	P12-S	12"	6-8	10	9.70

(G) Jensen "Concert Series"

Heavy-duty, highly efficient speakers for P.A. and high quality radio and phonograph applications. Supplied with covers for magnetic structures. All with Alnico 5 magnets. Best results obtained with Bass Reflex cabinets.

Cat. No.	Type	Size	Voice Ohms	Coil Watts	Net Ea.
31-016	P8-R	8"	6-8	9	\$8.97
31-017	P10-R	10"	6-8	10	10.88
31-050	P12-Q	12"	8	13	16.32
31-018	P12-N	12"	8	15	28.81
31-019	P15-N	15"	8	17	32.34

(D) Extended-Range Speakers

A special series that provide high-fidelity performance up to 10,000 c.p.s. for home and studio use and will accommodate an indoor audience of 100 persons. Meet the response qualifications for monitoring broadcast stations, wired music, etc. Alnico 5 permanent magnets.

Cat. No.	Type	Size	Voice Ohms	Coil Watts	Net Ea.
31-020	P8SH	8"	6-8	7.5	\$8.35
31-021	P12SH	12"	6-8	9.0	10.58

(C) AP-10 Speech Master

Designed to reproduce speech with maximum clarity and intelligibility, "Speech Master" combines the Peridyamic principle and a special radiating system. PM design. Found especially useful in radiophone communication, intercom systems, paging and PA service, and short wave listening; also helpful in CW telegraph work to aid signals in over-riding QRM. Husky voice coil to withstand keying transients. Although designed primarily for speech reproduction, the "Speech Master" will handle music with reasonable quality.

Type AP-10 is suitable for desk or wall mounting; complete with tilt adjustment and base; double dustproofed, fully enclosed and protected; internal bracket for mounting 1/2" x 1/2" transformer; 3-ft. rubber-covered cord. Height 6 1/2", depth 5 1/2" diam. 5". Finished gray with satin-chrome trim.

Cat. No. 31-028 4-ohm v.c. Net Price \$8.17
Cat. No. 31-029 45 ohm v.c. Net Price \$8.53

(C) Type AP-11

Similar to AP-10 but designed for panel mounting without base or swivel bracket. Has clearance eyelets for mounting screws. Mounts in 4 1/4" cut-out. Depth from front panel 4 1/4". Screws and drilling template furnished. 4-ohm voice coil.

Cat. No. 31-030 Net Price \$6.64

(F) "Coaxial Series" Speakers

For high fidelity service where plenty of power must be handled. Dual speaker arrangement comprises a fine 12" or 15" "woofer" assembled on the same framework with a cone type high frequency "tweeter." Both speakers are latest PM type. Filter network for correct balance between speaker units is included. For best low frequency response, use these speakers in Jensen "Bass Reflex" cabinets.

TYPE HNP-51 — 15-INCH — Superb high fidelity for FM receivers, record and transcription reproduction, studio monitoring, etc. Cone-type low-frequency speaker combined with a horn-type high-frequency unit, both with Alnico 5 magnets. Embodies "roll-off" dividing network. Choice of four cut-off frequencies to match program: 15,000, 10,000, 7,500 and 6,000 c.p.s. Maximum input 25 watts. Range 50 to 15,000 c.p.s. Input impedance 500-600 ohms.

Cat. No. 31-001 Net ea. \$81.66

TYPE JAP-60 — 15-INCH — For FM-AM receivers and commercial record reproduction where smooth response and balance are required. Control switch provides choice of four cut-off frequencies: 15,000, 10,000, 7,500 and 6,000 c.p.s. "Roll-off" dividing network. Frequency range 50 to 15,000 c.p.s. Maximum input 17 watts. PM field. Input impedance 500-600 ohms. Integral two-channel network.

Cat. No. 31-002 Net ea. \$55.53

TYPE JHP-52 — 15-INCH — For FM-AM receivers and advanced phono reproduction where slightly less efficiency can be tolerated than is offered by JAP-60. "Roll-off" type high-frequency control with 4-position switch. Frequency range 50 to 15,000 c.p.s. Input handling capacity 14 watts. Integral two-channel type network. Input impedance 500-600 ohms. PM field.

Cat. No. 31-003 Net ea. \$47.07

TYPE JCP-40 — 12-INCH — For FM-AM receivers, reproduction of commercial records, and as the ideal replacement unit for a single radiator speaker. Frequency range 50 to 12,000 c.p.s., handles up to 10 watts. "Bridging" type network. Input impedance 6-8 ohms.

Cat. No. 31-004 Net ea. \$19.60

Jensen Adjustable-impedance Transformers

For use with all Jensen speakers. Types X and Y are provided with flexible leads and pin-tip jacks for rapid selection of the desired impedance; type P and L have soldering lug terminals for the various impedances.

TYPE X — Matches voice coil to 4,500, 7,000, 10,000, and 14,000 ohms plate impedance; all windings except voice coil are center-tapped.

Cat. No.	Type	Mtg. Ctrs.	Sec. Imp.	Watts	Net Ea.
31-031	ZX-1007	3 1/2"	8	17	\$5.73
31-032	ZX-1005	3 1/2"	6-8	14	4.23
31-033	ZX-1002	2 1/2"	6-8	9	2.94

TYPE Y — Matches "line" impedance values: 500, 1,000, 1,500, 2,000 ohms. No center tap.

Cat. No.	Type	Mtg. Ctrs.	Sec. Imp.	Watts	Net Ea.
31-034	ZY-2005	3 1/2"	8	17	\$5.73
31-035	ZY-2003	3 1/2"	6-8	14	4.23
31-036	ZY-2002	2 1/2"	6-8	9	2.94
31-037	ZY-4002	2 1/2"	3-4	6	1.97

TYPES P AND L — Type P is for plate impedance matching; Type L is for line impedance matching.

Cat. No.	Type	Mtg. Ctrs.	Sec. Imp.	Watts	Net Ea.
31-038	ZP-1023	2"	3-4	3.5	\$1.26
31-039	ZP-1025	2"	3-4	3.5	1.26
31-040	ZL-2021	2"	3-4	3.5	1.26
31-041	*ZP-1024	2 1/2"	3-4	6.0	1.53

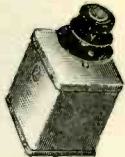
* Center-tapped

SEE PAGE 81 FOR JENSEN BASS REFLEX CABINETS

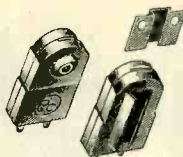
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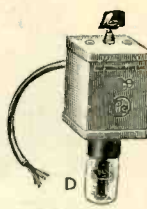
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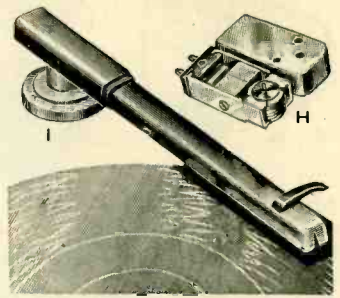
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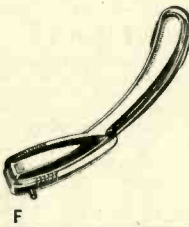
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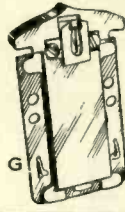
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E



F



G

(A) Model 161M PICKERING Pickup

A professional magnetic reproducer with diamond stylus for transcriptions and lateral-cut records up to 16". Tracking pressure 20 grams; frequency response flat from 30 to 15,000 cycles; radius of stylus .0025" for use with all 88 to 136 line per inch recordings; free from vertical response. Practically shock proof because of guard into which stylus retracts under shock; life of stylus about 5000 hours. 10,000 ohms impedance; 50 millivolts output. Arm 2 1/2" high, 1 1/2" long; with arm rest.

Cat. No. 15-181 Net Price **\$99.00**

(B) Model 163A Equalizer

A 5-position equalizer for the 161M pickup. Extremely flat response on standard recordings. Output at 500-600 ohms. —60 db. **\$42.00**

Cat. No. 15-182 Net Price

Model 165L Equalizer-Amplifier

Zero db output at 30, 250, 500, 600 ohms. Includes 5-position equalizer. Tubes: 6SJ7, 6SL7, 6J5. Overall size 5" x 6" x 10". **\$120.00**

Cat. No. 15-183 Net Price

(C) PICKERING Model 120-M Pickup Cartridge

Will fit almost any arm which will take a crystal cartridge. High impedance, to work into a grid circuit; output 70 millivolts from 40 to 10,000 c.p.s.; .0027" tip radius sapphire stylus; 1/2 oz. tracking pressure. 1 1/2" long, 3/4" wide and 3/8" high. **\$15.00**

Adaptor to mount 120-M in Brush PL-20 arm. Cat. No. 15-185 Net Price **45c**

(D) Model 125-H Equalizer-amplifier

For use with 120-M; raises output to 2.5 v. Working into 250,000 ohm load. Draws 4 ma at 200-300 volts DC and 0.3 amp at 6.3 volts AC/DC. **\$19.50**

Cat. No. 15-186 Net Price

Aerophon Long Life Needles

Type 88. Curved spring design absorbs shocks from record irregularities and minimizes surface noise. Electronium tipped. Good for 5,000 sides. **\$1.47**

Type 111. Surface noise reduced with spring curve. Electronium tipped. Will play over 2,000 sides. **98c**

Type 250. Curved spring design and sapphire jewel tip set in stainless steel give high-fidelity performance. Rated for over 5,000 sides. **\$2.47**

G-E Magnetic Cartridge For Long Playing Records

The new variable-reluctance cartridge designed especially for smooth, wide-range reproduction of the new narrow-groove, long-playing records. With very low mechanical impedance, due to high stylus-arm compliance and low stylus-arm mass, the RP8-041 places very low loading on the record groove and allows the light stylus pressures required. Adaptable to the smaller lighter arms which must be used with long-playing records. 15 millivolts output; stylus pressure 6-8 grams.

Cat. No. 15-079 Model RPX-041. Net **\$5.97**

(H) CLARKSTAN RV Pickup

A magnetic pickup, with replaceable stylus, that offers a flat frequency response up to 15,000 c.p.s., a high output of 125 millivolts at 1000 c.p.s. and operates with needle force as low as 7 grams. Response meets FM specifications. Extremely rugged, unbreakable even under most severe of working conditions. High impedance is standard; may be had in 5, 250, and 500 ohm impedance if specified. Stable under all temperature and humidity conditions; suitable for tropical use. Standard screw mounting holes, 1/2" between centers. Complete with sapphire stylus. **\$15.00**

Cat. No. 15-161 Net Ea.

(I) CLARKSTAN Transcription Tone Arm

The features of this professional pickup arm are usually found only in much higher priced tone arms. May be used with any standard cartridge, either magnetic or crystal, with 1/2" mtg. holes. Four sets of ball bearings, 2 sets for vertical, 2 sets for horizontal motion; operates with needle force as low as 5 grams. Built of cast aluminum with sufficient mass for low arm resonance. Entire arm easily mounted in existing equipment. Beautifully finished in gray wrinkle with gleaming cueing handle and groove pointer. Complete with arm rest, template, and instructions for mounting. For turntables up to 17". **\$19.50**

Cat. No. 15-162 Net Price

Tone arm complete with RV pickup above. **\$34.50**

Cat. No. 15-163 Net Price

Sapphire stylus replacement for RV pickup above. **\$2.40**

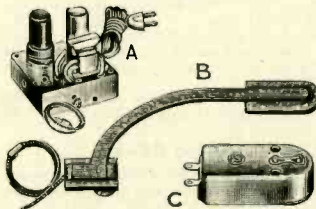
Cat. No. 15-164 Net Ea.

Phono Pickup Weight Scale

Clearly shows whether excessive arm weight is damaging records; for checking new arms, replacing old ones, and adjusting recording head mechanisms and tensions of spring and lever controls. **\$2.50**

Cat. No. 15-177 Net ea.

G.E. MAGNETIC PICKUP



(A) G. E. PREAMPLIFIER

G. E. Preamplifier — Provides the increased output and equalizer necessary for use of G. E. cartridge, above, with existing equipment. Includes one 68C7 tube. Size 3 1/2 x 3 1/4 x 4 1/2" high. **\$5.82**

Cat. No. 15-077

Net ea.

(F) SHURE Pickups Type 93A "Glider" Pickup

A low-mass tone arm whose high needle-point compliance makes possible use of lightweight aluminum construction without counter-weighting and provides uniform needle pressure of 1 1/2 ounces. Frequency response 60-6000 c.p.s.; output at 1000 c.p.s. is 1.6 volts. Light weight coupled with high output makes it especially suitable for replacement of out-moded heavy-weight pickups. For 10" to 12" records. **\$4.41**

Cat. No. 15-403 Net Ea.

TYPE 96A — With all the features of Type 93A above but 4.3 volt output. **\$5.00**

Cat. No. 15-404 Net Ea.

(F)Type "900" Muted-stylus Pickup

Uses Shure "Sixty" lever-type crystal cartridge; ideal for high-quality home phonographs, coin-operated machines, for modernizing old equipment and wherever shellac or Vinylite records are used. Pickup arm is aluminum, designed for best tracking. Provides high needle flexibility, 1.8 volts output, 1 oz. needle pressure, and flat frequency response. **\$6.76**

Cat. No. 15-405 Net Ea.

(E) BRUSH Model PL-20

A high-quality crystal pickup designed for use with all lateral-cut records up to 17 1/2" diameters, including broadcast transcriptions. Low stylus force, 1 ounce, minimizes record wear and background noise. Permanent sapphire stylus shows no wear after 250 hours continuous playing. Flat to 6000 c.p.s., slight rise to 10,000 c.p.s. With permanent polished sapphire stylus and high-impedance equalizer. **\$29.40**

Cat. No. 15-141 Net Ea.

PL-22 replacement cartridge for above. **\$9.82**

Cat. No. 15-142 Net Ea.

(G) RCA Magic Tone Cell

Kit modernizes any of 69 RCA lateral-phonograph models. "Silent" sapphire jewel point. Includes hardware and instructions. **\$4.70**

Cat. No. 15-401 Net Ea.

RCA cartridge 38610. **\$3.26**

Cat. No. 15-402 Net Ea.

(C) G.E. V.R. Cartridge

A marvel of supreme quality reproduction for lateral records in commercial, studio, and home applications. Responds only to lateral vibration, ignoring the vertical vibration of surface scratches and roughness. Very low needle talk because jewel tip is held in soft, spring mounting, and because of very light and small stylus assembly. Low distortion — resonant response eliminated — smooth high frequencies. A magnetic pickup; must be used with preamplifier listed below or similar. **\$4.67**

Cat. No. 15-076 Net ea.

(B) G.E. UPA-004 Pickup Arm

For reproduction of 10" and 12" records, this arm is equipped with the G-E variable reluctance cartridge. Balanced for 1 oz. stylus pressure, adjustable. For use with any manual record changer. Excellent response with absence of undesirable resonance. Single hole mounting with mounting rest supplied. Furnished with 24" free length special cotton covered shielded lead. "Blue gray" gold hammertone finish. **\$9.57**

Cat. No. 15-078 Net Price

ASTATIC PICKUPS



A



B



C



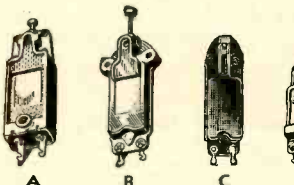
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H

(A) Model 507 Pickup

Crystal phonograph pickup, newly styled, carefully designed to provide high performance at low cost. For use in new record players or as replacement in modernizing existing equipment. Spring counter-balanced arm. Output 6 volt. With Astatic L-40A cartridge, replaceable needle type. For 10" or 12" records. **\$3.23**
Cat. No. 15-301 Net ea.

(B) Model 510 Pickup

Crystal phono pickup. Offset head provides balanced tracking; axial cushioned. Astatic Type L-72A crystal cartridge with replaceable needle. High output, 3.5 volts. Cut-off frequency 4000 c.p.s. Needle pressure 1½ ounces. Arm rest and 13" cable included. Ideal for compact or portable equipment. For 10" and 12" records. **\$4.41**
Cat. No. 15-302 Net ea.

(B) Model 510-QT Pickup

Same pickup arm as above but incorporating the new Astatic QT3-J ("Quiet-Talk") cartridge. Sapphire needle. **\$5.73**
Cat. No. 15-003 Net ea.

(C) Type 508 Pickup

Crystal pickup for 10" and 12" records. Incorporates Astatic L-71A cartridge with output of 1.0 volt and needle pressure of 1½ ounces. Frequency response 50 to 8000 cycles, better than the range of most commercial records, which makes it an ideal replacement for improving existing phono equipment. **\$9.07**
Cat. No. 15-304 Net ea.

(C) Nylon - 508 Pickup

Embodies the new Nylon 1-J crystal cartridge in the 508 arm above. Nylon needle chuck and replaceable long-life sapphire tipped stylus; achieves the ideal linkage for transmission from needle to crystal. Output 1.0 volt. Frequency response 50 to 8000 c.p.s. For 10 and 12" records. **\$10.11**
Cat. No. 15-305 Net ea.

(D) The New FP-QT Pickup

A carefully engineered tone arm, of distinctive styling, to exploit fully the possibilities of the QT3-J cartridge. A replaceable sapphire-tip needle is used in this type crystal cartridge with output voltage of .75 volt, frequency range 50-5000 c.p.s. Overall length 9½"; for 10" and 12" records. **\$10.79**
Cat. No. 15-306 Net ea.
Type FP-QT-M with replaceable metal-tip needle. **\$10.50**
Cat. No. 15-307 Net ea.

(E) Type HP Pickup

A long, slender, straight-arm crystal pickup of the low-pressure type for use on all lateral transcriptions up to 16". Ball-bearing swivel base. 1-ounce needle pressure. Embodies the QT3-J pick-up cartridge with replaceable sapphire-tip needle. Output .75 volts; frequency response 50 to 5000 c.p.s. 23½" cable. **\$16.38**
Cat. No. 15-308 Net ea.

(F) Type "400" Pickup

The "Studio Master," a streamlined crystal pickup intended for broadcast and recording studio use. For all lateral transcriptions up to and including 16". New type, adjustable height, swivel base. Incorporates Astatic 1-J Nylon cartridge with long-life replaceable sapphire-tipped nylon stylus and nylon needle chuck. Output 1.0 volt; frequency response 50 to 8000 c.p.s. Needle pressure 1½ ounces. Length 12½". **\$14.02**
Cat. No. 15-309 Net ea.

(F) Type "400"-QT

Incorporates QT3-J cartridge with output of .75 volt; frequency response 50-5000 c.p.s.; in arm described above. **\$14.70**
Cat. No. 15-310 Net ea.

(E) The New S12-LT-M

Embodying the new low-pressure, low-needle-talk, high-sensitivity LT-M cartridge listed below, Model S12-LT-M is an accurately balanced tone arm for reproduction of transcriptions up to 16 inches in diameter. Isolated against vibration. 1 oz. needle pressure. 15" long; black finish. Furnished with 12" cable. **\$9.03**
Cat. No. 15-311 Net ea.

Astatic Cartridges

Astatic Cartridges

For Astatic pickups; these crystal cartridges are manufactured with utmost care and are individually tested for output and response.

Cat. No.	Fig.	Model	Volts	Press.	Output	Net Each
15-312	A	L-24A	2.95	2½	2½	\$3.26
15-313	A	L-26A	1.4	2½	2½	2.62
15-314	A	L-40A	0.6	1½	1½	2.62
15-315	A	L-46A	3.5	1½	1½	3.91
15-316	B	401A	1.4	2½	2½	2.62
15-317	C	*LP-6	0.85	1	1	5.23
15-318	C	*LP-21	0.85	1	1	5.23
15-319	D	M-22	2.9	2½	2½	3.26
15-320	E	B-2	2.5	2½	2½	3.26
15-321	E	B-4	2.5	2½	2½	3.26
15-322	F	L-70A	1.0	1½	1½	3.26
15-323	F	L-71A	1.0	1	1	3.91
15-324	F	L-72A	3.5	1½	1½	3.91
15-325	F	L-75A	0.75	1½	1½	3.26
15-326	F	L-76A	1.0	1½	1½	3.26

* With permanent needle.



Astatic Magnetic Pickup M1-2

The Astatic magneto-induction pickup is a stable and trouble-free cartridge without delicately spaced air-gaps which collect lint and dust, and without delicate armature balancing problems. Long-lived and trouble-free performance without distortion or change in characteristics. Velocity response flat to 12,000 cycles. Exceptionally high output, 100 millivolts. Needle pressure 1 oz.; impedance, 7,500 ohms at 1,000 c.p.s.; 110,000 ohms at 10,000 c.p.s. Added shielding against hum. Interchangeable with the majority of modern pickup and transcription arms. **\$4.41**
Cat. No. 15-356 Net Price

New Types Astatic Cartridges

(G) Nylon 1-J Type

Nylon needle chuck and needle provide kneaction tracking and achieve ideal mechanical linkage for energy transmission between needle and crystal. Operates with minimum needle pressure of 1½ ounces; output 1.0 volt; cut-off 8000 c.p.s. **\$4.56**
Cat. No. 15-327 Net ea.

Nylon 1-J Needle

\$1.76
Cat. No. 15-328 Net ea.

Type LT-M

Type "T" needle, precious-metal tipped, with new Astatic crystal cartridge combine for a low-pressure, low-needle-talk, high-sensitivity unit. Output 1 volt; frequency cut-off 4000 c.p.s.; minimum operating pressure ¾ ounce. **\$4.12**
Cat. No. 15-333 Net ea.
Type "T" needle replacement. **\$1.47**
Cat. No. 15-334 Net ea.

(H) "QT" Quiet Talk Type

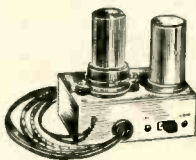
Fits standard flat-type pickups, mounting with only two screws. An advancement in pickup cartridge design that limits vibration to lateral motion only to relieve record wear. Needle pressure only 1½ ounces; output .75 volt; frequency response 50-5000 c.p.s.

QT3-M cartridge with precious metal tip stylus. **\$4.94**
Cat. No. 15-329 Net ea.

QT3-J cartridge with sapphire tip stylus. **\$5.23**
Cat. No. 15-330 Net ea.

Replacement sapphire needle for QT3-J. **\$1.76**
Cat. No. 15-331 Net ea.

Replacement metal needle for QT3-M. **\$1.47**
Cat. No. 15-332 Net ea.



Model EA-1 Equalizer

A compact unit designed for installation in radio sets and audio amplifiers which have insufficient gain for operation of Model M1-2 pickup cartridge. Provides "bass boost." **\$5.70**
Cat. No. 15-357 Net Price

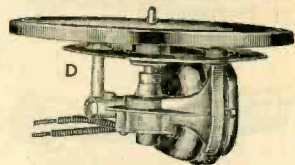
ASTATIC

Tone Equalizer for Crystal Pickups



Tone adjustment network inserted between pickup and amplifier with 4-position knob which selects bass, medium, high fidelity, and out circuit. Complete with dial plate and knob. 2" diam., ¾" deep. Type E4P. **\$1.94**
Cat. No. 15-350 Net ea.

Record Changers - Phono Motors



WEBSTER-CHICAGO RECORD CHANGERS

(A) New Model 156

Incorporates all the new developments in modern reproducer and record-changer design at a spectacular low price. The tone arm offers the most desirable pickup cartridge — either a high quality crystal cartridge or the famous G.E. variable-reluctance cartridge — with low pressure for long record wear and low surface noise. Changes all standard records with simple, fool-proof, "non-jamming" finger operation — in four seconds! Automatically shuts off after last record is played. The dependable heavy-duty Webster motor is cushion-mounted. Stainless steel spindle is cushioned for record protection. Mounting base 14 inches square; overall depth above and below board — 9". 105-120 volt, 60 cycle operation. Complete with installation and operating instructions, template, and mounting hardware.

Cat. No. 34-010 With crystal cartridge, less needle, includes output leads to amplifier. Net \$26.66

Cat. No. 34-011 With G.E. Variable-reluctance cartridge, permanent stylus. \$27.83

Cat. No. 15-101 Net

(B) New Model 146

A new record changer unit which has been used by manufacturers in original equipment and is a proved performer. Compact and efficient, an ideal replacement for outmoded changers. "Non-jamming," fast-cycle changing — about 4 seconds. Plays twelve 10" records or ten 12" standard records. Plays home recordings or inside-out recordings manually. High-impedance crystal cartridge pickup; 36" lead. Dependable heavy-duty motor cushion-mounted for silent operation; quiet record drop. At end of last record, pickup arm returns to rest outside record, turntable continues to revolve until turned off. 105-125 volt, 60 cycle operation; adaptable to 50 cycle operation. Dimensions — 12" x 12 1/2" x 9" overall; 6 1/2" above main plate, 2 1/2" below. Supplied complete with mounting template, instructions, mounting hardware.

Cat. No. 15-104 Net Price \$22.25

(H) Garrard RC-60 Deluxe Changer

For the discriminating music lover who desires treasured records to be played carefully and faithfully. A powerful, steady, governor-controlled motor, complete with speed control for exact 78 R.P.M. reproduction or accelerated or retarded speeds. Intermixed 10" and 12" records played automatically, with automatic stop after last record. Reject lever. Truetaught jewel-mounted pickup gives smooth tracking, sets down gently as a feather. Low-pressure crystal pickup with permanent stylus. Non-slip spindle equipped with special rotating springs prevents wavy reproduction and slipping between records. 110-130 volts 50/60 cycles. \$69.50

Cat. No. 15-151 Net Price

RC-60 With G. E. V. R. Cartridge

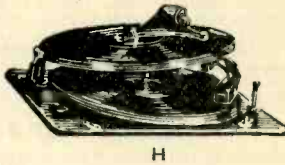
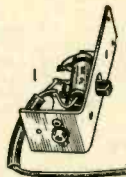
Above record changer with the G.E. variable-reluctance cartridge. Requires pre-amplifier listed elsewhere in this section. \$69.50

Cat. No. 15-152 Net Price

Model RC-60 Changer with Garrard magnetic pickup for use with replaceable needles. \$69.50

Cat. No. 15-153 Net Price

Garrard RC-60 models are available in Dual Range 110/130 volts — 200/250 volt, 50/60 cycles at the same price. Add "D" to Catalog Number when ordering. For Universal AC/DC models, 110/130 — 200/250 volts, 50/60 cycles, add "U" to Catalog Number when ordering.



W-C Microgroove Record Players

For supreme enjoyment of the new microgroove records, Webster-Chicago microgroove record changers afford unique efficiency with automatic playing. Whether one microgroove record or a stack, the W-C changer permits playing without danger of scratching grooves. Dual-speed models are capable of superior efficiency for playing both regular groove and microgroove records automatically at correct speed and needle pressure. The W-C 4-pole shaded motor minimizes development of flats in the rubber-tired turntable wheel.

(C) Model 133 Single Speed

The first automatic record changer designed to play microgroove records at correct speed and needle pressure. Mounted on an attractive brown hammered-finished base, Model 133 is equipped with 7-ft. pickup cord with plug for easy connection to radios having phono-input receptacle; 7-ft. motor cord and plug. Heavy-duty motor provides smooth power. Plays ten 12" or twelve 10" records. Operates on 105-120 volts 60-cycle current. Base dimensions 12 1/2" x 12"; over all space required 13 1/2" x 14 1/2" x 9".

Cat. No. 15-110 Net Price \$38.95

(A) Model 246 Dual Speed

Plays both microgroove and regular groove records. Equipped with a dual-speed motor with switching arrangement providing for 33 1/3 or 78 R.P.M. and with a neutral position which shuts off the motor at the same time disengaging drive to avoid flattening drive wheel. In all other respects Model 246 is similar to Model 146 listed above. Pickup arm returns to rest position after the last record has been played; turntable continues to revolve until switch is returned to neutral position.

Cat. No. 15-111 Net Price \$29.25

(B) Model 256 Dual Speed

The ultimate in fine record changer design makes flawless reproduction, smooth fast flow of records available for playing both microgroove and regular groove records. Switching arrangement for 33 1/3 or 78 R.P.M. and neutral position which shuts off motor and disengages drive to avoid flattening drive wheel. Embodies all the supreme features of Model 156 described above. All operating features are similar except that pickup arm returns to rest position until switch is turned to neutral position.

Cat. No. 15-112 Net Price \$33.91

(G) ALLIANCE Model 80

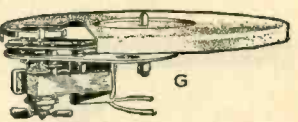
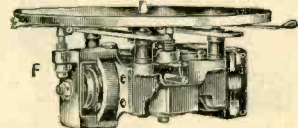
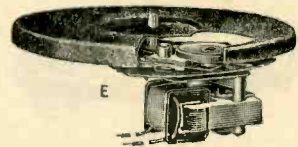
Careful design and production result in a dependably performing unit at an amazingly low price. Motor is fan-cooled, rubber vibration-insulated, with uniform speed friction-drive. Maximum below-base dimension, 2 1/2". \$3.72

Cat. No. 15-026 Net Price

(I) RCA Radio-Phono Switch

When record players and phonographs are operated thru radio receivers, this unique switch permits instant change-over, isolates bias and other DC voltages in receiver, no hum is introduced and tonal quality is unaffected. Easily installed, usually without removing receiver chassis from cabinet. \$1.32

Cat. No. 15-134 Net Price



GI Phono Motors

(D) Model CX Gear-Drive

Combines low cost with quiet, dependable performance. 4-pole motor is fully enclosed, fan cooled; helical-cut drive gears run in sealed oil-bath; has ample power for 10" or 12" records. Motor isolated from turntable both mechanically and electrically. Dimensions: 4 1/2" x 4 1/2"; 3 1/2" below mounting plate; 9" turntable. Complete with mounting plate, ready for installation. 78 R.P.M. \$7.95

Cat. No. 15-002 Net Price

Model MX Rim-Drive

An economy model that delivers quality performance. Rim drive, 2-pole fan-cooled motor with idler design that insures quiet operation; turntable keyed to shaft. Motor insulated from plate to eliminate vibration. Oilless bearings. Dimensions: 3 1/2" x 2 1/2"; 2 1/2" below mounting plate; 9" turntable. 78 R.P.M. \$4.77

Cat. No. 15-003 Net Price

Model RX Rim-Drive

Light weight, compactness, dependable operation feature this 4-pole model. Rubber insulated from both mounting plate and turntable. Driving pulley, idler, and turntable are positively aligned in one plane for efficient performance. 10" turntable. Dimensions: 4 1/4" x 3 3/4"; 2 1/2" below mounting plate. 78 R.P.M. \$5.75

Cat. No. 15-004 Net Price

(E) Model LX Rim-Drive

A low-cost, 2-pole motor, with rim drive, that delivers ample quiet, smooth power to play 10" and 12" records. Rubber vibration-insulated. Turntable shaft keyed to, and revolves with, turntable. Complete with 9" turntable and mounting plate, ready for installation. Dimensions: 3 1/2" x 2"; depth 2" below plate. 78 R.P.M. \$4.08

Cat. No. 15-005 Net Price

The Green Flier

(F) 78 and 33 1/3 R.P.M.

A powerful governor-controlled induction motor that can maintain uniform speed under variations of load that make it suitable for dependable heavy duty performance. Fully enclosed, with silent helical-cut gears running in sealed oil bath; never needs oiling. Complete with mounting hardware and 12" turntable. Dimensions: 8 1/2" x 5 1/2"; depth 3 1/2" below mounting strap. \$16.45

Cat. No. 15-006 Net Price

Cat. No. 15-007 Same as above but with 10" turntable. Net Price \$15.90

Automatic Stop Switch

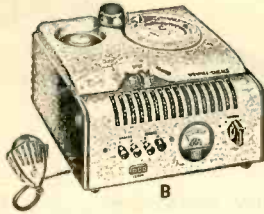
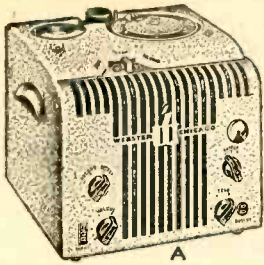
Optional equipment with all "X," Green Flier and GI-RM4 motors listed above. \$7.95

Cat. No. 15-008 Net ea.

WEBSTER -
CHICAGO

Magnetic Recorders

BRUSH
PENTRON

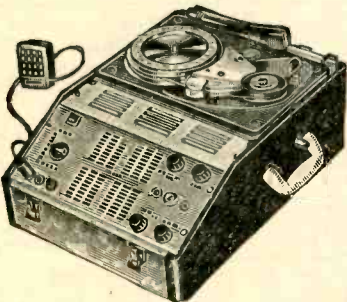


(C) Webster-Chicago 180 Wire Recorder

A portable wire recorder that plugs into 110-volt 60-cycle conventional outlet and gives you a half-hour of unbroken recording of whatever you choose to reproduce — conference proceedings, amateur entertainment, speeches, radio programs — anything you hear that you want to hear again. All accessories are included in this self-contained unit, including crystal microphone, 2 15-minute reels of wire, 1 30-minute reel, amplifier, speaker; has outlet built in for attaching an extra speaker. Incorporates signal indicator for input control. Connection provided for direct radio program recording (without mike). Operation is simplicity itself. Flick a switch to "Record," when the recording is finished, switch to "Rewind," then to "Listen." The old recording on the tape is automatically erased as the new is recorded. If you want to save a recording use a new reel. (See accessories listed below.) Completely enclosed in attractive carrying case, 17 1/2" x 11 1/2" x 7 1/2".
Cat. No. 34-002 Net Price \$149.50

Extra reels of wire. If more than an hour of recording is desired or if you want to retain a recording, you will want extra reels of recording wire. Can be cut, or spliced by tying a tight knot.
Cat. No. 34-003 15-Minute Reel. Net ea. \$1.30
Cat. No. 34-004 30-Minute Reel. Net ea. 1.95
Cat. No. 34-005 1-Hour Reel. Net ea. 3.25
Cat. No. 34-006 Output cord for connecting extra, remote speaker. Net ea. \$1.63
Cat. No. 34-007 Input cord for connecting recorder directly to radio. Net ea. \$1.63

Astra-sonic Wire Recorder and Phono-radio



Combines in one portable unit a superhet radio, record player, and wire recorder — a marvel of compact convenience. Engineered for high-fidelity response and ease of operation, and is packed with special features. Records or mike. A feature is the synchronized timing meter which eliminates guesswork in finding a specific place on the wire. Outlets provided for external speaker and external amplifier jacks. FM input jack for recording from external FM tuner. Amplifier and recording head response is essentially flat from 100 to 7,500 cycles. Furnished completely with crystal mike, 0" line cord, two spools recording wire and long-life recording needle. In sturdily constructed cabinet, covered with simulated leather. List Price \$189.50
Cat. No. 34-051 Net Price \$149.50

(B) Webster-Chicago Model 78 Recorder

A complete wire recording unit — with the same foundation unit as the Webster 180 — that can be connected to any home radio or amplifier. Consists of the complete wire transporting system, triple purpose recording head (records, erases, plays back), oscillator coil, built-in pre-amplifier, interstage amplifier, and power supply. A simple installation operation gives the same quality reproduction as obtained from your existing amplifier or radio. Two recording positions — mike and line — two listening positions — mike and line — controlled by push buttons. Meter type volume level indicator offers visual control of input level with the volume control. Complete with cords, connectors, instruction for installation to radio or amplifier, one 15-minute spool of recording wire. Encased in attractively streamlined metal housing, 11" x 11 1/2" x 6" high. Operates on 105-120 volts, 50-60 cycles.
\$99.50
Cat. No. 34-008 Net Price

(A) New Model 81 Wire Recorder

The "Electronic Memory" all purpose magnetic wire recorder and playback. Designed for heavy duty use in permanent and semi-permanent installations and supplied with a microphone and 15-minute spool of wire. Recordings may be played back thousands of times without appreciable loss of quality, or the recording may be erased and the same wire used over. Electrodynamic 5 1/2" speaker. Records 2 feet ps; rewinds 14 feet ps. Triple purpose head records, plays and erases. Recording level indicator insures proper input signal. Gray and maroon hammerloid finish. Operated on 105-120 vac. \$114.50
Cat. No. 34-009 Net Price

(A) Astatic FL-33 Pickup For Microgroove LP Records

Specially designed to meet the precise requirements of the new microgroove recordings, the FL-33 pickup with LP-33 crystal cartridge is a professional tone arm. 5-gm needle pressure, correct for the new lower-radius needle tip; permanent sapphire needle with .001" tip. Approximately one-half volt output; frequency range 30 to 10,000 c.p.s. Base design eliminates tone arm resonance and assures perfect tracking. Cartridge LP-33 is instantly replaceable with the model LP-78 described below; cartridge slips in and is pressure held, thus providing the proper pickup for 33 1/3 or 78 RPM records.
Cat. No. 15-351 Model FL-33 Pickup complete with LP-33 cartridge. Net Price \$11.70
Cat. No. 15-352 Model LP-33 Cartridge only. Net Price \$5.82

Model LP-78 Cartridge

Fits the FL pickup arm, instantly interchangeable with LP-33 cartridge, but has a .003" radius needle for playing 78 RPM records. Thus enables quick change-over to proper pickup for 78 or 33 1/3 RPM (microgroove) records.
Cat. No. 15-353 Net Price when purchased with FL-33 Pickup \$5.23
Cat. No. 15-354 Net Price when LP-78 is purchased separately \$5.82

Model FL Filter

An important accessory for Astatic FL-33 pickup, for best performance with high quality speakers. Controls pickup response, eliminates high frequency peak.
Cat. No. 15-355 Net Price \$4.04

(D) Brush "Soundmirror"

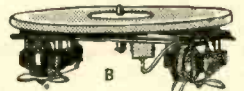
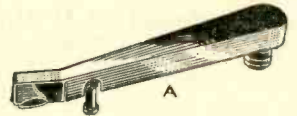
Type BK-403 Brush magnetic tape recorder, in attractive black leatherette carrying case, is ideal for portable use by broadcasters, in school classrooms, for industrial conference recording, in commercial sound studios, and for home entertainment. No technical skill is required to get quick, accurate, on-the-spot recording. Affords two ribbon speeds, 4.5 inches per second for voice reproduction, 7.5 inches per second for music; frequency response is true to 5000 c.p.s. Only 45-seconds required for rewind. High-impedance input for crystal mike; low-level, low-impedance for dynamic mike; high-impedance, high-level input for radio. Self-contained amplifier and speaker. Type BA-106 crystal microphone and desk stand with removable base included. Complete with one take-up reel, 5 reels of tape. 110-120 volts 60 cycles.
\$375.00
Cat. No. 34-131 Net Price
Cat. No. 34-132 Extra reel of tape. \$2.50
Net Price

Magnetic Recording Wire

Economical high-quality recording wire for use with all standard makes of wire recorders. (Not suitable for use with tape recorders.) The high fidelity type wire is for special permanent or semi-permanent recording and usually requires two erasures before re-using.
Cat. No. Spool Cat. No. Spool Cat. No. Spool
34-401 1 Hr. 34-402 1/2 Hr. 34-403 1/4 Hr.
(Price is same for both types.)

HIGH FIDELITY PERMANENT TYPE

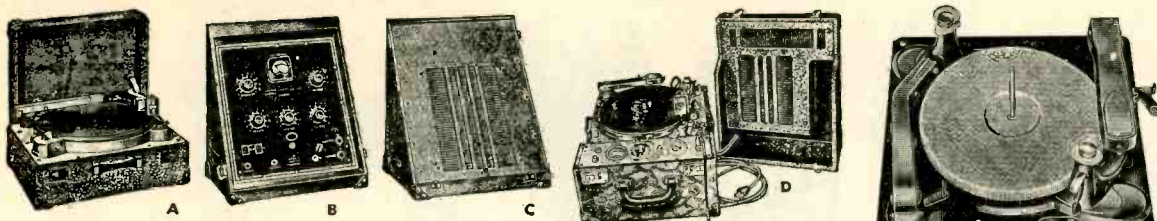
34-404 1 Hr. 34-405 1/2 Hr. 34-406 1/4 Hr.
Net Each \$3.25 \$1.95 \$1.30
Quantity discount for standard package of 10 spools of each type, deduct 10% from net price per spool.
Cat. No. 34-410 Empty Spool. Net Each 34c
Cat. No. 34-411 Plastic Leader. Net Each 8c



(B) Alliance Dual Motor Unit 78 and 33 1/3 RPM

Two separate rim-drive motors for playing both LP micro-groove records and regular records. 12" turntable for 10" and 12" records. Speed selector lever connects speed desired and automatically disengages other motor. When selector lever is OFF, both idlers are disengaged to prevent distortion. For 110 volts 60 cycles.
Cat. No. 15-027 Net Each \$11.76

PRESTO Recorders - Playbacks MEISSNER - G-I



PRESTO

Model "Y" Portable Recorder

FIGS. A, B, C

This portable recorder for 16" transcription recording and playback is of indisputable professional quality. For 33 $\frac{1}{3}$ R.P.M. broadcasting transcriptions or 78 R.P.M. 6", 8", 10", 12" recordings and recordings for commercial pressings. Also provides extreme high-fidelity reproduction of both transcriptions and phono records. Usable as p.a. system for audiences up to 500 persons. In wide use for professional auditions to prospective sponsors. Records continuous 15 minute program at 33 $\frac{1}{3}$. All operating controls are easily accessible. Model 87-A recording amplifier with 10" PM speaker, two-mike mixer, high and low frequency equalizers and changeover switch for continuous recording or re-recording. Constant speed without vibration. Instant recording speed changeover without stopping. I-O or O-I cutting controlled by lever. Vibration damper. 110 volts, 60 cycles. Complete, less microphone and stand. **\$741.00**

Cat. No. 34-126 Net Price

(D) Model "K" Portable Recorder

The portable recorder, playback, and p.a. system for sales training, teachers, actors, and musicians when quality recording and easy portability are desired. Records 15 minutes continuously at 33 $\frac{1}{3}$ R.P.M. on 13 $\frac{1}{2}$ " disc. Makes 6", 8", 10", 12" records. Plays all makes of records. With many of the valuable features of the Model "Y" above. Same high-grade design magnetic cutting head and pickup. 6-tube amplifier. High frequency equalizer for 33 $\frac{1}{3}$ R.P.M.; tone control for needle scratch suppression. Detachable dynamic speaker. Quick change-over from O-I to I-O Exclusive Presto rubber-tired direct drive without rubber pulleys and belts. High-fidelity amplifier, cutting head, pickup. Low noise level. Speed uniform within .5%. 110 volt, 60 cycle operation. Complete, less microphone and stand.

Cat. No. 34-127 Net Price **\$348.00**

(A) Model 75-A Recording Turntable

16" dual speed Presto recording turntable; portable yet rugged for applications in industry, teaching, and broadcasting. Includes turntable, drive mechanism, and cutting and playback heads as in Model "Y"; less Model 87-A speaker and recording amplifiers.

Cat. No. 34-128 Net Price **\$451.00**

(E) Model "L" Transcription Playback

A portable unit complete with 12" dual-speed turntable, high quality pickup, 4-stage amplifier, and 8" speaker, all mounted in single case.

Cat. No. 34-129 Net Price **\$290.00**



Phono Jack

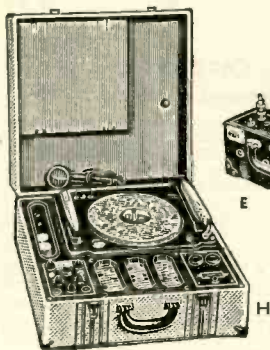
Single-prong, positive-grip phono jack; used on RCA-type recording units, receivers, auto sets; mounted on Bakelite disc, $\frac{1}{8}$ " thick, $\frac{1}{4}$ " mtg. ctrs.

Cat. No. 01-966 Net Each **7c**

Phono Plug

RCA-type; used with phone jack above

Cat. No. 01-967 Net Each **5c**



(I) Model GI-RM4

A heavy-duty, dynamically balanced 4-pole rim drive motor. Exceptionally quiet operation, due to rubber vibration insulation from both mounting plate and turntable. Turntable keyed to, and revolves with turntable shaft. Retractable record drive pin in turntable permits record-cutting and playing standard records without any adjustment. Positive alignment of driving pulleys, idler, and turntable for highly efficient performance. 10" weighted turntable. Complete with turntable and mounting plate. Dimensions: 3 $\frac{3}{8}$ " x 3 $\frac{3}{8}$ " x 2 $\frac{1}{2}$ " below mounting plate. 78 R.P.M. Cat. No. 34-178 Net Price **\$9.90**

UTC Universal

Interstage Equalizer



Designed for connection between two triode audio stages or to match a 5000 to 30,000 ohm source to grid. Requires no additional audio stage unless gain of equipment to which the equalizer is added is low. Continuously adjustable equalization to 15 db. above and below a flat reference at both treble and bass. Complete with etched panel 2 $\frac{1}{2}$ " by 4".

Cat. No. 36-073 Type CGE-1 Net Price **\$15.00**
Cat. No. 36-074 Free booklet showing response curves and applications for the CGE-1.

Stroboscope Disc

Checks the speed of revolution for 33 $\frac{1}{3}$ and 78 R.P.M. turntables under lights from 50, 60 and 75 cycle current. Results in better sounding pitch and tempo from recordings. Tests are a cinch to make, yet positive and clear.

Cat. No. 15-178 Net ea. **15c**

Wireless Phono Oscillator

No electrical connections to make when converting radio to radio-phono combination with the Adaptol oscillator. Simply plug into any AC/DC outlet; jack takes record player input lead... and permanent installation is completed. Radio can still be played. Excellent reproduction.

Cat. No. 15-176 Net Price **\$5.85**

GENERAL INDUSTRIES

(F) GI-RC130L With Record Changer

A superior combination unit that cuts records up to 10" diameter and plays twelve 10" or ten 12" records automatically at 78 R.P.M. Recording operation is simple—just lower cutting arm over record disc and it starts. Depth-of-cut regulation by adjustment on top of cutting arm. A single lever sets for 10" to 12" changeover. record removal, manual, and recording operations. Positive, quiet, smooth record changing. Reject button. Shock mounting isolates entire assembly from cabinet. With low-pressure crystal pickup, on-off switch, and spring-mounting hardware. Base plate 14" x 14" x $\frac{1}{4}$ "; height above lower edge of base plate 5 $\frac{1}{16}$ "; depth 2 $\frac{1}{2}$ ".

Cat. No. 34-176 Net price **\$40.14**

(G) GI-R90L—78 and 33 $\frac{1}{3}$ R.P.M.

An attractively styled assembly for deluxe applications; beautiful walnut wood-grain finish on steel base. Turntable recessed into well in base plate. Dual speeds, 78 and 33 $\frac{1}{3}$ R.P.M. controlled by speed-change dial for either cutting or playback. Cuts up to 10" records; plays up to 12" records. Starts cutting when cutting arm is lowered over disc. Depth-of-cut adjustment. Pickup and cutter arms labelled. Dynamically balanced 4-pole uniform-speed motor with compensating switch. 10" weighted turntable; low-pressure crystal pickup; pickup and cutter arm rests. Base plate—15" x 11 $\frac{1}{2}$ "; height over lower edge of plate—2 $\frac{1}{2}$ "; depth—3 $\frac{1}{2}$ ".

Cat. No. 34-177 Net Price **\$28.95**

GI-R70L

A smooth performing, single-speed home recorder and playback. Cuts records up to 10", plays records up to 12". Regulation of depth-of-cut by adjustment on top of cutting arm. Retractable record driving pin in turntable permits playing standard records without adjustment. Heavy-duty, self-starting, constant speed, 4-pole, rim drive, induction type motor dynamically balanced. Assembly includes: motor, 10" weighted turntable, low-pressure crystal pickup, arm rests, drawn steel base plate. Base plate—15" x 10", height above lower edge of plate 2 $\frac{1}{16}$ ", depth 2 $\frac{1}{2}$ ".

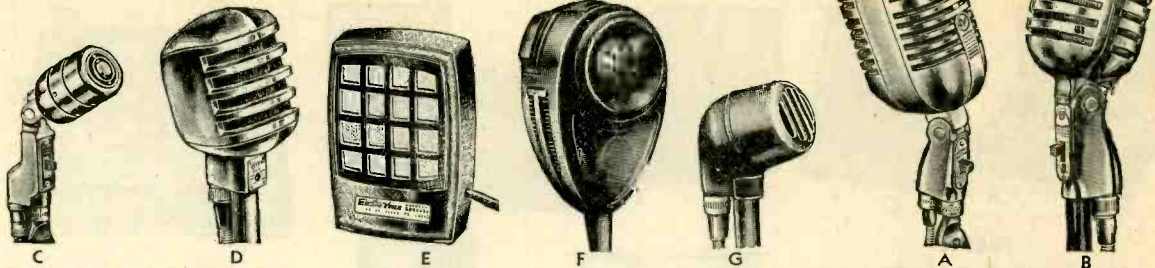
Cat. No. 34-179 Net Price **\$24.51**

(H) MEISSNER Radio-Phono-Recorder

A recorder, phonograph, and radio combination—all that is needed to make parties, social gatherings, and home entertainment forever-lasting. A professionally built instrument with controls designed for use by the non-technician. Two speeds, 33 $\frac{1}{3}$, and 78 R.P.M. input level carefully monitored by neon load and overload indicators. High fidelity crystal cutting head for records up to 10", excellent crystal mike. Lightweight crystal arm for playback of recordings and commercial discs up to 12". Ample record storage space. Records radio programs directly, without microphone side-noise. Separate volume controls permit mixing and "dubbing" live and radio programs. Sensitive, selective, full-tone receiver. All compactly and attractively housed with "airplane" luggage finish. Furnished with complete instructions, mike, and tubes.

Cat. No. 34-151 Net Price **\$111.28**

Electro-Voice - MICROPHONES FLOOR STANDS



(B) The CARDAX Crystal Mike Dual Frequency - Unidirectional

For the first time, the Cardax makes available a dual-frequency-response crystal microphone for selective unidirectional reproduction of voice and music. The Cardax "mechanophase" uses a phase-shifting diaphragm to produce high unidirectionality at all frequencies. Rear response is down on an average of 18 db. Frequency response is controlled by screw adjustment on back of mike; gives either wide response for high fidelity music pickup or rising response for high frequencies, which is ideal for speech. High output level, varies between -57 and -48 db. for flat and rising response. Tilt adjustment; built-in on-off switch; Bimorph crystal; satin-chrome finish; 20-ft. cable.

Cat. No. 20-101 Net Price . . . **\$23.23**

(I) The COMET-D Dynamic Mike

A combined dynamic microphone and stand at a rare low price. Internal moving coil with Acoustalloy diaphragm provides exceptionally smooth, high quality performance. Output level 53 db. below 1 volt/dyne/cm², open circuit. Frequency response 70-7,000 cycles. Non-directional at low frequencies, rising directivity at high frequencies. Equipped with 7½-ft. shielded rubber-jacketed cable. Finished in lustrous gray. Especially suited for p.a., home recording, intercom and amateur radio communications. Model 601.

Cat. No. 20-103 Net Price . . . **\$11.47**

(I) The Comet Crystal Mike

High capacity crystal assures smooth, wide-range response and high output level for excellent reproduction of voice and music; especially suited for home recordings, economical p.a., paging, "ham" communications. Output level -48 db. Frequency response 70-7,000 cycles. High impedance; can be used with any standard amplifier high-impedance input. Weighted bottom. 7½-ft. cable. Model 902.

Cat. No. 20-104 Net Price . . . **\$7.79**

With on-off switch.

Cat. No. 20-106 Net Price . . . **\$8.67**

(E) Electro-Voice "Century" Mikes

A new design in low-cost mikes which can be used on floor stand. In the hand, suspended in mid-air or on desk with or without stand. Carbon, crystal or dynamic types available.

MODEL 915 — Crystal type with 60-7,500 c.p.s. response. Output -50db. Furnished with 7½ ft. shielded cable.

Cat. No. 20-105 Net Price . . . **\$5.88**

MODEL 615 — High-impedance dynamic type designed for rough service. Has 55-7,500 c.p.s. response. Furnished with 7½ ft. shielded cable.

Cat. No. 20-106 Net Price . . . **\$9.70**

MODEL 615SR — Same as type 615 but with 48" cable, relay switch and hook.

Cat. No. 20-107 Net Price . . . **\$11.76**

MODEL 215 — Single-button carbon mike. 200-4,000 c.p.s. response. -26 db. output. With 48" cable.

Cat. No. 20-108 Net Price . . . **\$4.85**

MODEL 215SR — Same as 215 but with hang-up hook and relay switch.

Cat. No. 20-109 Net Price . . . **\$5.88**

Model 415 Desk Stand. Mounts mike at 15° tilt.

Cat. No. 20-110 Net Price . . . **88c**

(A) CARDYNE I Unidirectional Dynamic Mike

True cardioid pickup with broad frontal selection and negligible rear pickup. Stops feedback. Hi-Z (direct to grid, 25,000 ohms) impedance. Response substantially flat 40 to 10,000 c.p.s. Smooth, firm tilting action permits aiming at sound source for selective pickup. Electro-Voice Acoustalloy diaphragm assures withstanding severe operating conditions. Entire moving coil assembly cradled in Koylon synthetic latex rubber. Type MC-1 cable connector, locking single contact, built into microphone stud to permit tilting without strain on cable. Built-in on-off switch. Finished in durable satin-chrome.

Cat. No. 20-102 Type 726 Net Price . . . **\$34.99**

Dynamic Microphones

(C) MODEL 630-C — A general purpose mike with Acoustalloy diaphragm assuring smooth frequency response 40-9,000 c.p.s. -53 db. output. Finished in satin-chrome, this mike is ruggedly built. May be tilted 90°.

Cat. No. 20-111 High Impedance. **\$21.46**

Net Price

Cat. No. 20-112 250 ohms. Net Price. **\$21.46**

(G) MODEL 605 — A substantial, low-cost mike with 50-7,500 c.p.s. response and -57 db output.

22° tilt. Chrome finish. Equipped with cable connector. **\$15.29**

Cat. No. 20-113 Net Price

(D) MODEL 610 — Quality instrument with response from 50-8,000 c.p.s. with -53 db. output.

Fixed 15° tilt. **\$18.23**

Cat. No. 20-114 Net Price

(F) MODEL 600D — Rugged hand-held model with response of 100-6,000 c.p.s. and -55 db. output.

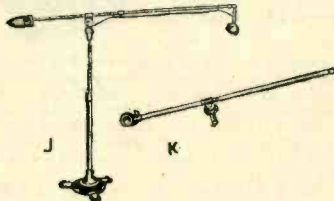
Push-to-talk switch. High impedance. 6' cable. **\$20.58**

Cat. No. 20-115 Net Price

(F) MODEL 602 — Same as 600D for use where noise is 100 db. or more. Has a noise-cancelling feature. **\$23.52**

Cat. No. 20-116 Net Price

Boom Stands



(J) Atlas Boom Stand BS-35

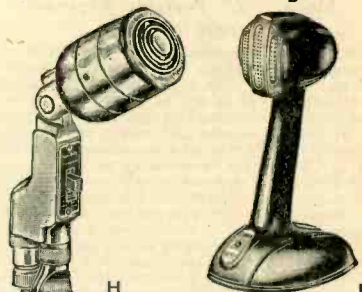
"Floating action" stand with finger-tip control. Boom arm may be removed. Stand is adjustable vertically, counterweighted 63-inch boom can be tilted and extended horizontally. Counterweight can be regulated for all microphone weights. Vertical extension 72" maximum, minimum 48". Three-legged base. Chrome and gun-metal finish. With universal swivel. **\$32.34**

Cat. No. 20-359 Net Price

(K) "Baby Boom" Arm BB-1

Can be easily and quickly attached to any microphone floor stand. Boom arm is equipped with universal swivel that can be adjusted and locked in any position. Sliding counterweight. 32-inch tube section, super-chrome plated. **\$4.12**

Cat. No. 20-360 Net Price



(D) Model 910 Crystal Microphone

With high-capacity moisture-sealed crystal with flat response 50-8,000 c.p.s. -48 db. output. With 8' cable. 15° fixed tilt. **\$13.23**

Cat. No. 20-118 5' cable. Net Price

Cat. No. 20-119 20' cable. Net Price . . . **\$14.11**

(G) Model 905 Crystal Microphone

A quality unit with smooth response 50-7,500 c.p.s. -54 db. output. 22° fixed tilt. Satin chrome finish. **\$9.70**

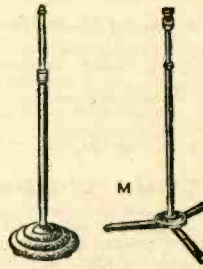
Cat. No. 20-117 Net Price . . .

(H) Model 635 Broadcast Microphone

For use in all broadcast applications, this high fidelity, quality dynamic mike is well suited for studio, recording, and in sound amplification work. Has flat response 60-13,000 c.p.s. and -53 db output. 50 or 250 ohms impedance may be chosen by recessed switch. Moisture proof and shock resistant. It has the "Acoustalloy" diaphragm. Finished in satin-chrome, it has a 90° tilt on a swivel head. With 20' shielded cable and built-in connector. **\$35.28**

Cat. No. 20-120 Net Price

Floor Stands



(L) SNYDER MODEL MS-5 — Two-section telescopic stand adjustable from 30" to 60". Staff triple chrome plated. Heavy duty, 12" diameter base is rich gray crackle finish with chrome trim. **\$6.17**

Cat. No. 20-351 Net Price

(L) SNYDER MODEL MS-1 — Two section telescopic stand adjustable from 30" to 60" with standard 10" base. Finished as Model MS-5 above. **\$5.96**

Cat. No. 20-352 Net Price

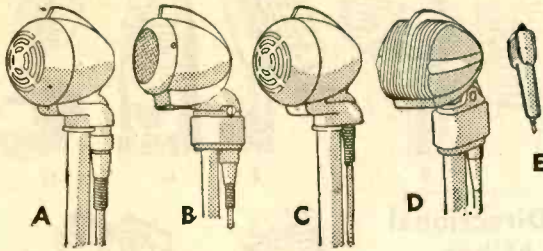
(M) ELECTRO-VOICE MODEL 430 — Finger pressure on a button gives control of height between 36" and 65". Steady, tri-leg base for wide support. Finished in gray and chrome. **\$8.82**

Cat. No. 20-353 Net Price

(M) ELECTRO-VOICE DELUXE 425 — Construction features same as above except button below mike gives easy, smooth, one-hand control of staff height. Folding legs. Finished in satin-chrome. **\$14.41**

Cat. No. 20-354 Net Price

TURNER - Microphones - ASTATIC



(C) TURNER "CHALLENGER" Model BX

Unusual performance at a remarkably low price features Model BX. Engineered with substantially flat response, plus/minus 5 db., from 50 to 6,000 cycles; output level -52 db.; high impedance. Semi-directional pickup characteristic. Crystal is shock-proof mounted, with barometric compensation, moisture seal, and wind-gagger. Case is die-cast alloy, brown enamel finish. With 7-ft. shielded cable. **\$6.38**

(B) MODEL CX has all the features of Model BX with the important exception noted here: Frequency response plus/minus 5 db. from 50 to 7,000 cycles. Die-cast alloy case is finished in satin-chrome. **\$9.55**

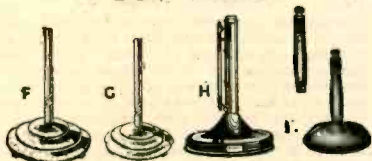
(B) TURNER MODEL 22

Available in either crystal (22X) or dynamic (22D) models as general purpose mikes for amateurs, paging, and general sound work. Both models are of modern styling, die-cast alloy with satin-chrome finish. Easy to handle, convenient to use. Full ninety-degree tilting head permits semi- or non-directional pickup. With 7-ft. removable, shielded single-conductor cable with connector.

MODEL 22D — Dynamic — Features high-quality magnets in well-balanced acoustic circuit shielded to prevent r-f pickup. Output level -54 db. at high impedance. (Specify 200, 500, or high impedance.) Frequency response plus/minus 5 db. from 50 to 9,000 cycles. **\$13.82**

MODEL 22X — Crystal — Has high-quality, humidity-protected crystal in mechanical shock-proofed mounting, with barometric compensator. Output level -52 db. Frequency response plus/minus 5 db. from 50 to 9,000 cycles. High impedance. **\$11.76**

Desk Stands



(I) SHURE S34B TAKE-APART STAND — One-twist motion locks or unlocks handle in base. Metal base, wood handle. Height over all 8 1/2". Base diameter 4 1/2". **\$1.47**

(H) ASTATIC "G" GRIP-TO-TALK — For Astatic mikes; equipped with socket connector, spring cable protector, r.c. cable, concealed terminal strip. 8 1/2" high. **\$6.44**

(F) SNYDER MODEL BM-1 BANQUET MIKE STAND — A luxurious unit with triple chrome plated, two-section telescopic stand extending to 18" overall; 6" gray crackle finish base. **\$1.71**

(G) SNYDER MODEL DM-1 DESK STAND — Convenient 8" overall height with chrome tube, 5" crackle finish base. **\$1.15**

(D) TURNER MODEL 33

Model 33 is available with either crystal (33X) or dynamic (33D) circuit. Both models are encased in satin-chrome finished die-cast alloy, with ninety-degree tilting head which permits non-directional pattern pickup; otherwise semi-directional. Matched acoustic design results in clear, crisp speech reproduction; music is full and round with gradations of tone and volume faithfully retained. Either model is recommended for recording, orchestra pickups, paging, and "ham" communications. With 20-ft. shielded single conductor cable with connector.

MODEL 33D — Dynamic — Output level -54 db on high-impedance model (Specify 200, 500 ohms or high impedance when ordering.) Frequency response plus or minus 5 db. 30-9,000 cycles. High-quality alnico magnets. **\$14.70**

MODEL 33X — Crystal — Output level -52. Frequency response plus/minus 5 db. 50-9,000 c.p.s. High output impedance. High-quality Rochelle-salt crystal. Humidity protection. Barometric compensator. Shock-mounted. **\$15.88**

Turner Model 20X Hand Mike

A light-weight, low-cost hand microphone with unusually fine response characteristics. Metal-seal crystal withstands humidity conditions. Output level -54 db. Frequency response plus/minus 5 db. from 50 to 7,000 cycles. High output impedance. Semi-directional pickup characteristics. With 7-ft. shielded, single-conductor cable attached. Weight 8 ounces. **\$7.56**

MODEL S20X — Same as above but with sidelock switch. **\$8.73**

ASTATIC

(J) The "Velvet Voice" Microphone

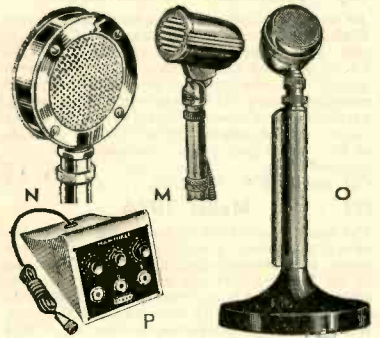
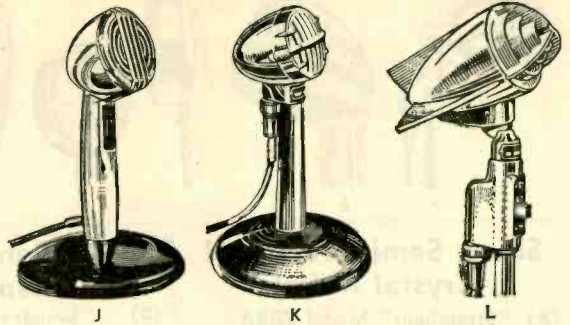
A new Astatic model. Offers smooth response — 30-10,000 cycles — with high output level for home applications, public address systems, and radio communications. Stationary head fixed at convenient angle. Semi-directional. Base is easily detachable. With 15-ft. cable. Beautiful gold finish over case and handle. A high impedance instrument. **\$8.20**

(K) Model JT-30 Crystal Microphone

A wide range, semi-directional microphone with matched acoustic design resulting in pleasing bass response with uniform highs free from dips and peaks. Heavy die-cast cartridge housing, corrosion-proof diaphragm protected against abuse. Supplied complete with concentric-cable connector, 15-ft. shielded cable, wood handle, and interlocking metal base allowing use either as desk- or hand-mike. Handle is removable to permit mounting on standard 3/8" - 27 thread floor stands. Opalescent gray finish with bright chrome grille. **\$9.97**

(L) High Output Mike Model

A new, streamlined, semi-directional crystal microphone with relatively high output and exceptionally smooth frequency response up to 10,000 cycles. Ideal for public address and paging systems as well as communications work. 25-ft. cable and spring protector included. Chrome finished with blond plastic grille. **\$17.64**



ASTATIC

(M) Model "DN-Dynamic"

Incorporating the new unitary moving coil system and carefully proportioned acoustic circuit to achieve flat response from 50 to 7000 cycles. All the well-known features are incorporated in the new model, including Astatic's tilting head, swivel mount for semi- or non-directional positions. Note the new streamlining; finished in opalescent gray and with chrome grille. Complete with plug, connector and 15-ft. shielded cable. **\$14.46**

(N) Model D104 Crystal Microphone

Long proved for efficiency and dependability, Model D-104 has high output level, -48 db., for reduced RF feedback. New type yoke-driven, bridge-mounted Graphoil crystal element, improved shock-proof mounting and barometric compensation. Especially popular for close-talking applications in radio amateur use. Speech range response from 30 to 7,500 cycles. Finished in chrome. Includes interchangeable plug and connector, spring cable protector, 7-ft. shielded cable. **\$14.46**

(O) Model T-3 Crystal Microphone

A general-purpose crystal microphone with self-locking tilting head for non-directional or semi-directional use. Ideal for studio setups and amateur rigs, intercoms, p.a. systems. Output level -52 db.; frequency response substantially flat from 30 to 10,000 c.p.s. Gleaming chrome finish. Complete with interchangeable plug and socket connector and 25-ft. shielded cable. **\$16.08**

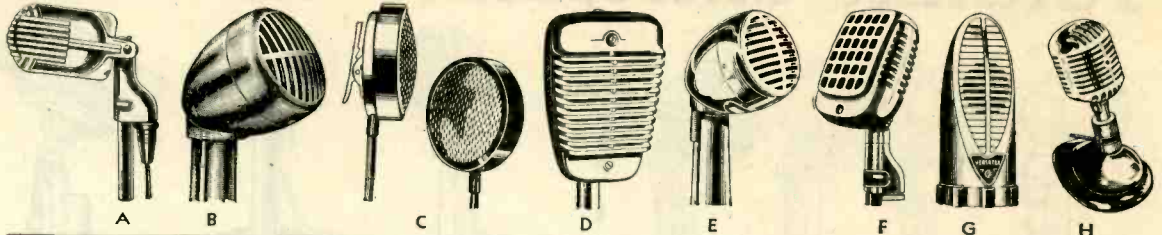
(O) Desk Stand Model GT-3

Model T-3 Mike with "grip-to-talk" desk mike stand. Built-in relay operating ON-OFF switch for remote control of transmitters and amplifiers. With socket connector, spring cable protector, 8 ft. two conductor, shielded, rubber-covered cable. Height 8 1/2". **\$19.32**

(P) SPECO "MAX-MIXER"

A simple, low-cost method of adding and mixing microphone inputs (two or more) to any amplifier. "Max-Mixer" cable plugs into microphone input, one, two, or three high impedance mikes plug into "Max-Mixer." Each mike is regulated by a separate volume control. Case forms shield for the network. Complete with 6-ft. flexibly shielded cable with screw-on connector; phone plug adapter for amplifier phone jack. **\$11.14**

SHURE Microphones - Cable Transformers



Shure Semi-directional Crystal Mikes

(A) "Stratoliner" Model 708A

An expensive-looking microphone at low cost. High output level (53.0 db. below 1 volt per bar) with wide-range, peak-free response (60-8,000 c.p.s.) for good reproduction of either voice or music. Genuine Bimorph crystal. Placed horizontally, Model 708A is semi-directional; placed vertically, it is non-directional in the horizontal plane. Swivel permits tilting through an angle of 90°. Pearl gray finish. Complete with 20-ft. shielded cable.

Cat. No. 20-056 Net Price **\$16.17**

(B) Model 707A

The ideal combination of good-quality performance and low cost. Peak-free response characteristics, typical semi-directional pickup, output 53 db. below 1 volt per bar. Moisture-proofed Bimorph crystal is mechanically isolated. Finished in pearl gray with high-polish plated front. With 7-ft. single conductor shielded cable with spring protector.

Cat. No. 20-057 Net Price **\$8.33**

(C) Lapel Mike Model 76B

Clips to the lapel for utmost convenience in public address, lecturing, with portable transmitters, etc. Excellent reproduction of speech is provided, while user can move freely. A pressure-actuated diaphragm-type crystal mike. Weight only 1½ ounces. Response from 40-6,000 cycles. High-frequency response is accentuated. 1½" diameter. With 25-ft. shielded cable. Output level 57 db. below 1 volt per bar.

Cat. No. 20-058 Net Price **\$15.88**

Microphone ON-OFF Switches



Model A83A — Quick and convenient plug-in switch for mike. No soldering connections. Attaches to any cable-conductor type Shure microphone. Arrow knob.

Cat. No. 20-059 Net Price **\$2.56**

Model A84A — Press-to-talk momentary-contact switch.

Cat. No. 20-060 Net Price **\$2.88**

Model A85B — Momentary relay type switch. For use with two-conductor shielded cable with crystal and high-impedance dynamic mikes only. Standard Shure receptacle. Satin-chrome finish, bakelite disc. Without cable.

Cat. No. 20-061 Net Price **\$4.82**

Cable Type Transformer



Matches 35 to 50 and 150 to 250 ohm microphones to high impedance amplifier input. High quality construction achieves a compact, sturdy unit. Case diam. 1½", length 2½".

Cat. No. 20-063 Net Price **\$8.97**

Electro-Voice Model 502 Mike Transformer

Designed for matching 50 and 250 ohm microphones to high-impedance amplifier. 40-20,000 c.p.s. response plus or minus 1 db. With four-contact connector. Shielded.

Cat. No. 20-121 Net Price **\$7.94**

Shure Semi-Directional Dynamic Mikes

(D) "Sonodyne" Model 51

For all general purpose use, including public address, recording, and communications, Model 51 is a pressure dynamic high-output mike with wide-range peak-free frequency response and semi-directional pickup characteristics; embodies the multi-impedance switch for 35-50 ohm, 150-250 ohm, and high impedance input. Frequency response 60-10,000 cycles. Smart pearl-gray case, functionally designed. Complete with built-in receptacle, two-conductor shielded plastic-jacketed cable and attached mike plug.

Cat. No. 20-052 Net Price **\$23.37**

(E) "Econodyne" Model 52

A sturdily constructed dynamic microphone for low-cost public address systems, recording, communications, and similar installations. Its high-quality performance is due to a smooth frequency response between 60-8,000 cycles and excellent semi-directional characteristics. Output 52 db below 1 volt per bar. High impedance. Complete with single-conductor plastic-jacketed attached cable.

Cat. No. 20-053 Net Price **\$14.70**

Unidirectional Crystal Mike

(F) "Monoplex" Model 737A

A high-output super-unidirectional crystal mike. Improved cardioid pickup pattern gives front-to-rear sensitivity ratio of 14 to 1 for random sound. It offers the advantages of Shure acoustic phase shifting network with diaphragm type element at low cost. Crystal is "metal-sealed" to withstand climate conditions. Pivot at rear of case permits aiming at sound source, or pointing upwards for non-directional horizontal pickup. Frequency response 60-10,000 cycles. Built-in cable connector. With 20-ft. shielded cable.

Cat. No. 20-054 Net Price **\$23.37**

(G) "Versatex" Model 718A

A new high-output diaphragm-type crystal mike of unusually versatile design. Fits conveniently in the palm of the hand, can be set right down on the table, and may be used on the conventional floor stand. With frequency response from 60 to 8,000 cycles, typical semi-directional pickup, and high output (53 db below 1 volt per bar) it is the ideal "ham" mike and very suitable for home recording, low cost p.a. systems, call systems, etc. High impedance. In a durable plastic streamlined case. Cartridge unit mounted in rubber for mechanical isolation. 1½" - 27 thread takes any floor stand. With 7-ft. cable.

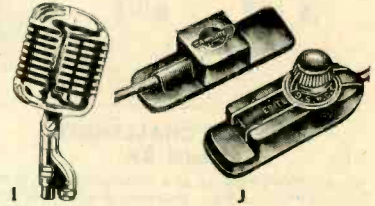
Cat. No. 20-055 Net Price **\$6.79**

UTC Microphone Cable Transformers



Designed to be inserted in the cable circuit, and ruggedly constructed to withstand mechanical abuse; connections to terminal boards inside the end caps; spring strain relief; units may be located anywhere on the cable within twenty-five feet of the amplifier; 1½" diameter, 2½" long, weight 1 lb.

No.	Type	Matching	Net Price
20-321	MC-1	Primary tapped 30/50 and 200/250 ohms, secondary to grid, standard idlety.	\$7.64
20-322	MC-2	Primary tapped 30/50 and 200/250 ohms, secondary to grid, high idlety.	\$10.00



Unidirectional Dynamic Mikes

(H) "Broadcast" Model 556

Especially constructed to meet the requirements of the broadcast studio, and tested to close tolerances in frequency response and directivity. This super-cardioid type, unidirectional, moving-coil mike, has front-to-rear sensitivity ratio of 14 to 1 for random sounds. New Shure acousto-mechanical circuit, containing a moving-coil element with a high-flux magnet, makes possible high efficiency and smooth peak-free response from 40 to 10,000 c.p.s. and solves feedback problems. Mechanically isolated from vibration by spring suspension inside mike case. Swivel permits head to be aimed directly at sound source. Practically immune to influence of moisture, temperature, and mechanical vibration.

Multi-impedance switch, built in at the rear of the microphone, permits Model 556 to be worked directly into a 30-50 ohm line, a 150-250 ohm line, or a high impedance output. Switch positions are marked. Rich, chrome finish. 7-ft. shielded double-conductor cable.

Cat. No. 20-050 Net Price **\$54.40**

(I) Modern Desk Stand

Model S36A — Is a beautiful, streamlined mount with firm support at the correct height. Fits Shure connector type mikes, concealing plug in base. Adapter plate and tubing provided for other types. Removable button for installation of bushing switch or volume control. Pearl gray finish. Base 2½" high, 5" wide, 7" long.

Cat. No. 20-062 Net Price **\$2.94**

(I) "Unidyne" Model 55

Perhaps the most widely used mike in the world for public address, Model 55 is excellent for recording, communications, small studio and remote broadcasting. It has all the extreme unidirectional characteristics and mechanical properties of Model 556 above with the exception of the vibration isolation unit. Model 55 also has the built-in multi-impedance switch described above. With 25-ft. shielded, double conductor cable and microphone plug attached.

Cat. No. 20-051 Net Price **\$39.70**

(J) Amperite Kontak Mikes

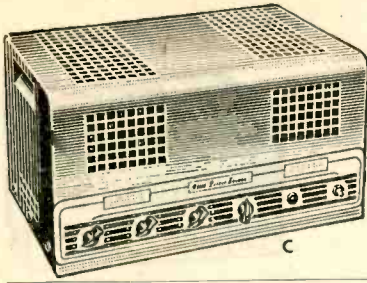
For all string instruments such as violin, guitar, ukulele, double bass, piano, etc. Gives an ordinary violin the volume and depth of a "Strad." No string changes, no drilling, attached without tools. Operated with high-gain amplifier, 90 db. or more. Can be used with most radios. Response from 40 to 9,000 cycles. Output -40 db. Equipped with 15-ft. cable.

MODEL SKH — Cat. No. 20-305 Net Price **\$7.06**

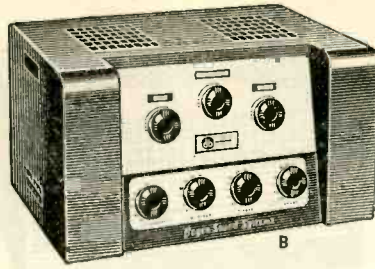
MODEL KKH — Same as above in all specifications but with built-in volume control for convenient adjustment by musician.

Cat. No. 20-306 Net Price **\$10.58**

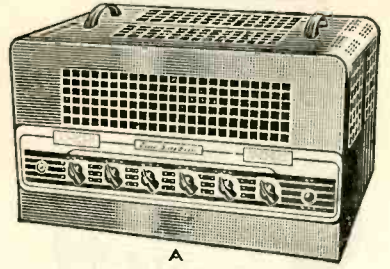
BOGEN AMPLIFIER SYSTEMS



C



B



A

(A) E75 HIGH POWER SYSTEMS—70 WATTS

The only amplifier on the market with dual-amplifier protection for continuous service, eliminating the fear of complete breakdown of the sound system. The E75 amplifier has two separate power amplifiers, driven by a common preamplifier, with separate power supply, inverse-feedback circuit, and master gain control for each amplifier. Should one power amplifier fail, 35 watts is still supplied by the other—an invaluable guarantee of continuous service for stadia, airport, theatre, and factory sound systems. Controls are mounted on a single panel, and include two mikes, one phono, a bass-treble tone compensator, and two master gain.

E75 AMPLIFIER SPECIFICATIONS

Power output—70 watts at less than 4% distortion; 100 watts peak power.
 Frequency response—30-14,000 cycles, ± 1 db.
 Gain—Microphone, 124 db. Phono, 80 db. Hum—minus 70 db. at 100 w.
 Input impedance—2 microphone channels, 1 phono channel, 500,000 ohms each.
 Output impedance—Each power amplifier tapped at 4-8-15-500-1000 ohms.
 Power consumption—290 watts, 117 volts, 50-60 cycles.
 Tubes—2-6SF5, 2-6SL7GT, 2-6F6G, 2-7Z4, 4-6L6G, 2-5U4G; total 14.
 Dimensions—17½ x 10 x 12½" deep.

(A) Model E75 Amplifier

Cat. No. 33-101 Complete with tubes. Net Price **\$134.24**

(A, D, E) Model E75B Indoor System

Complete system includes E75 amplifier, with tubes; 4 Bogen 12" heavy-duty C12B speakers each mounted in BX12 walnut baffle, and each with 25-ft. speaker cable and plug; 1 Astatic JT30 microphone with handle, interlocking base, 15-ft. cable, and plug.
 Cat. No. 33-102 Net Price **\$277.50**

(A, D, F) Model E75TU Outdoor System

Includes E75 amplifier with tubes; 4 Bogen-University LH trumpets and SAH driver units; 1 Astatic JT30 microphone with 15-ft. cable, handle, and plug.
 Cat. No. 33-103 Net Price **\$339.60**

(C) H50 STANDARD AMPLIFIER SYSTEMS—50 WATTS

A superb quality amplifier built for applications where frills are not needed but with emphasis on durability, power, and down-to-earth usefulness. Has three individually controlled channels, 2 mikes, 1 phono. A treble-bass tone compensator provides broad-range tone correction. Inverse feedback provides automatic regulation of output regardless of speaker load changes.

H50 AMPLIFIER SPECIFICATIONS

Power output—50 watts at less than 5% distortion. Peak power—90 watts.
 Frequency response—30-20,000 cycles ± 2 db.
 Gain—Microphone inputs (2), 120 db. Phono input (1), 80 db.
 Hum—Fund. -74 db.; Mic. -59 db. (referred to rated output).
 Input impedance—Mic. channels (2), 500,000 ohms; phono channel, 500,000 ohms.
 Output impedance—4-8-16 ohms and two constant-voltage taps (70 volts and 140 volts).
 Power consumption—240 watts, 117 volts, 50-60 cycles.
 Tubes—3-6SC7, 1-6SL7, 1-6SN7, 2-807, 1-5R4GY, 1-5Y3; total 9.
 Dimensions—17 x 11½ x 9½" high.

(C) Model H50 Amplifier

Cat. No. 33-112 Complete with tubes. Net Price **\$110.25**

(B) NEW HX50 HIGH FIDELITY SYSTEMS—50 WATTS

The new HX50 amplifier incorporates the new revolutionary Bogen development in sound engineering—anti-feedback control—for unmatched high fidelity. While preserving tone quality and output level, it permits "tuning-out" acoustic feedback in the sound system, thereby permitting the sound level of the system to be raised 10 db. above the usual level. The result is that more power may be used, the system is more stable, and microphone placement is far less critical. Other features include: push-pull "807" output with multi-stage regulation; stabilized input stages for minimum noise; safety interlock switch disconnects high voltage when cage is removed; oil-filled high-voltage filter capacitors.

HX50 AMPLIFIER SPECIFICATIONS

Power output—50 watts at 3% distortion; peak power 90 watts.
 Frequency response—20-20,000 cycles ± 2 db.
 Tone range control—Bass control, +20 to -30 db. at 100 cycles; treble control, +21 to -14 db. at 10,000 cycles.
 Gain—Microphone channels (3), 121 db.; phono (1) 89 db.
 Hum—Fund. -65 db.; mic., -58 db. (to rated output).
 Input impedance—(3) microphone channels, 500,000 ohms; phono channel (1), 500,000 ohms.
 Output impedance—4-8-16 ohm and 2 constant-voltage taps (70 and 140 volts).
 Power consumption—240 watts, 117 volts, 50-60 cycles.
 Tubes—4-6SC7; 3-6SL7; 1-6SN7; 1-5R4GY; 2-807; 1-5Y3; total 12.
 Dimensions—17 x 9 x 13½" deep.

(B) Model HX50 Amplifier

Cat. No. 33-106 Complete with tubes. Net Price **\$145.14**

(B, E, G) Model HX50B Indoor System

Complete system includes HX50 amplifier complete with tubes; four, Jensen 12" heavy-duty P12P speakers mounted in Bogen Deluxe BX12 walnut baffles each with 25-ft. cable and plug; one Astatic N30 crystal microphone with 12½-ft. cable and plug.
 Cat. No. 33-107 Net Price **\$288.99**

(B, G, F) Model HX50TU Outdoor System

System includes HX50 amplifier with tubes; three, Bogen-University LH trumpets and MA25 units; one, Astatic N30 crystal microphone with 12½-ft. cable and plug.
 Cat. No. 33-108 Net Price **\$280.59**

(C, D, E) Model H50 Indoor System

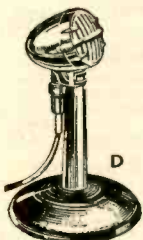
System includes: H50 amplifier with tubes; four Bogen 12" heavy-duty C12B speakers mounted in Bogen Deluxe BX12 baffles each with 25-ft. speaker cable and plug; one Astatic JT30 microphone with handle, interlocking base, 15-ft. cable and plug.

Cat. No. 33-113 H50B system complete as above. Net Price. \$253.35

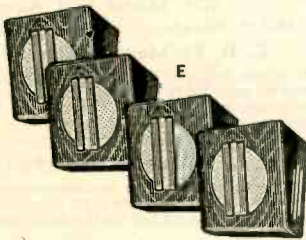
(C, D, H) Model H50TU Outdoor System

System includes H50 amplifier with tubes; three Bogen-University PH trumpets and SAH units; one Astatic JT30 microphone with handle and interlocking base, with 15-ft. cable and plug.

Cat. No. 33-114 Model H50TU system complete as above. **\$238.80**
 Net Price



D



E



F



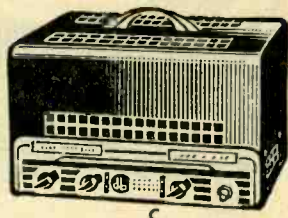
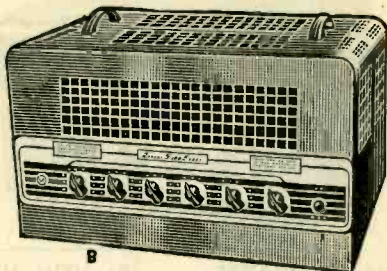
G



H

There is a Bogen Amplifier System that will Meet Your Requirements

BOGEN AMPLIFIER SYSTEMS



(A) EX326 DE LUXE UNIVERSAL MOBILE SYSTEMS

Nothing has been spared to make EX326 systems the very finest in universal sound systems. For indoor or outdoor use, on 6 volts DC or 115 volts AC, with rugged, faultless, high-quality performance. 32 watts of power at less than 5% distortion. Three separate input channels, 2 mic. and one phono, can be mixed and faded. Triple-range electronic tone-corrector permits individual boosting or attenuating of the bass and treble registers.

MODEL EX326 SPECIFICATIONS

Power output — 32 watts at less than 5% distortion. Peak power — 40 watts.
 Frequency response — 30-12,000 cycles ± 2 db.
 Gain — Microphone 120 db.; phono 70 db.
 Hum — AC operation — 70 db.; DC operation — 60 db.
 Input Impedance — Microphone channels (2) 500,000 ohms; phono channel 500,000 ohms.
 Output Impedance — 4-8-15-250-500 ohms, available at terminal strip and 2 built-in speaker sockets.
 Power consumption — 120 watts, 117 volts AC; 28 amps., 6 volts DC.
 Tubes — 3-6SF5, 2-6SL7GT, 2-6L6G, 1-5U4G; total, 8.
 Dimensions — 16 x 16 x 10 $\frac{1}{2}$ " high.

The EX326 is completely self-contained; built-in 6-volt DC and 115-volt AC power supply; constant-speed phono-motor protected by hinged cover. Changeover from 6-volt to 115-volt operation is automatic and foolproof. Standby switch on illuminated sloping control panel disconnects B supply, but keeps filaments heated, ready for instant use; standby operation by remote control is available.

(A) Model EX326

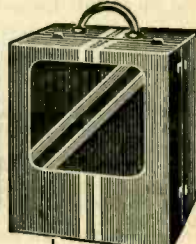
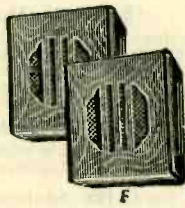
Cat. No. 33-135 Complete with phono and tubes. Net Price **\$150.00**

(A, E) Model EX326F Basic System

Complete system includes: EX326 amplifier with tubes; two Bogen Alnico 5 C12C 12" speakers, each with 15' cable and plug; one Astatic N30 crystal microphone with 12 $\frac{1}{2}$ ' cable and plug.
 Cat. No. 33-136 Model EX326F as above. Net Price **\$181.95**

(A, E, G) Model EX326TU Outdoor System

Complete system includes: EX326 amplifier with tubes; two Bogen-University PH trumpets and SAH units; one Astatic N30 crystal microphone with 12 $\frac{1}{2}$ ' cable and plug.
 Cat. No. 33-137 Model EX326TU as above. Net Price **\$239.55**



(B) MODEL E14 SYSTEMS—14 WATTS

Incorporating many of the features of the high power systems, Model E14 is designed to best serve restaurants, small lecture halls, single floor factories — the greatest number of sound system installations — which usually require about 14 watts of audio power. Provides 3 input channels for 2 microphones, one phono pickup, and noiseless electronic mixing of all three channels. Accurate bass-treble corrector to compensate for acoustic conditions. Two 6L6's beam power output tubes deliver 14 watts. Inverse feedback for uniform frequency response, regardless of speaker load variations. Output taps for quick and simple speaker matching.

MODEL E14 AMPLIFIER SPECIFICATIONS

Power output — 14 watts at less than 5% distortion. Peak power — 25 watts
 Frequency response — 40-12,000 cycles ± 1.5 db.
 Gain — Microphone channels (2), 115 db. Phono channel, 75 db.
 Hum — Fund. — 64 db.; m.c. — 57 db. (referred to rated output).
 Input Impedance — Microphone channels, 500,000 ohms. Phono channel, 500,000 ohms.
 Output Impedance — 4-8-15-250 and 500 ohms available at both terminal strip and two speaker sockets.
 Power consumption — 90 watts, 117 volts, 50-60 cycles.
 Tubes — 2-6SF5, 1-6SN7GT, 1-6SC7, 2-6L6G, 1-5Y3GT.
 Dimensions — 14 x 7 $\frac{1}{2}$ x 8" high.

(B) Model E14 Amplifier

Cat. No. 33-118 Complete with tubes. Net Price **\$57.00**

(B, D, F) Model E14B Indoor System

Complete system includes: E14 amplifier with tubes; two Bogen Alnico 5 C12C speakers mounted in Bogen WA12 baffles, each with 25-ft. cable and plug; one Astatic JT30 microphone with handle, interlocking base, 15-ft. cable and plug.
 Cat. No. 33-119 Model E14B complete as above. Net Price **\$103.35**

(B, D, I) Model E14P Portable System

Same as Model E14B above but with speakers mounted in Bogen K20 portable speaker baffle which also carries the amplifier.
 Cat. No. 33-120 Model E14P complete as above. Net Price **\$103.65**

(C) MODEL E10 SYSTEMS—10 WATTS

The standard for low-power fixed and portable installations, Model E10 outperforms everything in its rated class. If a portable unit is required that can be set up and will operate perfectly at a moment's notice, with assurance of continuous dependable operation, a Bogen E10 system is recommended. One microphone channel, one phono channel, full-range tone control. Each channel has individual gain control which can be mixed and faded. Controls and power switch mounted on handsome 4-color control panel. Two 6V6's in push-pull provide 10 watts, 13 watts when needed. Build-in multiple impedance selector. Constant 70-volt output available.

MODEL E10 AMPLIFIER SPECIFICATIONS

Power output — 10 watts at less than 5% distortion. Peak power — 17 watts
 Frequency response — 60-10,000 cycles ± 1.5 db.
 Gain — Microphone channel, 115 db. Phono channel, 80 db.
 Hum — Fund. — 64 db.; m.c. — 57 db. (referred to rated output).
 Input Impedance — Microphone channel, 500,000 ohms; phono channel, 500,000 ohms.
 Output Impedance — 4-8-15-500 ohms. 500-ohm tap is equivalent of 70-volt constant-voltage tap, available at two speaker sockets.
 Power consumption — 75 watts, 117 volts, 50-60 cycles.
 Tubes — 2-6SC7, 2-6V6GT, 1-5Y3GT.
 Dimensions — 7 x 11 x 7 $\frac{1}{2}$ " high.

(C) Model E10 Amplifier

Cat. No. 33-125 Complete with tubes. Net Price **\$36.90**

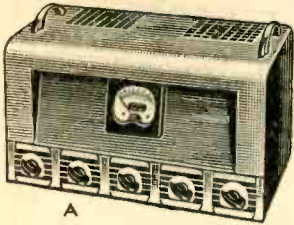
(C, D, F) Model E10B Indoor System

Complete system includes: E10 amplifier with tubes; two Bogen Alnico 5 C10C speakers mounted in Bogen BA12 baffles, each with 25-ft. cable and plug; one Astatic JT30 crystal microphone with handle, interlocking base, 15-ft. cable and plug.
 Cat. No. 33-126 Model E10B complete as above. Net Price **\$78.15**

(C, D, H) Model E10P Portable System

Same as Model E10B but with speakers mounted in Bogen Model 10A portable speaker baffle which also carries amplifier.
 Cat. No. 33-127 Model E10P system complete as above. Net Price **\$78.90**

BOGEN AMPLIFIERS ACCESSORIES - CHALLENGER SOUND SYSTEMS



(A) BOGEN 4-CHANNEL PREAMP LLO

A preamplifier for installations requiring low-impedance multi-channel inputs, permitting mixing of four microphones with long microphone cables. Output impedances of 50, 125, 200, or 500 ohms are available. Separate gain control is provided for each channel. Master control adjusts overall volume. Built-in power supply facilitates connection to any existing amplifier.

MODEL LLO SPECIFICATIONS

Output — "O" level; response — 20-12,000 cycles \pm 2 db.; gain — 75 db.; hum — minus 63 db.; input impedance — 4 channels, 50, 200, or 500 ohms; output impedance — 50, 125, 200 or 500 ohms; power consumption — 32 watts, 117 volts AC; tubes — 5-6SF5, 1-6SJ7, 1-6X5GT; dimensions — $14\frac{1}{2} \times 8 \times 7\frac{1}{4}$ " high.

Cat. No. 33-140 Model LLO preamplifier complete with tubes. Net Price **\$158.25**

Note: Model HH, high input and high output impedance 4-channel preamplifier and Model HLO, high input and low output impedance model are available on special order.

(C) Bogen Model K30 Portable Carrying Case

Portable dual 12" speaker-amplifier case of rugged plywood construction, beautifully finished with durable leatherette. Will house two 12" speakers and provides amplifier space $15\frac{1}{2} \times 10\frac{1}{2} \times 9\frac{1}{2}$ " deep. Overall dimensions, $16\frac{1}{2} \times 14\frac{1}{2} \times 22\frac{1}{2}$ " high. **\$15.30**

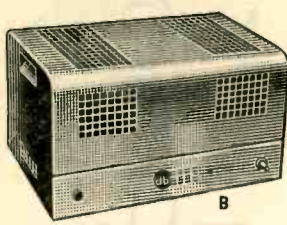
Cat. No. 33-145 Net Price

(D) Bogen Portable Dual 12" Speaker Case

DELUXE MODEL 140

A portable case which divides into two completely enclosed heavy-duty 12" infinite baffles, each with an auxiliary low-frequency radiator for extended bass response without boom or resonance. Case and speaker panels are built of $\frac{3}{4}$ " plywood, strongly reinforced and covered with attractive durable leatherette. Dimensions (closed) $22\frac{1}{2} \times 18\frac{1}{2} \times 12\frac{1}{2}$ " deep. **\$19.05**

Cat. No. 33-146 Net Price



(B) BOGEN BOOSTER AMPLIFIERS

50 WATTS — 125 WATTS

Two new boosters embodying the latest developments in design and the most advanced techniques in construction are perfect for sound systems in industrial plants, airports, stadia — wherever undistorted high power is required. An input signal of 5 volts will drive booster to rated output; boosters may be paralleled without increasing size of driver. Constant-voltage output taps eliminate difficulties in speaker matching when different loads are required for different speakers in same system. Multi-stage inverse feedback gives excellent regulation regardless of speaker load variations. Input section condenser of high-voltage filter is oil-filled; all resistors, condensers are mounted on terminal boards; all wiring is of laced cable type. Output tubes are of transmitter type; all components are conservatively rated. Provision for remote-control relay. Also embodies provision for mounting relay on booster chassis. Safety interlock switch automatically disconnects high voltage when cage is removed.

(B) Model G050 Specifications—50 Watts

Power output — 50 watts at less than 5% distortion. Peak power — 90 watts.

Frequency response — 20-20,000 cycles \pm 1 db. Gain — 48 db.

Hum — Minus 70 db. (referred to rated output).

Input — High impedance (1), 100,000 ohms.

Output impedance — 4-8-16 ohms and two constant-voltage taps, 70 and 140 volts.

Power consumption — 200 watts, 117 volts, 50-60 cycles.

Tubes — 1-6SL7, 1-6SN7, 2-807, 1-5R4GY, 1-5Y3; total, 6.

Dimensions — $17\frac{1}{2} \times 11\frac{1}{2} \times 9\frac{1}{2}$ " high.

Cat. No. 33-138 Model G050 booster amplifier complete with tubes.

Net Price **\$89.25**

(B) Model H0125 Specifications—125 Watts

Power output — 125 watts at less than 5%. Peak power — 140 watts.

Frequency response — 20-20,000 cycles \pm 1 db. Gain — 53 db.

Hum — Minus 65 db. (referred to rated output).

Input — High impedance (1) 100,000 ohms.

Output impedance — 90 ohms, and two constant-voltage taps, 70 and 140 volts.

Power consumption — 400 watts, 117 volts, 50-60 cycles.

Tubes — 3-6SN7, 1-6SL7, 2-807, 1-5R4GY, 1-5Y3; total 8.

Dimensions — $17\frac{1}{2} \times 11\frac{1}{2} \times 9\frac{1}{2}$ " high.

Cat. No. 33-139 Model H0125 complete with tubes. Net Price **\$111.75**

CHALLENGER AMPLIFIER SYSTEMS

BOGEN "CHALLENGER" AMPLIFIER SYSTEMS

The new SelectTone tone corrector is embodied in all models of Challenger amplifiers, a feature which provides a range and selection of tone response keyed to the program and available previously in only the most expensive commercial sound equipment. This unique tone control provides four distinctive frequency responses: first is "Deep Bass" for deeply accentuated bass and older record reproduction; second position is "Mellow" useful with noisy records and standard broadcast band tuners because high frequencies are sharply reduced; position 3 is "Crisp" and ideal for speech frequency response; fourth position is "Brilliant" for recorded music and voice, it accentuates the bass and treble, effecting a sensation of "presence."

(E) MODEL CC60—60 WATT AMPLIFIER SYSTEMS

To command 60 watts of power with faithful response and dependable performance, the Challenger CC60 offers incomparable quality features at an amazingly economical price. Four dials offer individual control of two microphones, phonograph, and SelectTone. Constant-voltage output makes speaker matching a simple matter. Two 807's in push-pull output; inverse feedback for better response and regulation. Two oil-filled high-voltage filter capacitors for greater stability. Terminal strip and 2-speaker sockets for connection of speaker lines. Fused line. Specifications are: power output — 60 watts; response — 30-12,000 cycles \pm 2 db.; gain — mic. no. 1, 120 db., mic. no. 2, 120 db., phono, 85 db.; output impedance — 4, 8, 15 ohms, 70 and 140 volts. Tubes — 2-6SF5, 1-6SL7GT, 2-807, 1-5Y3GT, 1-5R4GY; dimensions — $17 \times 11\frac{1}{2} \times 9\frac{1}{2}$ " high.

Cat. No. 33-220 Model CC60 amplifier complete with tubes. **\$79.38**

Net Price

(E, F, G) Model CC60B Indoor System

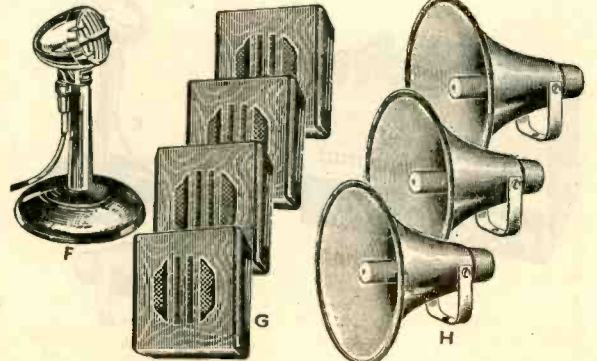
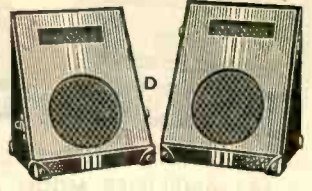
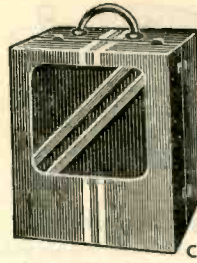
Complete system includes: Model CC60 Amplifier with tubes and cage; four Alnico 5 PM speakers each with 25' cables and plugs, mounted in 12" hand-finished wall baffles; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug. **\$149.85**

Cat. No. 33-221 Model CC60B as above. Net Price

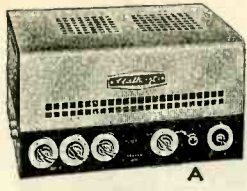
(E, F, H) Model CC60T Outdoor System

Complete system includes: Model CC60 amplifier with tubes and cage; three University PH trumpets with MA25 driver units; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug. **\$183.31**

Cat. No. 33-222 Model CC60T as above. Net Price



BOGEN "CHALLENGER" Sound Systems



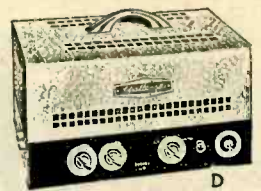
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B



C



D

(A) AMPLIFIER MODEL CC30—30 WATTS

Only "Challenger" engineering can offer these outstanding features with a 30-watt power output at a sensationally economical price! Individual controls for two microphones, phono, and SelecTone; inverse feedback for better response and regulation; terminal strip and 2-speaker plug-in sockets for connection of speaker lines; molded Bakelite sockets throughout; fused line; recessed carrying handles. PLUS these specifications: power output — 30 watts, response — 30–12,000 c.p.s. ± 2 db.; gain — m.c. (each) 118 db., phono, 85 db.; output impedance — 4, 8, 15 ohms, 70 volts; tubes — 2-6SC7, 1-6SL7GT, 2-6L6G, 1-5U4G; dimensions — CC30, 15 x 10 x 8" high — CC30X 15 x 10 x 10" high.

(A) Model CC30 Amplifier

Cat. No. 33-212 Model CC30 with cage, tubes as above. **\$47.04**
Net Price

(B) Model CC30X Amplifier and Phono

Cat. No. 33-213 Model CC30 Amplifier with built-in phono top and tubes. Net Price **\$59.09**

(E, G) Model CC30P Portable System

Complete system includes Model CC30 amplifier with tubes and cage; two Alnico 5 PM speakers, each with 25' cable and plug, mounted in split, portable speaker baffle which also carries the amplifier; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.
Cat. No. 33-214 Model CC30P as above. Net Price **\$90.55**

(A, G, H) Model CC30B Indoor System

Complete system includes CC30 amplifier with tubes and cage; two 12" Alnico 5 PM speakers, each with 25' cable and plug, mounted in 12" hand-finished wall baffles; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.
Cat. No. 33-215 Model CC30B as above. Net Price **\$86.58**

(B, G, H) Model CC30X-B Indoor Amplifier-Phono System

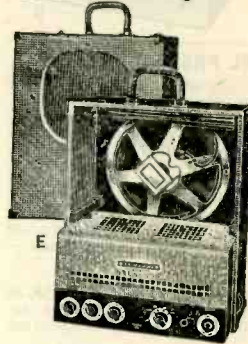
System same as CC30B above, except phono top amplifier, Model CC30X, is furnished in place of Model CC30.
Cat. No. 33-216 Model CC30X-B as above. Net Price **\$98.64**

(C) AMPLIFIER MODEL CC8—8 WATTS

Featuring inverse feedback for better response and regulation, and individual controls for microphone, phono and selectone, Model CC8 is a moderate-power unit, at a moderate price that offers high-value performance. Power output is 8 watts with response of 80–12,000 cycles ± 2 db. Plug-in connection for speaker line is provided. Performance features are: gain — m.c., 108 db.; phono, 71 db.; output impedance — 4, 8, 16 ohms. Molded bakelite sockets throughout. Tube complement — 1-6SF5, 1-6SJ7, 1-6L6GA, 1-5Y3GT. Dimensions with cage are: 11 x 7 x 7 1/2" high.
Cat. No. 33-201 Model CC8 with tubes less cage. Net Price **\$24.99**
Cat. No. 33-202 Cage for Model CC8 amplifier. Net Price **\$2.94**

(F, G) Model CC8S Portable System

Complete system includes CC8 amplifier with tubes; one, 8" Alnico 5 PM speaker mounted in portable carrying case; one, Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.
Cat. No. 33-203 Model CC8S System as above. Net Price **\$49.10**



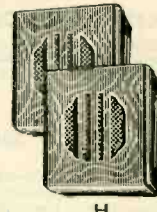
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I

(D) AMPLIFIER MODEL CC18—18 WATTS

Answering the need for an economically priced medium-power amplifier with quality features, Model CC18 amplifier offers these advantages: individual controls for microphones, phono, SelecTone; constant-voltage output for ease of speaker matching; inverse feedback for better response, and regulation; terminal strip and 2-speaker plug-in sockets for speaker connection; fused line; molded Bakelite sockets throughout. CC18 specifications are: power output — 18 watts; response — 30–12,000 c.p.s. ± 2 db.; gain — m.c., 118 db., phono, 78 db.; output imp. — 4, 8, 15 ohms, 70 volts; tubes — 2-6SF5, 1-6SL7GT, 2-6V6GT, 1-5Y3GT; dimensions — 14 x 8 x 8" high.
Cat. No. 33-206 Model CC18 amplifier complete with tubes, cage. Net **\$37.48**

(F, G) Model CC18P Portable System

Complete system includes: Model CC18 amplifier with tubes and cage; two, 12" Alnico 5 PM speakers each mounted in split, portable speaker baffle which also carries the amplifier, with 25' cable and plug; one, Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.
Cat. No. 33-207 Model CC18P System as above. Net Price **\$81.00**

(D, G, H) Model CC18B Indoor System

Complete indoor system includes: CC18 amplifier with tubes and cage; two, Alnico 5 PM speakers each with 25' cable and plug, mounted in 12" hand-finished wall baffles; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable and plug.
Cat. No. 33-208 Model CC18B System as above. Net Price **\$77.03**

(J) MODEL CC618—UNIVERSAL 18 WATT SYSTEMS

AMPLIFIER-AND-PHONO UNITS

The versatile Challenger Model CC618 operates on 6 volts DC or 115 volts AC with instant, foolproof change-over from battery to AC power. Features remote control of "standby" to reduce current drain. Built-in constant-speed phonograph. Constant-voltage output permits easy matching of speakers. Individual controls for microphone, phono, SelecTone. Terminal strip and two speaker plug-in sockets for connection of speaker lines. Inverse feedback for better response and regulation. Specifications are: power output — 18 watts; response — 30–12,000 cycles, ± 2 db., gain — m.c., 118 db., phono, 78 db.; output impedance — 4, 8, 15 ohms, 70 volts; tubes — 2-6SF5, 1-6SL7GT, 1-7Z4, 2-6V6GT; dimensions — 15 x 10" high.
Cat. No. 33-235 Model CC18 amplifier with tubes, cage, AC and DC cable and built-in phono top. Net Price **\$75.26**

(J, K, L) Model CC618T Universal System

Complete system includes: CC618 amplifier with tubes, cages, cables, and phono top; one University PH trumpet with MA25 driver; one Astatic JT30 crystal microphone with handle, interlocking base, 15' cable, and plug.
Cat. No. 33-236 Model CC618T System as above. Net Price **\$116.69**



J



K



L

TALK-A-PHONE INTER-COM SYSTEMS

Flexible Systems For Every Inter-com Need

(A) "Chief Forty Niner" Push-button System

The ultimate of completeness and flexibility in intercommunication. UL approved. Master stations may talk with any other master as well as with all staff stations. The staff station may answer the master and originate calls to one, two, or six masters, depending on its capacity. Staff stations converse with masters only. Any station can be used as either "private" or "non-private" in the same system. "Non-private" staffs allow answering from a distance of 50 feet without leaving work. Beautifully styled; bakelite, walnut-finish case; master has translucent lighting to show when unit is "ON" or "OFF." Multi-matic selector: six-station master has 6 push-buttons; 12-station master has 12 push-buttons. "Hold-a-matic" control allows conference among a group of stations. Stations may be up to 3000 feet apart. Furnished complete with junction box, ready to plug in, and with simple instructions for easy installation. All master stations are 12" x 9" x 7".

Model C-4906 — Push-button master with 6 station capacity, complete with tubes. **\$42.50**
Cat. No. 43-009 Net Price

Cable 6212 — For interconnecting C-4906.
Cat. No. 43-010 Net per Foot **17c**

Model C-4912 — Push-button master for 12 stations, complete with tubes. **\$52.50**
Cat. No. 43-011 Net Price

Model C-4912X — Same as C-4912 except equipped with privacy earphone. **\$64.50**
Cat. No. 43-012 Net Price

Cable 6224 — For interconnecting C-4912. **35c**
Cat. No. 43-013 Net per Foot

Model C-41 — Staff station for origination of call to one master. **\$11.00**
Cat. No. 43-014 Net Price

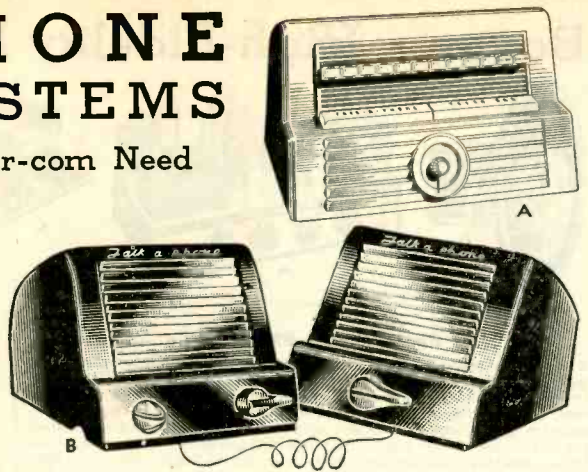
Cable 6204 — For connecting C-41 station. **6c**
Cat. No. 43-015 Net per Foot

Model C-42 — Staff station for origination of calls to 2 masters. **\$16.50**
Cat. No. 43-016 Net Price

Model C-46 — Staff station with push-button controls for originating calls to 6 masters. **\$29.95**
Cat. No. 43-017 Net Price

Cable 6004 — For connecting C-42 and C-46. **9c**
Cat. No. 43-018 Net per Foot

for
OFFICE
FACTORY
HOME



Model LM (B) Master Selective System

LM Master Systems consist of one Master unit which can be connected with one or more (up to 10) sub-stations. Model LM-5 has a maximum capacity of 5 sub-stations. Model LM-10 has a maximum of 10 sub-stations. The master station can talk "privately" to any one of the sub-stations or to all at the same time. Sub-stations can be connected "privately" or "non-privately." Sub-stations can originate calls to the master station. Sub-stations can be at a considerable distance from the master unit. On "non-private" system, persons at sub-stations need operate no controls and can reply from a distance. No current consumed by sub-stations, can be installed almost anywhere. Cabinets measure 8 1/2" x 6 1/2" x 7 1/2". Master stations operate on 115 volts AC/DC. U.L. approved.

Model LM-5 Master Selective system for five sub-stations complete with tubes and instructions. **\$22.50**
Cat. No. 43-001 Net Each
Model LM-10 Master Selective system for 10 sub-stations complete with tubes and instructions. **\$29.95**
Cat. No. 43-002 Net Each
Model LR-3 Sub-station unit for LM-5 or LM-10. **\$7.50**
Cat. No. 43-003 Net Each
Cable No. 5303 — 3-conductor cable for use between LR-3 and LM-5 or LM-10. **3c**
Cat. No. 43-004 Net per Foot

Model LS (B) Super Selective System

Consist of all master units. Model LS-5 for five stations, Model LS-10 for ten stations. Any station in the system can call any other and carry on a 2-way conversation, up to a total of 5 with LS-5, and 10 with LS-10. Five simultaneous private conversations can be conducted with LS-10; 2 simultaneous private conversations can be held with LS-5. All master stations are private. Stations cannot listen in on each other. Variable volume from a whisper to full room volume. Stations can be located up to 1000 or 2000 feet apart. Cable runs from first unit to second, from second to third, etc., until last unit is reached, no cable between last and first units. Cabinets measure 8 1/2 x 6 1/2 x 7 1/2. Operates on 115 volts AC/DC. U.L. approved.

Model LS-5 — Super Selective unit for five stations complete with tubes and instructions. **\$22.50**
Cat. No. 43-005 Net Each
Model LS-10 — Super Selective unit for 10 stations complete with tubes and instructions. **\$29.95**
Cat. No. 43-006 Net Each
Six-conductor cable, No. 5508, for inter-connecting LS-5 units as outlined above. **10c**
Cat. No. 43-007 Net per Foot
11-conductor cable, No. 9911, for interconnecting LS-10 units as outlined above. **20c**
Cat. No. 43-008 Net per Foot

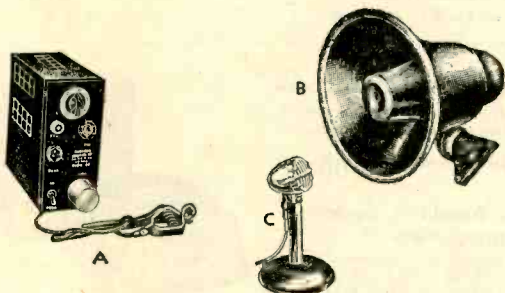
How to Measure Cable Requirements for "Chief Forty Niner"

To interconnect master stations, measure from first master to second master only, from second to third only, etc., and then total. To connect C-41 staff station, measure from staff station to the one master to which staff originates calls. To connect C-42 and C-46, measure a separate length of cable from staff station to each master to which staff originates calls. (For each C-42 or C-46, follow same procedure.)

(B) TWO-STATION INTERCOM SYSTEM, MODEL LC-2

The ideal communication system for home, office, store, and industry. Housed in smart Bakelite cabinet of walnut finish. Easy to install without calling for service of technician. Instructions included for wiring for (1) "Monitor" duty, and (2) intercom duty. As "Monitor," sub-station picks up every sound even though originating as far as 40 feet from sub-station, simultaneously serves as a receiver. For intercom duty, both Master and sub-station have "press-to-talk" switch. Release of switch permits listening. Master cannot listen in on sub-station, but sub-station can originate

calls. Sound and noise from sub-station is not heard on Master except when in actual operation. Master has the On-Off switch and volume control. 110-120 volts AC/DC UL listed. Complete with Master unit, sub-station, fifty feet of cable, tubes, instructions. Dimensions of cabinets: 8 1/2" x 6 1/2" x 7 1/2". **Net Price \$23.50**
Cat. No. 43-023
Extra 3-conductor cable in lengths up to 2,000 feet. **Net per ft. 5c**
Cat. No. 43-024



(A) MODEL CD6 MOBILE AMPLIFIER

Operating on 6 volts DC, and with universal mounting for any of 4 alternate positions, this is the ideal low-power amplifier for car and similar installations. Frequency response is designed for optimum fidelity of speech reinforcement. Microphone gain is 109 db. Output impedances 4, 8, 15 ohms. Remote control of standby switch reduces current drain, conserves tubes and components. Vibrator is replaceable from front without dismantling amplifier or removing cage. Complete chassis can be taken out by removing just four screws. Built-in DC cable fuse. Primary power circuit shielded from high gain circuit for minimum hum. Tubes — 2-6SF5, 1-6L6GA, 1-6X5GT. Dimensions — 3 1/2 x 8 x 7" high. **Net Price \$31.60**
Cat. No. 33-230 Model CD6 Mobile amplifier with tubes, cage, and DC cable

(A, B, C) Model CD6U Complete Mobile System

Complete system includes: CD6 amplifier with tubes, cage, and cable; one University 1B8 trumpet; one Astatic crystal microphone with handle, interlocking base, 15' cable, and plug. **Net Price \$59.39**
Cat. No. 33-231 Model CD6U System as above.

Bogen - High-Fidelity Phono Amplifiers - H. H. Scott



(A) New Bogen Model PX15 Phono Amplifier

A sensational feature of Model PX15 is the new Bogen Scratch Eliminator with 4 selective positions to correct for varied conditions of record noise — treated but noisy and worn records sound better than when they were new! Other features are the dual electronic tone-corrector; built-in preamp for G-E, Pickering, Astatic, and similar magnetic pick-ups; direct connection for crystal pickup or tuner output; provision for simple external switching of pickup and tuner, removing load of magnetic amplifier when tuner is in circuit. Power output is 15 watts with less than 2% distortion, peak power 30 watts. Frequency response is 30-15,000 cycles± 1½ db. Tone-corrector range: bass, +20 to -23 db. at 60 c.p.s.; treble, +20 to -20 at 10,000 c.p.s. Hum is -75 db. referred to rated output. Output impedance 4-8-15-500 ohms at terminal strip and two speaker sockets. Maximum gain 108 db. Tube complement — 2-6SL7GT, 1-6SN7GT, 1-6L6G, 1-5Y3GT. Operates on 115 volts 50-60 cycles. Dimensions 15 x 8 x 9½".

Cat. No. 33-060 PX15 Amplifier with tubes. Net Price **\$82.50**
 Cat. No. 33-061 PX15C Same as PX15 but with 4' extension controls. Net Price **\$90.75**
 Cat. No. 33-062 Cage for PX15 or PX15C. Net Price **\$3.75**

(A, C, D) Radio Shack Engineers Recommend . . .

If you seek a custom-built music reproduction system that will fulfill your ideal of perfect music enjoyment, the Radio Shack's audio experts recommend this combination: the Bogen PX15 amplifier, the Stephens Tru-Sonic P52A 15" coaxial speaker — or Jensen HNP61 speaker — with the Webster-Chicago 156 record changer. Each of these components forms the ideal companion-piece for the other and together form a phonograph system of undisputed supremacy.

Cat. No. 31-303 (D) Tru-Sonic P52A Speaker. Net Price **\$120.54**
 Cat. No. 31-001 Jensen HNP-51 Speaker. Net Price **\$81.66**
 Cat. No. 34-011 (C) Model 156 Record Changer. Net Price **\$27.83**
 Cat. No. 33-060 (A) Bogen PX15 Amplifier. Net Price **\$82.50**

(B) New Bogen Phono Amplifier—Model PX10

A new high-fidelity amplifier, with 10-watt output at 5% distortion, permits direct connection of crystal pickup or tuner output and contains built-in preamplifier for G-E, Pickering, Astatic, and similar magnetic pickups. Features straight-line dynamic range-expander and new multi-range tone control. Four tone control positions — (1) Mellow Bass, (2) Wide Range, (3) Extended Range, and (4) Brilliant key frequency response to type of recording or program. Provision for simple external switching of pickup and tuner, removing load of magnetic preamplifier when tuner is in circuit. Peak power 17 watts; frequency response 30-18,000 cycles ± 2 db. magnetic pickup gain 105 db.; crystal pickup gain 63 db.; hum -70 db. referred to rated output. Input impedance — magnetic, 47,000 ohms; crystal, 470,000 ohms. Output impedance — 4-8-15-500 ohms; 500-ohm tap is equivalent to 70 volts constant-voltage tap. Tube complement — 1-6SC7, 2-6SL7GT, 1-6SA7, 2-6V6GT, 1-5Y3GT. Dimensions — 11 x 7 x 7½" high.

Cat. No. 33-051 Amplifier Model PX10, with tubes, less cage. **\$51.15** Net
 Cat. No. 33-052 Amplifier Model PX10C, same as PX10 but with 4' extension controls. Net Price **\$56.10**
 Cat. No. 33-053 Cage for PX10 or PX10C. Net Price **\$3.00**

(B, C, E) Bogen—Tru-Sonic—Webster Phono System

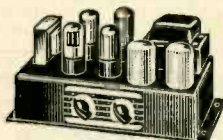
Here is a record player system that the Radio Shack's audio engineers unreservedly recommend — assembled from among the world's foremost audio components for an ideal combination. Combine the new Bogen phono PX10 amplifier described above with the Stephens P52A Co-Spiral speaker and the Webster 156 Record Changer using the G-E magnetic cartridge. Notice the total of the prices of the component parts — unbeatable for a custom-built phonograph of superlative quality.

Cat. No. 31-301 (E) Stephens Tru-Sonic 15" speaker P52FR. **\$47.04** Net Price
 Cat. No. 34-011 (C) Model 156 Webster Recorder Changer with G-E Cartridge. Net Price **\$27.83**
 Cat. No. 33-051 (B) Bogen PX10 Amplifier. Net Price **\$51.15**
 Full description of the P52FR speaker is listed on page 000 of this catalog; of the 156 Record Changer on page 83.

Bogen PH10 Multi-range

Phono Amplifier

—10 Watts



A completely new, low-priced phono amplifier with the remarkable Bogen 4-position Multi-range Tone Control — the first position provides a deep bass response; second position a mellow bass with broadened high frequency response; third position is essentially flat response with greater high register; fourth position extends response for FM and other wide range programs. All guess work is removed — at the user's command are four sharply defined frequency curves to provide the finest performance regardless of program material. Made especially for use in normally quiet places such as the home, PH10 is virtually humless. Input circuit accommodates any crystal phono pickup or output of a radio tuner. Output is push-pull with inverse feedback. Power output 10 watts at 5% distortion; peak output 14 watts; frequency response 40-15,000 c.p.s. ± 1 db.; gain 72 db.; input impedance 500,000 ohms; output impedance 3.2 and 8 ohms; hum — 80 db. referred to rated output, in flat response. Power consumption 60 watts, 117 volts, 60 cycles. Tubes — 1-6SL7GT; 2-6V6GT; 1-5Y3GT. Dimensions — 5 x 11 x 3".

Cat. No. 33-130 Model PH10 amplifier complete with tubes. **\$29.20**
 Net Price

H. H. Scott "Little Wonder"

Dynamic

Noise Suppressor



MODEL 110A Dynamic Noise Suppressor reduces background noise — hiss, scratch, and rumble — to add realism and "presence" to the music reproduction of even the finest existing phono systems. Easily installed on almost all commercial and custom built sets, the "Little Wonder" realizes the full capability of your present equipment. Plugs in between pickup and amplifier; socket adapter furnished plugs into power-tube socket. Matched low-needle-talk pickup is furnished for insertion into existing tone arms. Remote control for setting exact degree of suppression to suit individual ear can be mounted anywhere at instrument or elsewhere in room. Entire Suppressor unit can be placed anywhere in cabinet — only 7" x 3½" x 4½" overall. Effective over frequency range 30 to 8000 cycles. High frequency noise reduction between 20 and 30 db. above dynamic pass band; low-frequency noise reduction is 15 db. at 50 cycles, 20 db. at 30 cycles. Tube complement, 1-6SQ7, 2-6SG7. Furnished complete with matched pickup, remote control, fittings, cables, adapters, tubes, and instructions.

Cat. No. 15-251 Net Price **\$49.50**

Bogen Portable System LP-16 for LP Records & Transcriptions

A compact portable phono-amplifier system that plays both the new long-playing micro-groove records, and regular records and transcriptions. Uses the Shure MG-16 pickup for LP records, Astatic "400" transcription arm with Q73 cartridge for records and transcriptions up to 16" in diameter. Removable lid contains built-in Jensen P88, 8" speaker. Power output 10 watts at less than 5% distortion; peak power 14 watts; response (extended range) — 50-8000 c.p.s. ± 2 db.; gain, phono channel 65 db., mike channel 11.5 db.; hum, phono; channel — 70 db., mike channel — 55 db., input impedance 8 ohms. Dual synchronous motor assembly for 78 and 33½ R.P.M. Power: 85 watts at 117 volts 60

cycles. Tubes: 1-6SJ7, 1-6SL7GT, 2-6V6GT, 1-5Y3GT. Sturdy luggage-type case measures 20½ x 18½ x 12½" high.

Cat. No. 33-080 Model LP-16 as above. **\$105.00** Net Price

Portable Phono-Amplifier System for Transcriptions

Model UP-16 has all the performance features of Model LP-16 above, but without Shure MG-16 pickup.
 Cat. No. 33-081 Model UP-16 complete. **\$96.00** Net Price



BURGESS BATTERIES

BURGESS PORTABLE RADIO BATTERIES

Portable "A" Batteries

Cat. No.	Burgess Type	Volts	Uses Plug No.	Size	Eveready	Replaces		Std. Pkg.	Single Lots	Net Each Pkg.
						Ray-O-Vac	Std. Pkg.			
23-063	2R	1 1/2	...	2 1/2 x 1 1/8" dia.	950	2LP		12	\$0.07	\$0.65
23-064	2F	1 1/2	274	2 1/2 x 1 1/8" x 4 3/8"	...	P24A		6	.43	.39
23-065	4F	1 1/2	274	2 1/2 x 2 1/2" x 4 3/8"	742	P94A		12	.69	.63
23-066	4FL	1 1/2	274	3 3/4 x 1 1/8" x 5 1/2"	...	P94L		6	.69	.63
23-067	6F	1 1/2	274	4 3/8 x 2 1/2" x 4 3/8"	743	P96A		6	.96	.87
23-068	8F	1 1/2	274	3 3/8 x 2 1/2" x 5 1/2"	741	P98A		6	1.23	1.12
23-069	G3	4 1/2	2792	4 x 1 1/8" x 4 3/8"	746	P83A		12	.51	.46
23-070	F4P1	6	2793	2 1/2 x 2 1/2" x 4 3/8"	...	P604A		12	.69	.63
23-071	2F4	6	2795	3 3/8 x 2 1/2" x 5 1/2"	718	P698A		6	1.31	1.19
23-072	2F4L	6	2793	3 3/8 x 1 1/8" x 10 1/2"	747	P698L		6	1.39	1.26
23-073	G5	7 1/2	M77	3 3/8 x 2 1/2" x 4 3/8"	687	P85A		10	.85	.77

PORTABLE "B" BATTERIES

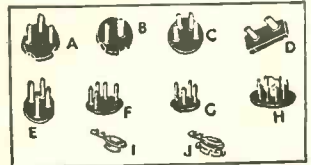
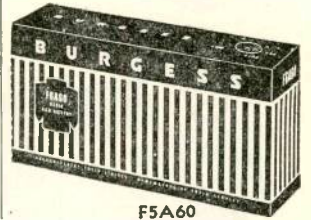
Cat. No.	Burgess Type	Volts	Uses Plug No.	Size	Eveready	Std. Pkg.	Single Lots	Net Each Pkg.
23-075	A30	45	273	3 1/8 x 2 1/2" x 4 3/8"	...	430P	6	1.65 1.50
23-076	B30	45	273	4 1/2 x 2 1/2" x 5 1/2"	762	P5303	12	1.65 1.50
23-077	Z30	45	273	3 3/8 x 2 1/2" x 4 3/8"	738	P7R30	6	1.98 1.80
23-078	M30	45	273	3 3/8 x 1 1/8" x 5 1/2"	482	P7R30	12	1.65 1.50
23-079	W30P1	45	273	3 x 1 1/8" x 4 3/8"	733	P3A30	6	1.77 1.61
23-080	XX30	45	snapon	2 1/2 x 1 1/8" x 3 3/8"	455	...	12	1.35 1.23
23-081	XX45	67 1/2	snapon	2 1/2 x 1 1/8" x 3 3/8"	467	P4367	12	1.88 1.71
23-082	Z59	8 1/2	273	3 3/8 x 2 1/2" x 5 1/2"	...	...	6	2.86 2.60
23-083	A60	90	273	4 1/2 x 3 1/2" x 4 1/2"	...	BB60P	6	3.35 3.05

Combination "AB" Packs for Portables

Cat. No.	Burgess Type	Volts	Uses Plug No.	Size	Eveready	Std. Pkg.	Single Lots	Net Each Pkg.
23-085	4GA42	1 1/2 A, 6 1/2 B	2745	9 1/2 x 2 1/2" x 4 3/8"	2.46
23-086	4FH60	1 1/2 A, 90B	5705	7 7/8 x 3 1/2" x 4 3/8"	...	...	...	3.53
23-087	4TA60*	1 1/2 A, 90B	...	8 3/8 x 2 1/2" x 4 3/8"	...	...	...	3.68
23-088	5DA60	1 1/2 A, 90B	120	5 1/2" x 2 1/2" x 7"	...	...	...	3.35
23-089	6FA60†	1 1/2 A, 90B	2745	11 1/2 x 6 3/8" x 1 1/8"	...	...	...	3.35
23-090	6TA60	1 1/2 A, 90B	120	10 1/2 x 2 1/2" x 4 1/2"	...	...	...	3.60
23-091	G4B50	6A, 75B	2768	12 1/2 x 2 1/2" x 4 1/2"	...	...	...	3.15
23-092	2F4A60	6A, 90B	2791	12 x 2 1/2" x 4 3/8"	...	...	...	3.92
23-093	F4B60	6A, 90B	2776	10 1/2 x 2 1/2" x 5"	...	...	...	3.30
23-094	G4B60	6A, 90B	M64	10 1/2 x 2 1/2" x 5"	...	...	...	3.40
23-095	G5A42	7 1/2 A, 6 1/2 B	2900	9 1/2 x 2 1/2" x 4 3/8"	...	...	...	2.95
23-096	F5M45	7 1/2 A, 6 1/2 B	...	9 1/2 x 2 1/2" x 4 3/8"	...	...	...	2.95
23-097	F5A60	7 1/2 A, 90B	2900	11 1/2 x 2 1/2" x 4 3/8"	...	...	...	3.33
23-098	F6A60	9A, 90B	...	9 1/2 x 2 1/2" x 4 3/8"	...	...	...	3.55
23-099	G6B60	9A, 90B	2908	13 3/8 x 2 1/2" x 4 1/2"	...	...	...	3.74
23-100	G6M60	9A, 90B	...	10 1/2 x 3 1/2" x 4 1/2"	...	...	...	3.74
23-101	2TXX40	1 1/2 A, 60B	...	2 3/8 x 1 1/8" x 7 3/8"	...	...	...	2.10
23-102	F4A50	6A, 75B	...	9 1/2 x 2 1/2" x 3 3/8"	...	...	...	3.10

* Replaces Ray-O-Vac No. 10793.

† Replaces Ray-O-Vac No. 84.



Burgess Batteries

Fresh stock — In all popular styles and sizes — for standard and special services. We stock a complete line of Burgess dry batteries and can furnish all available items; if the battery you want is not listed here, order by Burgess number from the Radio Shack. Code letters giving method of connecting the batteries below are: S—screw terminals; F—Fahnestock type spring clips; P—plug-in type; ST—strap terminals; C—coil spring terminals.

"B" Batteries

Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-001	XX69	103 1/2	1 1/4 x 1 1/4" x 1 1/4"	S	6	\$3.48	\$3.17
23-002	21308PI	45	8 1/2 x 4 1/2" x 7 1/2"	P	6	3.42	3.10
23-003	21308SC	45	8 1/2 x 4 1/2" x 7 1/2"	F	6	3.42	3.10
23-004	10308PI	45	8 3/4 x 4 1/4" x 7 1/2"	P	6	3.26	2.96
23-005	10308SC	45	8 3/4 x 4 1/4" x 7 1/2"	F	6	3.26	2.96
23-006	2308PI	45	8 3/4 x 2 1/2" x 7 1/2"	P	6	2.48	2.16
23-007	2308SC	45	8 3/4 x 2 1/2" x 7 1/2"	F	6	2.48	2.16
23-008	5308	45	4 1/2 x 2 1/2" x 5 1/2"	S	10	1.65	1.50
23-009	W30BPX	45	2 1/2 x 1 1/4" x 4 3/8"	S	6	2.01	1.83
23-010	X30X	45	1 1/2 x 2 1/8" x 5 1/8"	S	6	2.86	2.60
23-011	Z30NX	45	1 1/2 x 3 1/8" x 5 1/8"	S	10	1.78	1.62
23-012	5156PI	22 1/2	4 1/2 x 2 1/2" x 2 1/2"	P	10	1.31	1.19
23-013	5156SC	22 1/2	4 1/2 x 2 1/2" x 2 1/2"	F	10	1.31	1.19
23-014	4156	22 1/2	3 1/2 x 2 1/2" x 2 1/2"	S	10	1.00	.91
23-015	A15ST	22 1/2	3 1/2 x 2 1/2" x 2 1/2"	ST	6	1.18	1.07

"C" Batteries

Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-016	5540	7 1/2	4 x 2 1/2" x 2 3/8"	S	10	.69	.63
23-017	W5BP	7 1/2	2 1/2 x 2 1/2" x 1 1/8"	S	6	.76	.69
23-018	5360	4 1/2	2 1/2 x 2 1/2" x 2 1/2"	S	10	.33	.30
23-019	2370PI	4 1/2	3 1/2 x 1 1/2" x 2 1/2"	P	10	.57	.52
23-020	2370BP	4 1/2	3 1/2 x 1 1/2" x 2 1/2"	S	10	.57	.52
23-021	B3BPX	4 1/2	3 1/2 x 2 1/2" x 2 1/2"	S	6	.84	.76

"A" Batteries

Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-022	F4BP	6	2 1/2 x 2 1/2" x 4 1/2"	S	10	.52	.47
23-023	12F3	4 1/2	10 1/2 x 3 3/8" x 6 1/8"	S	1	3.19	3.19
23-024	432	4 1/2	2 1/2 x 2 1/2" x 2 1/2"	S	10	.34	.31
23-025	2F2H	3	2 1/2 x 2 1/2" x 4 1/2"	S	10	.66	.60
23-026	2F2BP	3	5 1/2 x 1 1/2" x 4 1/2"	S	10	.80	.73
23-027	F2BP	3	2 1/2 x 1 1/2" x 4 1/2"	S	10	.53	.48
23-028	B2BP	3	1 1/2 x 1 1/2" x 2 1/2"	S	6	.48	.44
23-029	222PI	3	1 1/2 x 1 1/2" x 2 1/2"	P	12	.40	.36
23-030	422	3	1 1/2 x 1 1/2" x 2 1/2"	S	10	.23	.21
23-031	2FBP	1 1/2	2 1/2 x 1 1/2" x 4 1/2"	S	10	.53	.48
23-032	44	1 1/2	1 1/8" dia. x 4 1/2"	S	10	.66	.60

Portable Radio Battery Plugs

The battery plugs listed below fit all the standard type dry batteries as designated. Tough Bakelite insulation.

Cat. No.	Fig.	Type	For	Ea.	10 for
23-105	D	2793	6 V. "A"	5c	\$0.35
23-106	D	200	3 V. "A"	12c	.80
23-107	A	273	Portable "B"	7c	.50
23-108	C	120	1 1/2/90 "A/B"	7c	.50
23-109	B	274	1-1/2 V. "A"	5c	.35
23-110	E	M64	6/90 "A/B"	8c	.55
23-111	-	\$2767	60 V. "B"	8c	.55
23-112	-	*2792	4-1/2 V. "A"	5c	.35
23-113	-	*M77	7-1/2 V. "A"	5c	.65
23-114	H	\$5705	Zenith "A/B"	15c	1.00
23-115	-	2745	Phileo "A/B"	7 1/2c	.50
23-116	-	2900	7 1/2/90 "A/B"	10c	.65
23-117	F	2776	8/90 "A/B"	12c	.80
23-118	G	2791	8/90 "A/B"	10c	.65

† 4-prong. ‡ 3-prong. § 2-prong.
 Fig I MALE snap-on type. For Burgess XX30, XX45.
 Cat. No. 23-119 10 for 35c Each 5c
 Fig. J FEMALE snap-on type. For Eveready 455, 467.
 Cat. No. 23-120 10 for 35c Each 5c

Flashlight Batteries

Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-060	2	2 1/8	1 1/8" x 1 1/8"	S	12	7c	6 1/2c
23-061	1	1 1/2	1" x 1"	S	12	7c	6 1/2c
23-062	Z*	1 1/2	1" x 1 1/8"	S	12	5 1/2c	5c

* Fountain pen flashlight cell.

Ignition and Telephone Batteries

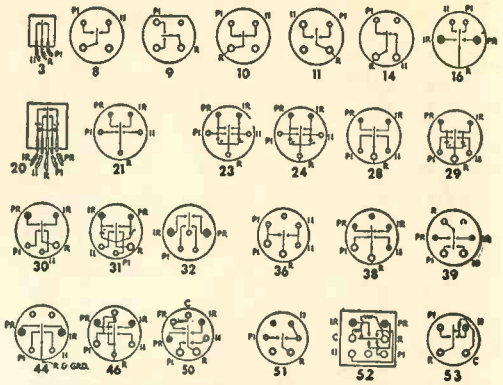
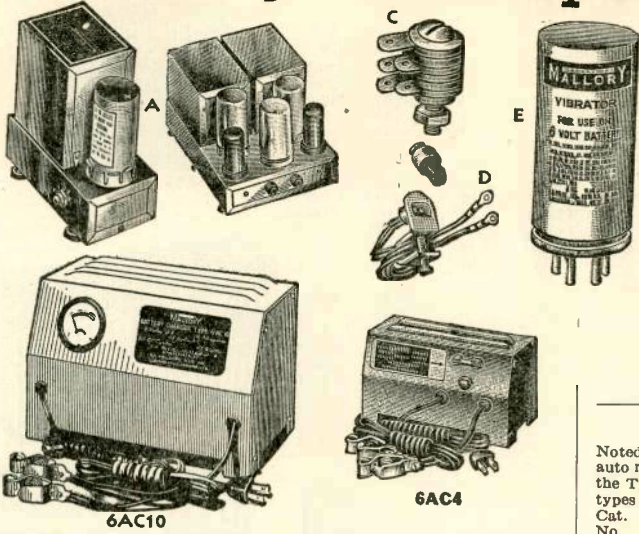
Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-033	4F6H	9	8 1/2 x 3 3/4" x 5 1/4"	S	6	3.15	3.19
23-034	4F5H	7 1/2	7 1/2 x 3 3/4" x 5 1/4"	S	6	3.06	2.78
23-035	4F4H	6	8 1/2 x 2 1/2" x 5 1/4"	S	6	2.38	2.16
23-036	4F2H	3	3 1/2 x 2 1/2" x 5 1/4"	F	8	.99	.90
23-037	4FH	1 1/2	2 1/2 x 2 1/2" x 4 1/2"	S	20	.51	.46 1/2

Lantern Batteries

Cat. No.	Type	Volts	Size	Term.	Net Each		
					Std. Pkg.	Single Lots	Std. Pkg.
23-038	F4H	6	2 1/2 x 2 1/2" x 3 3/4"	C	20	.58	.52 1/2
23-039	F4BP	6	2 1/2 x 2 1/2" x 4 1/2"	S	10	.52	.47
23-036	4F2H	3	3 1/2 x 2 1/2" x 5 1				

Mallory Vibrapacks

BATTERY CHARGERS RECTIFIERS



(A) Mallory Vibrapacks

Ideal power supplies to provide dependable and low-cost high-voltage DC from a low-voltage battery. In wide use for "B" power in auto receivers, aircraft and marine receivers and transmitters, farm receivers, two-way radio equipment, mobile telephones, auto p.a. systems. Low battery drain; low cost and low maintenance; light-weight and compact; time-tested in the field. Built-in noise suppressors.

Cat.	No.	Type	Input Volts	Output Volts	Max.	Desc.	Net
	23-210	VP-540*	6.3	250	60	Self-rect.	\$17.64
	23-211	VP-551	6.3	125-150-175-200	100	Self-rect.	13.23
	23-212	VP-552	6.3	225-250-275-300	100	Self-rect.	15.43
	23-213	VP-553	6.3	125-150-175-200	100	Tube rect.	14.40
	23-214	VP-554	6.3	225-250-275-300	100	Tube rect.	16.90
	23-215	VP-555*	6.3	300	200	Tube rect.	30.57
	23-216	VP-557*	6.3	400	150	Tube rect.	30.57
	23-217	VP-G556	12.6	225-250-275-300	100	Self-rect.	16.90
	23-218	VP-F558	32	225-250-275-300	100	Tube rect.	18.37

* High power type.
 † Includes complete audio and RF filter.
 TYPE VP-223 FILTER. For use with single-unit Vibrapacks. Suppresses hum with minimum voltage drop. Also used where voltage regulation is important, as in Class "B" audio amplifiers.
 Cat. No. 23-219 Net Price \$4.70

Mallory Battery Chargers

Convenient . . . efficient . . . economical charging of any storage battery used in autos, buses, trucks, taxis, small boats, airplanes, on the farm, or any 6-volt storage battery used in industry, laboratory, test equipment. Embodies the famous Mallory magnesium-copper sulfide all-metal rectifier, time-tested and proved rugged and dependable. The Mallory taper charging feature automatically decreases charging rate, prevents plate damage, and insures maximum battery life. Highly portable, these units may be placed anywhere: in the car, on garage floor, on the bench, etc. 115-volt 60 cycle operation. Equipped with 6-ft. DC and AC cords; heavy-duty alligator clips. Types 6AC6 and 6AC10 have charging indicator. All for 6-volt batteries.

Cat. No.	Type	Charge Taper	From	To	Size	Net
23-200	6AC4	4 amps.	2	4	4 1/2 x 7 1/2 x 3 1/2"	\$9.79
23-201	6AC6	6 amps.	4	4	4 x 8 x 4 1/2"	13.04
23-202	6AC10	10 amps.	7	6 1/2	10 1/2 x 5 1/2"	19.30

(C) Mallory Magnesium-Copper Sulfide Rectifiers

All-metal construction assembled under high pressure to withstand vibration and shock. For rugged, dependable service in numerous applications requiring low DC voltages at medium and high currents such as battery eliminators, battery chargers, electroplating, welding, engine starting, solenoid and relay operation. Withstands extreme temperatures, from -90F to +265F. "Self healing" rectifying film. Amperage rating given is for continuous duty.

Cat.	No.	Type	Max. ACV.	DC Volts/Amps.	Replacement for	Net
	23-203	1B4R	3.6	1.7 1.5	GTC-P-Power Battery Eliminator	\$1.14
	23-204	1B8R	7.2	3.4 1.5	GTC-P-Power Battery Eliminator	1.57
	23-205	1B12R	10.8	5.2 1.3	Electric Fence Power Supplies	2.02
	23-206	1B12C1J	10.8	5.1 3.2	Mallory 3C, 6AC4 Boosters	3.46
	23-207	F16C3	14.4	6.8 3.9	Mallory 5535	4.02
	23-208	1S16CB7	14.4	6.7 6.3	Mallory 5535B, 6AC6 Chargers	5.00
	23-209	F24H1P	21.6	10.4 1.9	Electropak, Rectopak, Univerter, etc.	3.33

(D) DASH RECEPTACLE TYPE R-652 — Mallory polarized dashboard receptacle for connecting charger to battery.
 Cat. No. 23-221 Net Each \$1.18

(E) Mallory Replacement Vibrators

Noted for their long service life, these quality units are designed for use in auto radios and battery receivers. All vibrators are rated at 6 volts except the Type W245A and Type W246 which are 4 volts. A guide to proper types for replacement is offered free of charge.

No.	Type	Volts	Diagr.	Base	Size	Net
23-229	222	6	20		4 1/2 x 1 1/2 x 1 1/2"	\$4.88
23-230	245	6	21		1 1/2 x 3"	4.11
23-231	245A	6	21		1 1/2 x 3"	4.11
23-232	245C	6	28		1 1/2 x 3"	4.11
23-233	W245	4	21		1 1/2 x 3"	4.11
23-234	W245A	4	21		1 1/2 x 3"	4.11
23-235	246	6	38		1 1/2 x 3"	4.11
23-236	248A	6	38		1 1/2 x 3"	4.11
23-237	W246	4	38		1 1/2 x 3"	4.11
23-238	247	6	46		1 1/2 x 3"	4.11
23-239	F247	32	46		1 1/2 x 3"	4.65
23-240	248	6	44		1 1/2 x 3"	4.11
23-241	249	6	32		1 1/2 x 3"	4.11
23-242	270B	6	23		2 x 4 1/2"	4.88
23-243	271HD	6	24		2 x 4 1/2"	4.88
23-244	273C	6	29		2 x 4 1/2"	4.88
23-245	273D	6	31		2 x 4 1/2"	4.88
23-246	282	6	3		1 x 1 1/2 x 2 1/2"	3.38
23-247	294	6	8		1 x 3"	2.62
23-248	F294	32	8		1 x 3"	3.82
23-249	298	6	51		1 x 2 1/2"	3.38
23-250	F502P	32	9		1 x 3"	4.88
23-251	505P	6	8		1 x 3"	2.62
23-252	506P	6	36		1 x 3"	3.38
23-253	514	6	30		1 x 3"	4.11
23-254	716	6	30		1 x 3"	4.11
23-255	725C	6	32		1 x 3"	4.65
23-256	G725C	12	32		1 x 3"	5.32
23-257	742	6	32		1 x 2 1/2"	4.11
23-258	743	6	38		1 x 3"	4.11
23-259	748	6	44		1 x 2 1/2"	4.11
23-260	G749C	12	21		1 x 3"	5.32
23-261	825C	6	8		1 1/2 x 3 1/2"	3.68
23-262	826C	6	8		1 1/2 x 3 1/2"	3.38
23-263	F828C	32	8		1 1/2 x 3 1/2"	4.11
23-264	G828C	12	8		1 1/2 x 3 1/2"	4.11
23-265	839	6	8		1 1/2 x 3 1/2"	3.38
23-266	852	6	14		1 x 3"	2.62
23-267	853	6	10		1 x 3"	2.62
23-268	854	6	11		1 1/2 x 3 1/2"	2.62
23-269	859	6	8		1 1/2 x 2 1/2"	2.62
23-270	860	6	14		1 1/2 x 3 1/2"	2.62
23-271	870	6	14		1 1/2 x 3"	2.62
23-272	901M	6	8		1 1/2 x 3 1/2"	2.20
23-273	952W	6	16		1 1/2 x 2 1/2"	4.11
23-274	953W	6	16		1 1/2 x 3 1/2"	4.11
23-275	954	6	39		1 1/2 x 3 1/2"	4.11
23-276	1100	6	8		1 1/2 x 2 1/2"	2.62
23-277	1501	6	—		1 1/2 x 2 1/2"	2.62

2-VOLT VIBRATORS

Cat.	No.	Type	Volts	Diagr.	Base	Size	Net
	23-278	T4000	2	50		1 1/2 x 2 1/2"	3.38
	23-279	T4002	2	52		1 1/2 x 1 1/2 x 2 1/2"	5.70
	23-280	T4003	2	50		1 1/2 x 2 1/2"	5.23

Cat. No. 23-288 Type GC7 ground cup for 1 1/2" diameter vibrators. Makes a low RF ground connection between vibrator can and power supply chassis. Net Price 24c

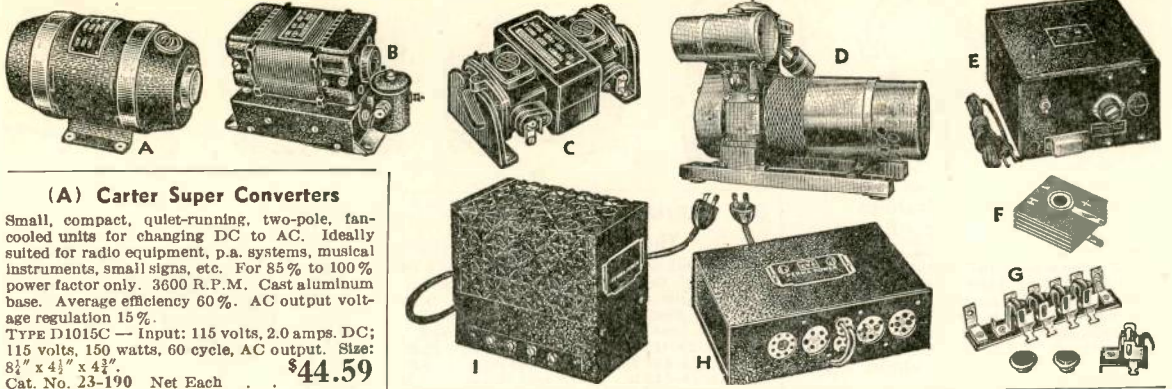
Cat. No. 23-285 Mallory Replacement Guide Free

Mallory Vibrator Buffer Capacitors

Designed for use in high-voltage vibrator buffer applications. Very compact for space limitations. Type VD491 is for Motorola models using a dual .0008 mfd. 1600 volt suppressor capacitor.

Cat.	No.	Type	Mfd.	Vkg. V.	Size	Net
	23-281	VB470	.0075	1800	1/8 x 1/4 x 1/8"	65c
	23-282	VB471	.01	1800	1/8 x 1/4 x 1/8"	68c
	23-283	VD491	.0008-.0008	1600	1/8 x 1/4 x 1 1/8"	59c
	23-284	VO480	.5	120	1/8 x 1/4 x 2 1/2"	59c

Power Plants - Converters - Inverters



(A) Carter Super Converters

Small, compact, quiet-running, two-pole, fan-cooled units for changing DC to AC. Ideally suited for radio equipment, p.a. systems, musical instruments, small signs, etc. For 85% to 100% power factor only. 3600 R.P.M. Cast aluminum base. Average efficiency 60%. AC output voltage regulation 15%.

TYPE D1015C — Input: 115 volts, 2.0 amps. DC; 115 volts, 150 watts, 60 cycle, AC output. Size: $8\frac{1}{2}'' \times 4\frac{1}{2}'' \times 4\frac{1}{2}''$. **\$44.59**
 Cat. No. 23-190 Net Each
 TYPE D1025C — Input: 115 volts, 3.5 amps. DC; output 115 volts, 250 watts, 60 cycles, AC.
 Cat. No. 23-191 Net Price **\$54.20**

(B) Carter Genemotors

The power supply used by leading mobile communications manufacturers; ideally suited for police, taxicab, marine, and aircraft communications. The 2" frame Genemotor is equipped with oil-less bronze bearings, requires no lubrication. 3" frame models are ball bearing equipped, and are extremely fast starting — 600 volt output in less than 3/10 second. Average o.p. regulation 25%, efficiency 60%, 1% ripple unfiltered.

TYPE 415A — 2" frame. Input: 6 volts, 18.2 amps. Output: 400 volts, 150 m.a. **\$37.04**
 Cat. No. 23-192 Net Price
 TYPE 450AS — 3" frame. Input: 6 volts, 28 amps. Output: 400 volts 250 m.a. **\$37.73**
 Cat. No. 23-193 Net Price
 TYPE 520 AS — 3" frame. Input 6 volts, 28 amps. Output: 500 volts 200 m.a. **\$39.10**
 Cat. No. 23-194 Net Price

(C) Carter Magmotors

The ideal power supply for police and taxicab receivers. Permanent-magnet field increases efficiency and compact design; 3000-hour brush life. Average voltage regulation, 20%; efficiency 50%-60%; 1% AC ripple. Size: $5\frac{1}{2}'' \times 3\frac{1}{2}'' \times 2\frac{1}{2}''$.

TYPE MA250 — Continuous duty. Input: 6 volts, 4.3 amps. Output: 250 volts 50 m.a. **\$33.27**
 Cat. No. 23-195 Net Price
 TYPE MA301 — Continuous duty. Input: 6 volts, 9.5 amps. Output: 300 volts, 100 m.a. **\$34.99**
 Cat. No. 23-196 Net Price

(E) ATR Standard and Heavy-Duty Inverters

For operating AC radios, p.a. systems, TV sets, amplifiers, radio-phonos, etc., from DC voltages in vehicles, ships, trains and in DC districts. Designed for quiet, long-life radio operation. Well-filtered to assure interference-free reception. All models listed embody ATR 10-contact plug-in inverter vibrators with 4-point voltage regulators. Fuse-protected. Operating efficiency better than 85%. Recommended for loads with power factor greater than 80%. Standard (RSB) size: $7\frac{1}{2}'' \times 8\frac{1}{2}'' \times 4\frac{1}{2}''$; Heavy Duty (RHB) size: $7\frac{1}{2}'' \times 9\frac{1}{2}'' \times 6\frac{1}{2}''$.

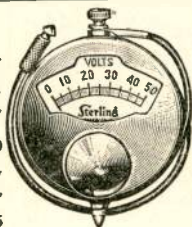
Cat. No.	Type	Input DC	Output 60 Cycle	Watts		Net
				Cont.	Inter	
23-160	6-RSB	6 v.	110 v.	75	85	\$29.37
23-161	12-RSB	12 v.	110 v.	100	125	29.37
23-162	24-RSB	24 v.	110 v.	100	125	33.51
23-163	32-RSB	32 v.	110 v.	100	150	29.37
23-164	32B-RHB	32 v.	110 v.	180	200	46.76
23-165	50-RSB	50 v.	110 v.	100	150	38.20
23-166	110-RSB	110 v.	110 v.	150	250	29.37
23-167	110A-RHB	110 v.	110 v.	225	325	42.63
23-168	110B-RHB	110 v.	110 v.	350	500	48.50
23-169	110C-RSB	110 v.	110/200 v.	150	250	38.20
23-170	220M-RSB	220 v.	110 v.	150	250	33.51
23-171	220A-RSB	220 v.	110/220 v.	150	250	38.20

Sterling Dry Cell Tester

TYPE 24 — Ammeter for testing No. 6 dry cells. 0-35 amps. scale; 1 amp. divisions. **\$1.21**
 Cat. No. 23-150 Net Each

TYPE 34C — Voltmeter for testing 45 volt "B" batteries. 0-50 volt scale; 1 volt divisions. **\$1.70**
 Cat. No. 23-151 Net Each

TYPE 45 — Voltmeter for testing No. 6 dry cells and 45 volt "B" batteries. 0-35 amps., 0-50 volt; 1 amp. and 1 volt divisions. **\$2.35**
 Cat. No. 23-152 Net Each



(D) Kato Power Plants

For use on trailers, boats, construction jobs, farms, and wherever AC power is needed away from central station lines. All models listed generate 115 volts, 60 cycles AC. Single cylinder, air-cooled, 4-cycle engine with constant speed of 1800 R.P.M. Shielded and filtered for radio operation without interference.

TYPE 23HAB4

Delivers up to 500 watts at 110 volts AC. Compact and readily portable. 1 H.P. engine self-cranking with addition of 2 six-volt batteries. 1-gallon gas tank, runs 6 1/2 hours on full tank. Push-button and hand starters. Ammeter, charge control resistor, cables, complete instructions included. Less batteries. Weight 125 lbs. Size: $25'' \times 11'' \times 20''$. **\$143.32**
 Cat. No. 23-330 Net Price

TYPE 14HAB4

Delivers 600 watts AC. 1.4 H.P. engine. Requires 2, 6-volt batteries for self-starting. Runs 6 hours on full tank (1 gallon). Complete with ammeter, charge control resistor, cables, complete instructions. Less batteries. Weight 170 lbs. Size: $24'' \times 18'' \times 20''$. **\$190.15**
 Cat. No. 23-331 Net Price

TYPE 26HAB4

Delivers 1,000 watts AC at 115 volts. 2.4 H.P. engine requires two 6-volt batteries for self-starting. Runs four hours per gallon. Tank capacity 5 qts. Weight 265 lbs. Size: $29'' \times 12'' \times 26''$. **\$270.11**
 Cat. No. 23-332 Net Price

(F) FTR Selenium Rectifiers

TYPE 403D2625 — Small 5-plate, 100 ma. rectifier for replacement of rectifier tubes in portable AC/DC radio and other sets. RMS voltage 120 volts; inverse voltage 380 volts 1200 ma. peak current; RMS current 325 ma; DC output 100 ma. at 5 volt drop. Size $1\frac{1}{2}'' \times 1\frac{1}{2}'' \times \frac{1}{2}''$.
 Cat. No. 23-335 Net Each **\$1.09**
 6-49, Each **\$1.00** 50-100, Each **93c**
 TYPE 404D2795 — For industrial applications. 200 ma.; RMS voltage 120 volts; inverse voltage 380 volts; RMS current 550 ma.; peak current 2,000 ma.; DC output 2,000 ma. at 5 volt drop. Push-button and hand starters. **\$1.60**
 Cat. No. 23-336 Net Each
 6-49, Each **\$1.46** 50-100, Each **\$1.37**

(G) Mallory Grid Bias Cells

Can be used for source of initial bias for RF, IF and AVC stages. Designed to bias first audio tubes in high-gain amplifiers. Eliminates using high-capacity cathode bypass capacitors. Accurate to 10%. May be used in series for higher voltages.
 Cat. No. 23-286 BC-1. 1 volt Net Ea. **24c**
 Cat. No. 23-287 BC-2. 1 1/2 volt Net Ea. **24c**

Cell Holders

Cat. No.	Type	For	Net
23-222	GB11A	1 cell	9c
23-223	GB11B	1 cell	12c
23-224	GB12	2 cells	15c
23-225	GB13	3 cells	21c
23-226	GB14	4 cells	24c

Cell Clips

Cat. No. 23-227 GB-15. For 1 cell Net Ea. **9c**
 Cat. No. 23-228 GB-16. For 2 cells Net Ea. **9c**

GTC "Perma-Power" Battery Eliminators

(H) Model "A"

For converting 1 1/2 volt battery-operated radios with 4, 5, or 6 tubes to all-electric operation. Circuit provides high voltage regulation. Universal sockets for all battery plugs. Fits 99% of all portables as well as all farm battery radios. No tubes, uses selenium rectifiers. Hum-free; radio plays immediately without warm-up. Output: "A" — 1.5 v. at 200 m.a.; 1.35 v. at 250 m.a.; 1.55 v. at 300 m.a.; 1.35 v. at 350 m.a.; "B" — 90 v. at 13 m.a., 101 v. at 8.5 m.a. Size: $2\frac{1}{2}'' \times 4\frac{1}{2}'' \times 6\frac{1}{2}''$. **\$9.85**
 Cat. No. 23-180 Net Each

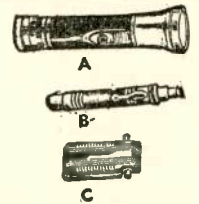
(I) Model "B"

Converts 98% of all 6-volt battery sets to all-electric operation. Two isolated sources for vibrator and filaments eliminates vibrator disturbance and assures high-fidelity operation. All construction features of Model "A" above. Output: 2 sources of 6 volts at 1 1/2 amps., or parallel connection gives 3 amps. at 6 volts. Size: $3\frac{1}{2}'' \times 6\frac{1}{2}'' \times 5\frac{1}{2}''$. **\$11.73**
 Cat. No. 23-181 Net Each

Burgess Flashlight Cases

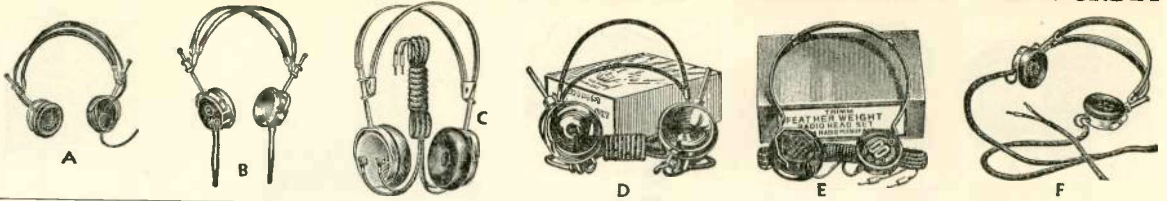
(A) BURGESS TYPE 146 — Standard two-cell flashlight case, of brass, nickel-plated and durable enamel finish. Switch locks "ON." Polished reflector, non-adjustable, pre-focused bulb. **\$1.07**
 Cat. No. 23-121 Less batteries. Net Each

(B) BURGESS TYPE 92 DeLuxe — Fountain pen type flashlight. Chrome-plated metal case trimmed with lasting maroon enamel. Switch locks in "ON" position. Takes 2 cells. **56c**
 Cat. No. 23-122 Less batteries. Net Each



(C) BURGESS TYPE K2 — Palm-of-your-hand size flashlight. Molded plastic case. Switch locks "ON." Takes 2 cells. **40c**
 Cat. No. 23-123 Net Each

HEADPHONES - Trimm - Cannon - Brush



(A) BRUSH Communications Headphone Type B

Ruggedness, comfort, good ear-seal, and safety against shock are assured by molded soft rubber jacket encasing cartridge. Specially protected against adverse climatic conditions by hermetically sealed aluminum cartridge construction. High impedance (.008 mfd.) 40,000 ohms at 500 c.p.s.; response 100 to 10,000 c.p.s. Headset complete with 5-ft. cord and adjustable lock-type headband.

Cat. No. 20-400 Net Price . . . \$9.32

(B) BRUSH Type A Crystal Headphone

For general-purpose applications including laboratory, studio, and amateur use. "Bimorph" crystal drive element for wide-range, uniform response (100 to 10,000 c.p.s.) and high sensitivity. High impedance; ideal for multiple installations. Complete with 5-ft. cord and adjustable lock-type headband.

Cat. No. 20-401 Net Price . . . \$7.06

(C) The CANNON-BALL Master

Of exceptional high quality and rugged construction; used extensively in hospitals and other institutions, and by radio servicemen and amateurs. Concealed terminal type; diaphragm diam. 2 1/2"; aluminum case, bakelite caps. Double coils, two in each receiver. Black steel headband with permanent adjustment, no removable parts.

Cat. No. 20-421 3,000 ohms. Net Price \$2.35

Cat. No. 20-422 5,000 ohms. Net Price 3.25

Cat. No. 20-423 Cap replacement. Net ea. 18c

Cat. No. 20-424 Diaphragm replacement. Net ea. 5c

(C) BRANDES Superior

The famous Brandes headset, made in aluminum cases with black bakelite unbreakable caps. Double coils in each receiver. Magnets are of heavy chrome steel. Supplied with black steel adjustable headband with permanent adjustment. With 4 1/2-foot cotton covered cord, 2,000 ohms resistance. Cat. No. 20-425 Net \$1.99

BRANDES Admiral

MATCHED TONE HEADSET

Of the same general construction as Brandes Superior, but with terminals on the inside.

Cat. No. 20-426 2,000 ohms. Net Price \$2.20

Cat. No. 20-427 3,000 ohms. Net Price 2.49

Cat. No. 20-428 5,000 ohms. Net Price 3.38

Cat. No. 20-429 Replacement caps. 18c

Net ea. 18c

Cat. No. 20-430 Replacement diaphragms. Net ea. 5c

CRYSTAL SETS

(A) Philmore Supertone Crystal Receiver

Ideal for receiving loud and clear signals from stations up to 25 miles away. Simple to operate. Glass enclosed detector. With crystal; less antenna and headphones.

Cat. No. 36-085 Net Price . . . \$1.26

Philmore Little Wonder Crystal Set

Compact and will receive clear signals up to 25 miles. Includes the Philmore supersensitive crystal which insures quick results. Complete receiver; less antenna and headphones.

Cat. No. 36-086 Net Price . . . \$1.04

(B) Philmore Glass-enclosed Crystal Detector

A glass-enclosed dust-proof crystal detector; fixed at factory but easily adjustable.

Cat. No. 36-087 Net Price . . . 33c

(E) TRIMM HEADPHONES The Featherweight

A recognized quality leader. Weight only 4 oz. Diam. 2 1/8", depth 1". Bakelite shell and cap. Forged magnet of best 36% Cobalt steel. Adjustable steel headband. Ideal for aircraft, amateurs; complete with 6-ft. moisture-proof cord. Cat. No. 20-441 4,000 ohms. Net Price \$5.88

Cat. No. 20-442 24,000 ohms. Net Price 5.88

Cat. No. 20-443 Diaphragm repl. Net ea. 12c

Cat. No. 20-444 Cap repl. Net ea. 38c

The Dependable

Bakelite shell and cap. Forged magnet of chrome steel, 2,000 ohms DC resistance. No outside terminals. Very sensitive and absolutely reliable. With 5-ft. cord.

Cat. No. 20-445 Net Price . . . \$2.44

Cat. No. 20-446 Single phone as above 1,000 ohms. Net Price . . . \$1.26

Cat. No. 20-447 Cap repl. Net ea. 35c

Cat. No. 20-448 Diaphragm repl. Net ea. 9c

(D) The Professional

The original Trimm headset; double-unit watch-case type with bakelite cap and shell; forged chrome steel magnets, impregnated coils, and 5-ft. moisture-proof cord. Concealed terminals; fabric-covered wire headband; easily adjusted for comfort.

Cat. No. 20-449 3,000 ohms. Net Price \$2.94

Cat. No. 20-450 4,000 ohms. Net Price 2.94

Cat. No. 20-451 Cap repl. Net ea. 35c

Cat. No. 20-452 Diaphragm repl. Net ea. 9c

(F) Army-Navy Phones

Very sensitive; meet both Army and Navy specifications. 6-foot moisture-proof cord with phone tip terminals. Bi-polar magnets with 2-lb. pull. Leather headband. Inside terminals.

Cat. No. 20-453 2,200 ohms. Net Price \$9.41

Cat. No. 20-454 Cap repl. Net ea. 53c

Cat. No. 20-455 Diaphragm repl. 12c

Net ea. 12c

Acme DeLuxe Phones

An exceptionally efficient, small, low-priced headset for amateurs, special installations. Chrome steel magnets. Molded bakelite caps give this exceptionally light-weight, comfortable headset a rich, mellow tone.

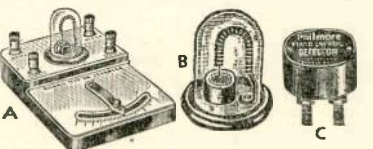
Cat. No. 20-456 2,000 ohms. Net Price \$1.48

Cat. No. 20-457 Single phone headset as above 1,000 ohms. Net Price 95c

Cat. No. 20-458 Cap. repl. Net ea. 26c

Cat. No. 20-459 Diaphragm repl. 9c

Net ea. 9c



Philmore Fixed Crystal Detector

The sensitivity is determined by accurate test equipment and is permanently fixed. Enclosed in bakelite case.

Cat. No. 36-088 Net Price . . . 46c

Philmore Open-Type Crystal Detector

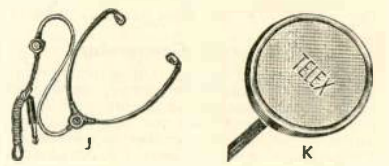
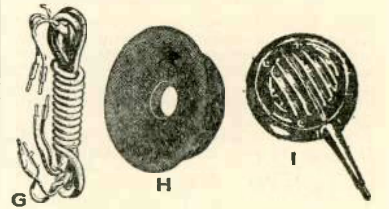
Universal joint on swivel arm provides quick accurate adjustment on any point of crystal. With mounting hardware.

Cat. No. 36-089 Net Price . . . 12c

(C) Lead-mounted Galena Crystal

Cat. No. 36-090 Net Price . . . 07c

10 for 63c



(I) Brush "Hushatone" Model BA-303

Private entertainment for the home, hospital, etc. Simply place it under a pillow and enjoy the radio without disturbance to others. Easily installed. Ample output. Hermetically sealed, can be dipped into disinfecting solution. Lightweight crystal drive provides uniform response and high sensitivity. Handsome maroon finish with satin chrome trim. 10-ft. cord.

Cat. No. 20-402 Net Price . . . \$9.75

(G)(H) Headphone Accessories

HEADPHONE CUSHIONS — Airplane type, finest quality sponge rubber. For comfort when using receivers over long periods of time.

Cat. No. 20-471 Net per pair. 65c

DOUBLE CORDS — Flexible replacement cords for headphones. Fit any type phones. 4 1/2 feet.

Cat. No. 20-472 Pin tips both ends. Net 29c

Cat. No. 20-473 As above with spade tips at one end, pin tips at other end. Net 29c

SINGLE CORDS — One end tipped, other end spade-lugged. 4 feet long.

Cat. No. 20-474 Net ea. 23c

Cat. No. 20-475 As above, pin tips on both ends. Net ea. 23c

Net ea. 23c

(J) TELEX "Monoset" Headphones

Its comfortable design and light weight (1.2 ozs.) obsoletes the old-style cumbersome headsets. Worn under the chin for convenient, superior applications in diverse fields of communications. Built of tenite plastic. High fidelity, high sensitivity. Impedance 2,000 ohms. Complete with standard type plug, insulated cord.

Cat. No. 20-476 Model 2568 Net Price \$7.35

Model 2841 — Telex Monoset above with volume control mounted in the lightweight cord. V.C. clips to lapel. Valuable in group hearing systems.

Cat. No. 20-477 Net Price . . . \$9.70

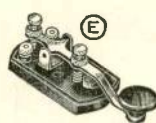
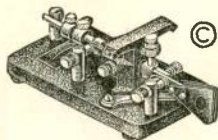
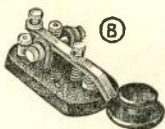
(K) TELEX Pillow Speaker

For private listening, so quiet it can be used without disturbing occupant of the next bed, yet with rich, full tone. Encased in durable, handsome plastic. Waterproof, shockproof. Extremely compact for slipping under the pillow without discomfort. Attaches to radio by means of simple hook-up. Complete with standard 10-ft. cord, jack and plug radio connection, and instruction sheet. 2,000 ohms.

Cat. No. 20-478 Net Price . . . \$7.06

Specify Cat. No. 20-479 if Switch Model is desired. 6-ohm.

TELEGRAPH APPARATUS



SPEED-X KEYS

(A) Standard Model 310

Heavy die cast base finished in black wrinkled enamel. Smooth adjustable bearings. $\frac{1}{8}$ " pure silver contacts. Provision for plugging in semi-automatic keys when desired. **\$1.91**
Cat. No. 20-655 Net Price . . .

Model 310-S — Same features as Model 310 but with circuit closing switch mounted on base. **\$2.20**
Cat. No. 20-656 Net Price . . .

(B) Heavy Duty Key Model 320

A key for heavy duty professional work. Extra-heavy die-cast base finished in black wrinkled enamel. Large, strong chrome plated key arm with adjustable steel bearings. Heavy brass connector strip under base. Well insulated. Improved navy type knob. $\frac{1}{8}$ " pure silver contacts. **\$2.50**
Cat. No. 20-657 Net Price . . .

(E) Model 300 SPEED-X Key

A well-built, smooth-acting key for the beginner at low cost. Molded brown Bakelite base and knob. Spring bearings; simple adjustments; all machine parts nickel plated. $\frac{1}{8}$ " pure silver contacts. With standard code card. **\$1.03**
Cat. No. 20-651 Net Price . . .

(D) Model 400 Buzzer

An all-purpose high quality buzzer with silver contacts, precision parts. Bakelite case all-enclosing. **\$1.18**
Cat. No. 20-653 Net Price . . .

Metal Hand Key Model 305

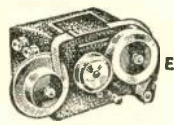
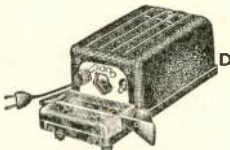
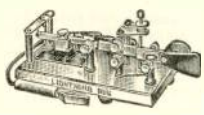
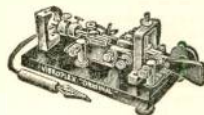
Scientifically correct design and construction but low in price. Key arm and machine parts are nickel plated. Metal base finished in black wrinkle. Adjustable key arm spring; smooth acting spring bearing. $\frac{1}{8}$ " pure silver contacts. **\$1.12**
Cat. No. 20-654 Net Price . . .

(C) Model 501 High Speed Key

A beautifully chrome finished quality key for the professional and amateur C.W. operator. Fully adjustable from lowest to highest speeds. Steel base $6\frac{1}{2}$ " x $3\frac{1}{2}$ " x $\frac{1}{2}$ " drilled for stationary mounting; rubber feet. 5 sensitivity adjustments. Two sets of $\frac{1}{8}$ " pure silver contacts. All machine parts heavily chrome-plated. With circuit closing switch. **\$14.70**
Cat. No. 20-658 Net Price . . .

(F) Practice Set Model 450

Set consists of constant frequency adjustable buzzer, standard hand key with $\frac{1}{8}$ " pure silver contacts mounted on molded brown Bakelite base 6 " x 4 ". A complete sending and receiving set; may be used singly or in pairs for point-to-point communication. With hook-up diagrams and standard code chart. **\$2.65**
Cat. No. 20-652 Net Price . . .



VIBROPLEX "Bugs"

The Original

(A) "ORIGINAL" VIBROPLEX . . . transmits the same grade of code as the strongest hand, faster than possible on an ordinary key, and with less than half the labor. Single lever action, with two pairs of contact points — one for dots and the other for dashes. Contacts $\frac{1}{8}$ " diameter; chrome finished metal parts, black base; weight, $3\frac{1}{2}$ lbs. Complete with cord and wedge. **\$15.95**
Cat. No. 20-601 Net Price . . .

"ORIGINAL" Model DeLuxe all chrome. **\$19.50**
Cat. No. 20-602 Net Price . . .

The Blue Racer

The "BLUE RACER" VIBROPLEX . . . similar to "Original" model but only half as large; weight $2\frac{1}{2}$ lbs. **\$15.95**
Cat. No. 20-603 Net Price . . .

"BLUE RACER" DeLuxe all chrome. **\$19.50**
Cat. No. 20-604 Net Price . . .

The Lightning Bug

(B) "LIGHTNING BUG" VIBROPLEX . . . latest model; single lever, improved flat pendulum, instantly adjustable dot contact spring, circuit breaker parallel with pendulum, two pairs of large contact points. Complete with cord and wedge. **\$17.50**
Cat. No. 20-606 Net Price . . .

"LIGHTNING BUG" standard finish. **\$13.95**
Cat. No. 20-605 Net Price . . .
"LIGHTNING BUG" DeLuxe all chrome. **\$17.50**
Cat. No. 20-606 Net Price . . .

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The "ZEPHYR" VIBROPLEX . . . similar to "Lightning Bug" but mounted on a slightly smaller base; has circuit closer, cord, and wedge. "ZEPHYR" standard finish. **\$12.50**
Cat. No. 20-607 Net Price . . .

Carrying Case

CARRYING CASE . . . fits all Vibroplex keys. Black morocco finish, plush lining carrying strap, lock and key. **\$5.50**
Cat. No. 20-609 Net Price . . .

The Champion

(C) "CHAMPION" VIBROPLEX . . . for radio use only; designed to meet the demand for a low-priced radio transmitter. Single lever with two pairs of contact points; large, standard size base; without circuit closer, cord, or wedge. Standard finish only. **\$9.95**
Cat. No. 20-608 Net Price . . .

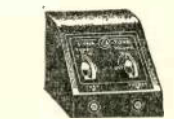
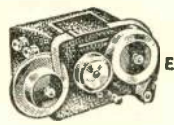
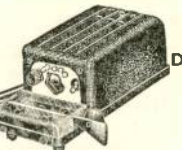
(D) MON-KEY

New Monitor and Sending Key

A new combined electronic monitor and sending key that gives amateur sending electro-timed rhythm and uniformity that the best professional can't beat — makes sending mechanically perfect: press key to right and get evenly spaced dots, press key to left for evenly spaced dashes. Dial setting for adjustable speed control. Monitor provides clear tone adjustable in volume. Built-in 2-inch dynamic speaker; keying relay with 2 amps. contacts for direct keying; fully shielded. Feather touch aluminum key. Transparent plastic cover protects contacts from dust. Plastic base, cast aluminum housing with handsome crackle finish (11 " x $4\frac{1}{2}$ " x 4 "); rubber feet. A most important improvement in sending equipment. 110 volts AC/DC. **\$29.50**
Cat. No. 20-501 Net ea. . . .

(F) ICA DeLuxe Signatone

A truly deluxe type of audio oscillator. Continuously variable volume control; 3 output frequencies. Suited for group instruction, equipped to take a number of phones and keys. Also for use as keying monitor for transmitter. Clear, steady audio frequency for check work. Built-in speaker; complete with tube. Size: 8 " x $4\frac{1}{2}$ " x $4\frac{1}{2}$ " **\$11.76**
Cat. No. 20-551 Net Price . . .



(G) ICA Signatone

Has same frequency output and controls as DeLuxe models. Without speaker. Extra terminals for keys and phones. Good for group work. **\$8.82**
Cat. No. 20-552 Net Price . . .

(E) Automatic Sender Type "S"

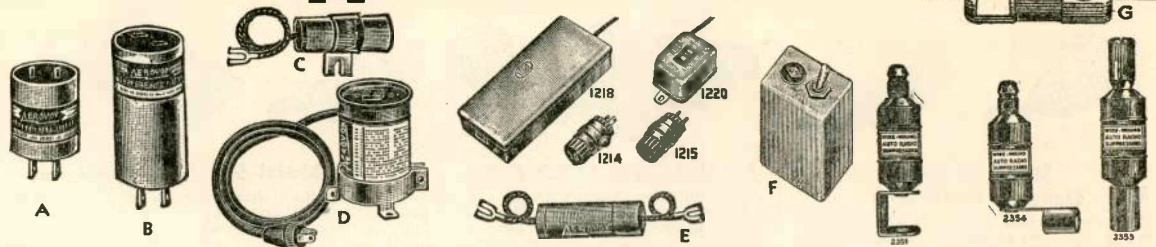
A simple, easily used automatic keying unit that operates from punched tape to give steady, evenly-keyed signals for code instruction; adjustable speed from 4 to 35 words per minute. Compact, housed in aluminum case $5\frac{1}{2}$ " x $4\frac{1}{2}$ " x 6 ", finished in black wrinkle. 110 volt 60 cycle induction motor. Clear plastic tape reels. Speed control; selected speed remains constant. 10 tape rolls, double perforated (twenty lessons), with matter carefully selected and arranged for best practice procedure. Binding post terminals for oscillator or buzzer. Only 3 controls: motor switch, contact switch, and speed control. With tape rolls. **\$23.50**
Cat. No. 20-526 Net Price . . .

Automatic Sender, DeLuxe Model

General constructional design is similar to model above with added features. Retracting brush contact for protection against damage. Motor and drive assembly individually rubber mounted. Case of matched grain walnut, 9 " x $6\frac{1}{2}$ " x $6\frac{1}{2}$ ". Includes ten, double perforated rolls. **\$29.40**
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(A) Aerovox Type IN-27

Simple, inexpensive noise filter. Inserted between set and outlet when interference is slight. Also used with appliance causing low-intensity interference. Keeps troublesome noises out of house wiring and power line. Size $1\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ "
Cat. No. 07-298 Type IN-27 Net Price 88c

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Especially effective for local sources of interference of variable character but strong intensity. Very effective for electric razor and other vibrating devices. Plugs between device and line. Size $1\frac{1}{2} \times 3$ "
Cat. No. 07-299 Type IN-29 Net Price \$1.03

(C) Suppressor Capacitors

Cat. No.	Type	Cap. Mfd.	Net
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(D) Type IN-42

Designed for use in the more serious cases of radio interference from power lines and appliances. Provided with inductance as well as capacitance for thorough filtering action. Plugs into electric outlet; radio set or interfering device plugs into receptacle of the filter. Recommended for use between interfering device and power line. Size $2\frac{1}{2} \times 3\frac{1}{2} \times 3\frac{1}{2}$ "; provided with mounting ring. Rated at 6 amps. for 110-220 volts AC.
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(E) Ammeter Capacitors

Cat. No.	Type	Cap. Mfd.	Net
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Type 1249. Designed for use between the ignition transformer and control wiring of oil burners. Sealed in a steel case $3 \times 3\frac{1}{2} \times 6$, rated at 125 volts, AC-DC, 5 amps.
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(F) Conset Clipper Noise Limiter

Reduces noises from shavers, power leaks, ignition. Uses 6 AL5 tubes and is easily installed in any stationary or mobile receiver in which first audio and second detector are in one tube. Size $2 \times 4 \times 1\frac{1}{2}$ "
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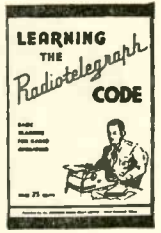
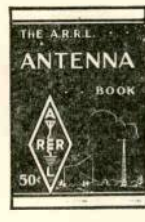
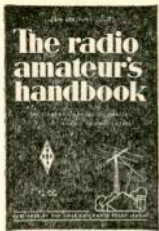
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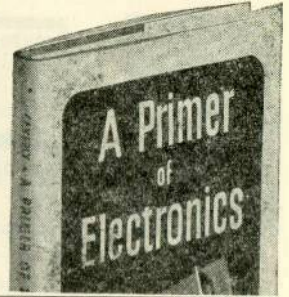
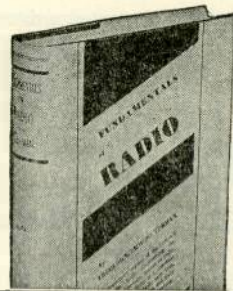
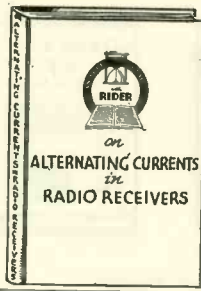
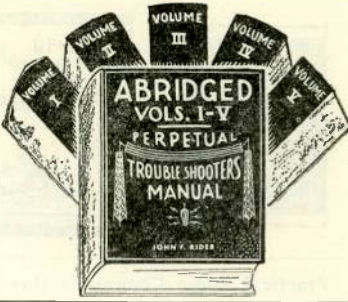
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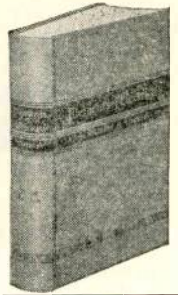
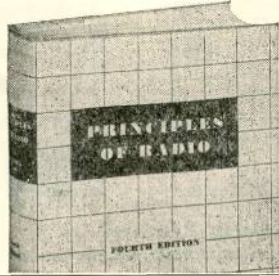
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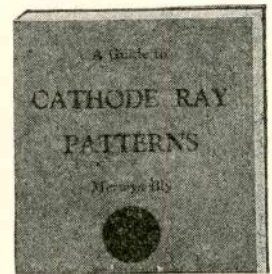
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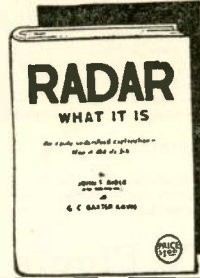
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1.....	\$0.12	\$0.13	\$0.14	\$0.15	\$0.16	\$0.17	\$0.18	
2.....	.15	.16	.19	.21	.24	.27	.30	
3.....	.17	.19	.23	.27	.31	.36	.41	
4.....	.19	.22	.28	.33	.39	.46	.53	
5.....	.21	.25	.32	.39	.46	.55	.64	
6.....	.23	.28	.37	.45	.54	.65	.76	
7.....	.25	.31	.41	.51	.61	.74	.87	
8.....	.27	.34	.46	.57	.69	.84	.99	
9.....	.29	.37	.50	.63	.76	.93	1.10	
10.....	.31	.40	.55	.69	.84	1.03	1.22	
11.....	.33	.43	.59	.75	.91	1.12	1.33	
12.....	.35	.46	.63	.80	.98	1.21	1.44	
13.....	.37	.49	.68	.86	1.06	1.31	1.56	
14.....	.39	.52	.72	.91	1.13	1.40	1.67	
15.....	.41	.54	.76	.97	1.20	1.49	1.78	
16.....	.43	.57	.80	1.02	1.27	1.58	1.89	
17.....	.45	.60	.85	1.08	1.35	1.68	2.01	
18.....	.47	.63	.89	1.13	1.42	1.77	2.12	
19.....	.49	.66	.93	1.19	1.49	1.86	2.23	
20.....	.51	.68	.97	1.24	1.56	1.95	2.34	
22.....	.55	.74	1.06	1.35	1.71	2.14	2.57	
24.....	.59	.80	1.14	1.46	1.85	2.32	2.79	
26.....	.63	.85	1.23	1.57	2.00	2.51	3.02	
28.....	.67	.91	1.31	1.68	2.14	2.69	3.24	
30.....	.71	.96	1.40	1.79	2.29	2.88	3.47	
32.....	.75	1.02	1.48	1.90	2.43	3.06	3.69	
34.....	.79	1.08	1.57	2.01	2.58	3.25	3.92	
36.....	.83	1.13	1.65	2.12	2.72	3.43	4.14	
38.....	.87	1.19	1.74	2.23	2.87	3.62	4.37	
40.....	.91	1.24	1.82	2.34	3.01	3.80	4.69	
42.....	.95	1.30	1.91	2.45	3.16	3.99	4.82	
44.....	.99	1.36	1.99	2.56	3.30	4.17	5.04	
46.....	1.03	1.41	2.08	2.67	3.45	4.36	5.27	
48.....	1.07	1.47	2.16	2.78	3.59	4.54	5.49	
50.....	1.11	1.52	2.25	2.89	3.74	4.73	5.72	
52.....	1.15	1.58	2.33	3.00	3.88	4.91	5.94	
54.....	1.19	1.64	2.42	3.11	4.03	5.10	6.17	
56.....	1.23	1.69	2.50	3.22	4.17	5.28	6.39	
58.....	1.27	1.75	2.59	3.33	4.32	5.47	6.62	
60.....	1.31	1.80	2.67	3.44	4.46	5.65	6.84	
62.....	1.35	1.86	2.76	3.55	4.61	5.84	7.07	
64.....	1.39	1.92	2.84	3.66	4.75	6.02	7.29	
66.....	1.43	1.97	2.93	3.77	4.90	6.21	7.52	
68.....	1.47	2.03	3.01	3.88	5.04	6.39	7.74	
70.....	1.51	2.08	3.10	3.99	5.19	6.58	7.97	

Parcel Post C.O.D. Fees

Amount of C.O.D. Charges	C.O.D. fee	Amount of C.O.D. Charges	C.O.D. fee
\$0.01 to \$2.50	20	\$50.01 to \$100	55
\$2.51 to \$5.00	25	\$100.01 to \$150	60
\$5.01 to \$25.00	35	\$150.01 to \$200	65
\$25.01 to \$50.00	45		

For Express & Freight Shipments

If there is a freight or express agent in your town, do not send money for transportation. We will ship express or freight collect. If there is no agent in your town, send money for transportation. The cost is the same in both cases. We recommend that all radios, tubes, transmitters, and generators be shipped by express; also all bulky merchandise.

Express Charges

Express charges are also determined by the weight of the shipment and distance of the consignee from shipper. The following chart indicates charges. Add 3% Federal Excise Tax.

Max. Distance in Miles	50 M.	150 M.	300 M.	500 M.	750 M.	1000 M.	1500 M.	2000 M.
cost up to 5 lbs.	\$0.89	\$0.92	\$0.97	\$1.02	\$1.07	\$1.09	\$1.25	\$1.36
" " " 10 lbs.	.95	1.01	1.11	1.21	1.30	1.35	1.67	1.89
" " " 15 lbs.	1.01	1.11	1.25	1.41	1.54	1.61	2.10	2.43
" " " 20 lbs.	1.07	1.20	1.40	1.60	1.77	1.86	2.52	2.96
" " " 25 lbs.	1.13	1.30	1.54	1.79	2.01	2.12	2.95	3.50
" " " 35 lbs.	1.25	1.49	1.83	2.18	2.49	2.64	3.80	4.57
" " " 45 lbs.	1.38	1.67	2.11	2.56	2.96	3.16	4.64	5.63
" " " 55 lbs.	1.50	1.86	2.40	2.95	3.43	3.73	5.49	6.70
" " " 75 lbs.	1.74	2.23	2.97	3.72	4.38	4.79	7.18	8.83
" " " 95 lbs.	1.98	2.61	3.54	4.49	5.32	5.84	8.88	10.97
For Ea. 100 lbs.	2.04	2.70	3.69	4.68	5.56	6.11	9.30	11.50

2% Transportation Allowance

On orders of a total value of \$100.00 or more you may deduct 2% of the total amount as a transportation allowance. This does not apply to surplus items advertised elsewhere. No allowances on foreign orders.

Returning Merchandise

If at any time it becomes necessary to return any merchandise for adjustments, write us in advance, giving the following information: reason returned; when and where purchased; number of sales slip, if purchased over the counter. In the case of receipt of damaged shipment, obtain a report from the postmaster or express agency, and mail to us. All adjustment matters must be sent to us on a separate sheet of paper; do not add claim to an order. Do not include money in the package you return. Pack the returning merchandise carefully, insure, and write your name and address on all packages and letters before returning to us.

Parcel Post Insurance Rates

Amount of Insurance	Insurance fee	Amount of Insurance	Insurance fee
\$0.01 to \$5	5	\$25.01 to \$50	20
\$5.01 to \$10	10	\$50.01 to \$100	25
\$10.01 to \$25	15	\$100.01 to \$200	30

Postal Notes

Fee is eight cents for any amount not exceeding ten dollars.

Money Order Rates

Amount of money order	Fee
From \$0.01 to \$5	10
From \$5.01 to \$10	15
From \$10.01 to \$50	25
From \$50.01 to \$100	35

Air Parcel Post Rates

Zones	1 & 2	3	4	5	6	7	8
1st lb.	55c	60c	65c	70c	76c	75c	80c
For each Extra lb.	Add 4c	Add 8c	Add 14c	Add 24c	Add 33c	Add 45c	Add 65c

U. S. Territories and Possessions 80c per lb.

The RADIO SHACK'S

Liberal

*"Play as You Pay"
Plan*

The Radio Shack's popular "Play as You Pay" Plan enables you to secure immediate possession of the equipment you desire, while paying for it over the period of months best suited to your budget. "Play as You Pay" terms are available on all purchases of new receivers, transmitters, amplifiers, television and test equipment, priced at \$50.00 or over. Government regulations require a down payment of 20% or more. A small carrying charge of 6% on the unpaid balance is included in the figures shown on the following chart:

Cost	6 Months		9 Months		12 Months	
	Down	Per Month	Down	Per Month	Down	Per Month
\$ 50	\$10.00	\$7.17	*	*	*	*
60	12.00	8.50	\$12.00	\$5.67	*	*
70	14.00	9.83	14.00	6.56	*	*
80	16.00	11.17	16.00	7.44	\$16.00	\$5.65
90	18.00	12.50	18.00	8.36	18.00	6.36
100	20.00	13.83	20.00	9.29	20.00	7.07
110	22.00	15.17	22.00	10.22	22.00	7.77
120	24.00	16.50	24.00	11.15	24.00	8.48
130	26.00	17.85	26.00	12.08	26.00	9.19
140	28.00	19.23	28.00	13.00	28.00	9.89
150	30.00	20.60	30.00	13.93	30.00	10.60
200	40.00	27.47	40.00	18.58	40.00	14.13
250	50.00	34.33	50.00	23.22	50.00	17.67
300	60.00	41.20	60.00	27.87	60.00	21.20
350	70.00	48.07	70.00	32.51	70.00	24.73
400	80.00	54.93	80.00	37.16	80.00	28.27
450	90.00	61.80	90.00	41.80	90.00	31.80
500	100.00	68.67	100.00	46.44	100.00	35.33
750	150.00	103.00	150.00	69.67	150.00	53.00
1000	200.00	137.33	200.00	92.89	200.00	70.67

* Due to new government Regulation W, the minimum allowable monthly payment is \$5.00. Thus 9 and 12 month terms on \$50.00 purchases cannot be given, nor can 11 month terms be given on \$60.00 or \$70.00 purchases

EXAMPLES:

\$130.00 purchase on 9 months "Play as You Pay":
Down payment \$26.00, balance in monthly installments of \$12.08.

\$1200 purchase on 12 months "Play as You Pay":
Add down payments for \$1000 and \$200=\$240.00
Add monthly payments for \$1000 and \$200=\$84.80

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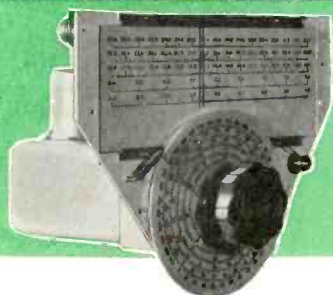
COLLINS FREQUENCY CONTROL

★ Precise
★ Stable
★ Versatile



Collins 310C-1 Exciter
Adds versatility to your rig . . .

A straightforward unit consisting of a 70E-8A PTO and a multiplier, with an r.f. output of approximately 80 volts rms across 40,000 ohms. Its output frequency range is from 3.2 m.c. to 4.0 m.c. Output can be plugged into crystal socket, or applied to grid of 807 buffer stage, giving your present rig far greater versatility than a large number of crystals could afford, yet without loss of crystal accuracy and stability. Circuit consists of a Collins 70E-8A PTO followed by a 6AG7 multiplier; key jack is inserted in the 6AG7 cathode circuit; two voltage regulator tubes, a VR105 and VR150, insure good keying characteristics. R.F. output is capacitively coupled to coaxial lead and can be fed directly to grid. In addition to P.T.O. dial controls include a 6AG7 Plate Tuning and function switch for M.O. OFF, M.O. ON, Standby, and Send. Adjustable index on vernier tuning dial can be set from front panel for extremely accurate calibration. Dimensions — $15\frac{1}{2} \times 8\frac{3}{8} \times 8\frac{3}{4}$ " high. Operates on 6.3 volts a-c at 1.0 amp., 300 v. d-c at 40 ma. Complete with tubes and instruction book, less power supply.
CAT. NO. 35-006 Net Price \$85.00



Collins Model 70E-8A
Permeability Tuned Oscillator

A versatile and extremely accurate variable-frequency oscillator that is the product of a special study of oscillator characteristics and their control, made by Collins engineers over a period of years. This oscillator has a linear range of 1600 k.c.-2000 k.c. with sixteen turns of the vernier dial required to cover the 400 k.c. range. Its excellent stability, accurate calibration, and voltage coefficient make it ideally suited for use in an exciter, measurement instruments, and for receiver alignment. Every Collins 70E-8A meets the following factory tests: accuracy of dial calibration within ± 250 c.p.s. referred to oscillator fundamental frequency; maximum warmup drift of fundamental frequency not in excess of 250 c.p.s. at constant voltage and temperature; fundamental frequency after warmup and at constant voltage not to vary more than 250 c.p.s. between 10C and 50C; voltage stability referred to fundamental frequency within 10 parts/million for voltage change of 10% from normal. Usable output of 10 volts from 6SJ7 oscillator tube for driving untuned Class A r.f. stage in an exciter. Dimensions: v.t.o. — $4\frac{3}{8} \times 5\frac{1}{4} \times 2\frac{3}{4}$ "; dial — $10 \times 8 \times 1\frac{1}{2}$ " behind panel. Complete with tube, slide rule and vernier dial assembly, and instruction book.

CAT. NO. 35-003 Net Price **\$40.00**

Collins P.T.O. Exciter Units

Collins P.T.O. exciters give you not only the flexibility and convenience of variable frequency, but also the accurate calibration and high stability of the Collins 70E-8A permeability tuned oscillator. Slide-rule dial roughly indicates operating frequency, while vernier dial provides direct reading in kilocycles, no reference charts or curves to interpolate. Actual coverage of P.T.O. is from 1600 to 2000 k.c., sixteen turns of the vernier dial covering the 400 k.c. range.

Collins 310C-2 Exciter

Model 310C-2 is similar to Model 310C-1 but incorporates a built-in power supply. Add professional performance to your rig by plugging the versatile test instrument, its accuracy and dependability make it ideal for aligning receiver meters. Tube complement: 1-6SJ7 osc.; 1-6AG7 multiplier; 1-6X5 rect.; 1-VR105 reg.; 1-VR150 reg. Operates on 115 volts a-c. Dimensions $15\frac{1}{2} \times 8\frac{3}{8} \times 8\frac{3}{4}$ ". Complete with tubes and instruction book. CAT. NO. 35-007 Net Price . . . \$100.00



Models 310B-1 and 310B-3 Exciters

Model 310B-1 is a versatile, handswitching, self-powered exciter unit with a link circuit output to work into a final of higher output. Model 310B-3 is basically identical with the 310B-1 but has a series-parallel tunable matching antenna network, universal type, to match any antenna having an integral number of quarter waves in length. Makes a highly satisfactory standby transmitter, is a natural for spot frequency network, and is the answer for emergency work due to its low power source requirements. Ideal for the beginner — when more power is desired, merely add the final amplifier stage. The 310B-1 is conservatively rated at 15 watts output on all amateur bands under 32 megacycles. Has ample drive for a kilowatt final utilizing the new pentode tubes. With additional multiplication it makes an excellent frequency control for amateur bands in the VHF and UHF regions. Has separate multiplier and amplifier tuning controls. ON-OFF power switch, function switch with M.O. OFF — M.O. Test — Standby — Send positions, handswitch, and meter switch for reading Plate and Grid currents in 2E26 stage. Adjustable index on vernier tuning dial can be set from front panel for extremely accurate calibration. Receiver disabling circuit operates on Send position. Tube complement: 1-6SJ7 P.T.O.; 3-6AG7 Multipliers, 1-2E26 r.f. amp., 1-5R4GY H.V. rect., 1-3Z4 L.V. rect., 1-6H6 bias rect., 1-VR105 voltage reg., 1-VR150 voltage reg. Dimensions, $19 \times 10\frac{1}{2} \times 9\frac{1}{2}$ " high. Operates on 115 volts a.c. Complete with tubes and instruction book. **\$190.00**
CAT. NO. 35-004 310B-1 Exciter. Net
CAT. NO. 35-005 310B-3 With antenna network. Net Price \$215.00

The New

HALLICRAFTERS SX-62

FM/AM All-Wave Receiver

- SWL Version of The Famous SX-42
- Coverage—540 KC-109 MC Including FM
- Built-In Crystal Calibrator



NATIONAL NC-57



National NC-57 Receiver

A superhet receiver with seven tubes plus a full-wave rectifier and rectifier giving continuous frequency range from 540 kc. to 13.5-35 mc.; band A, 35-55 mc.; band B 13.5-35 mc.; band C 4.65-13.5 mc.; band D, 1.6-4.65 mc.; band E, 0.54-1.6 mc. Covers 80, 40, 20, 15, 10-11, 6 meters. Audio output is 3 watts fed into a 5" PM speaker with an output transformer mounted on speaker to match output tube impedance. Phone jack automatically cuts out speaker when plug is inserted. Designed for operation on 105-130 volts 50-60 cycles; power consumption, 34 watts. Socket mounted at rear for connection of external accessories supplies 6.3 volts AC, 150 volts regulated and 250 volts unregulated DC. Complete with tubes and speaker. **\$89.50**
 CAT. NO. 36-034 Net Price
 Illuminated plug-in signal level meter calibrated in "S" units, for NC-57.
 CAT. NO. 36-035 Net Price **\$14.95**

With all the spectacular features that the all-wave listener has been waiting for—supreme performance on any frequency—standard BC, SW, vision dial. Only one band lights up at a time. A built-in crystal calibration oscillator—flip of switch puts 500 KC test signals across the dial. Continuous AM reception from 540 KC to 109 MC; FM reception 27-109 MC. Temperature-compensated oscillator with voltage regulator. Two r.f. and 3 i.f. stages; dual i.f. channels (455 KC and 10.7 MC). Audio flat 60-15,000 c.p.s.; 8-watt push-pull output.

CONTROLS: Band Selector—540-1620 KC; 1.62-4.9 MC, 4.9-15 MC, 15-32 MC, 27-56 MC, 54-109 MC; Receive/Standby; Crystal Calibration On/Off; Noise Limiter; Tuning; AF gain; Phono FM/r.f. Gain; and Calibration Reset.

CONNECTIONS: Doublet or single-wire antenna; 500 and 5000 ohms output; phone jacks; phono connections; 105-125 a-c line.

TUBE COMPLEMENT: 2-6AG5's r.f. amps.; 7F8 conv.; 6SK7 i.f. amp.; 6SG7 i.f. amp.; 7H7 i.f. amp.; 7H7 limiter and AM det.; 6H6 disc.; 7A4 BFO; 6C4 calib. osc.; 6SL7 a.f. amp.; 2-6V6's p-p out-Gray steel cabinet with satin chrome trim; piano-hinged top. Size, 20 x 10 1/4 x 16" deep.

CAT. NO. 36-061 SX-62 complete with tubes. For 105-125 volts, 50-60 cycles. Net Price **\$269.50**

CAT. NO. 36-062 SX-62 complete with tubes and R-42 Speaker. Net Price **\$303.50**
 CAT. NO. 36-063 SX-62U complete with tubes, for 105-125 and 210-250 volts, 25-60 cycles, less speaker. Net Price **\$302.00**

The RADIO SHACK Corp.

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 167 WASHINGTON ST., BOSTON, MASS., U.S.A.