



TEST EQUIPMENT



NEW AUTOMATIC TUBE TESTER INSERT CARD—TEST TUBE!

MODEL WT-110A. Highly dependable, exceptionally versatile portable tube tester. Designed to save valuable time—simply insert pre-punched card into tester! Card automatically sets up all filament, bias signal, plate, and screen voltages under heavy load conditions. Tests transconductance, gas, shorts and twin tube balance. Tests each section of multi-section tubes. Easy-to-read meter registers "RENEW—?—GOOD". Two gold-plated printed circuit boards set up a combination of 15 to 20 circuits which permit: Socket connections up to 10 pins, 220 combinations of heater voltage, 10 bias voltages, 5 plate voltages, 11 values of cathode resistors, 2 screen voltages, and 50 quality sensitivity ranges. Warranty includes free subscription that supplies card settings for each new tube as it is announced. 241 pre-punched vinyl plastic cards (covering 95% of tubes) supplied with each tester. In $7\frac{1}{4} \times 14\frac{1}{2} \times 17\frac{1}{2}$ " carrying case. With master card for punching blanks (below) and test card. For 105-125 v., 60 cycle AC. Shpg. wt., 28 lbs.

87 FZ 075. NET.....199.50

WG-325. 24 blank cards for replacement or new tube types. Wt., 1 lb.

87 F 076. NET.....1.50

WG-326. Card Hand Punch. Wt., 1 lb.

87 F 078. NET.....5.95

VTVM & VOM PROBES

WG-299B DC/AC-OHMS PROBE. With shielded cable and coaxial connector. Switch selects function. Shpg. wt., 1 lb.

87 F 058. NET.....8.75

WG-299C DC/AC-OHMS PROBE. As above, but for WV-87B. Shpg. wt., 1 lb.

87 F 077. NET.....8.75

WG-301A CRYSTAL DIODE PROBE. Slips on DC. Less multiplier (below). With shielded cable and phone tips. Shpg. wt., 8 oz.

87 F 052. NET.....7.75

WG-264 CRYSTAL DIODE PROBE. As above, but for WG-218 probe. Wt., 12 oz.

84 F 084. NET.....7.75

WG-290 HIGH-VOLTAGE PROBE. Adapts VOM's and VTVM's to read to 50,000 v. DC. Less multiplier (below). With shielded cable and phone tips. Shpg. wt., 1 lb.

84 F 076. NET.....7.15

WG-289 HIGH-VOLTAGE PROBE. As above, but has coaxial connector. Wt., 1 lb.

84 F 077. NET.....7.15

MULTIPLIERS. For WG-290 & WG-289. 2 oz.

84 F 079. WG-206, 1090 meg.

84 F 080. WG-207, 991 meg.

84 F 081. WG-208, 400 meg.

84 F 082. WG-209, 480 meg.

84 F 083. WG-210, 900 meg.

NET EACH.....2.80



WV-98A



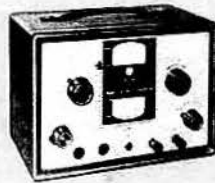
WA-44B



WV-77C



WR-49B



WA-44B



WR-69A

WV-98A SENIOR VOLTOHMYST

Has $6\frac{1}{2}$ " meter, accuracy improved to $\pm 3\%$, and single-unit DC-AC-Ohms probe with built-in selector switch. Excellent for measurement of complex TV waveforms—reads peak-to-peak voltages to 4200 volts. 7 ranges for each function. Reads AC rms and DC to 1500 volts. Measures resistance from 0.2 ohms to 1000 megohms. AC input impedance of 0.83 megohm and 70 mmf to 1.5 megohms and 60 mmf. Input resistance on DC is 11 megohms. Size, $6\frac{1}{2} \times 7 \times 3\frac{3}{4}$ ". With WG-299B probe. For 105-125 volts, 50-60 cycle AC. Shpg. wt., 7 lbs.

87 F 050. NET.....79.50

WV-77C JUNIOR VOLTOHMYST

Improved model of the popular WV-77B-VTVM. Features WG-299B DC/AC-Ohms probe with built-in selector switch. Redesigned front panel with easy-to-read $4\frac{1}{2}$ " meter. 5 ranges on all functions. Reads AC rms and DC to 1200 volts. Accuracy on AC and negative DC volts is $\pm 5\%$; on positive DC volts, $\pm 3\%$. Measures resistance from 0.2 ohms to 1000 megohms. AC input impedance 0.2 megohms and 75 mmf to 2 megohms and 50 mmf. Input resistance is 11 megohms. Size, $8 \times 5\frac{1}{2} \times 4\frac{1}{2}$ ". Complete with WG-299B probe. For 105-125 volts, 50-60 cycle AC. Shpg. wt., 5 lbs.

87 F 051. NET.....59.50

WV-87B MASTER VOLTOHMYST

New, deluxe VTVM with $7\frac{1}{2}$ " mirrored-scale meter. Reads peak-to-peak to 4200 volts. Response: 30 cps-3 mc. Has zero-center for FM discriminator alignment. Reads DC current to 15 amps. Measures DC voltage to 1500 in 7 ranges. Reads AC rms to 1500 volts; AC input impedances from 0.83 meg and 85 mmf to 1.5 meg and 75 mmf. DC resistance to 1000 meg in 7 ranges. Accuracy, $\pm 3\%$ of full scale for DC; $\pm 3\%$ of full scale for AC. $10 \times 13\frac{1}{2} \times 7$ ". With WG-299C probe and cables. For 105-125 volts, 50-60 cycle AC. Wt., 9 lbs.

87 FZ 066. NET.....137.50

WR-49B RF SIGNAL GENERATOR

New, accurate RF signal generator. Continuous coverage from 85 kc-30 mc, in 6 ranges, all on fundamentals. Excellent for aligning AM and FM receivers. Dial calibration accurate within 1%. Built-in 400-cycle oscillator for internal or external modulation. Attenuator for positive control of RF level. Approximate range: 2000 to 1. Cathode-follower output stage isolates oscillator from effects of load; assures high stability. RF output voltages at least 0.05 v. rms and 0.01 v. rms at high and low connectors respectively. With cable. Size: $7\frac{1}{2} \times 10\frac{1}{2} \times 6$ ". For operation from 105-125 v., 50-60 cycle AC. Shpg. wt., 10 lbs.

87 FZ 079. NET.....79.50

WA-44B AUDIO SIGNAL GENERATOR

For measuring intermodulation, response, input and output impedances, resonant frequency of speakers, etc. 4 ranges: 11-110 and 110-1100 cps; 1.1-11 and 11-100 kc. Has separate 60-cycle, variable-amplitude output. Cathode-follower output. "Hi" and "Lo" outputs: 0-2.5 and 0-15 volts (rms). Frequency stability, 3%. Response, ± 1 db (1100 cps reference). Total harmonic distortion, 2% (max.) from 30 cps to 15 kc. Hum level, 0.1% or less. Size, $7 \times 10\frac{1}{2} \times 6$ ". For operation from 105-125 v., 50-60 cycle AC. Shpg. wt., 12 lbs.

87 FZ 053. NET.....107.50

WR-69A TV-FM SWEEP GENERATOR

New sweep generator provides test and alignment signals for TV video, IF, and RF channels 2-13—plus IF and RF signals for FM radio. Continuous IF coverage from 50 kc to 50 mc. Pre-set switch for channels 2-13. Sweep width, 12 mc, continuously variable. Output flat within 0.1 db per mc of sweep width. Fundamental oscillator output on TV channels; filtered beat-frequency fundamental output on IF/VF range. Output, 1 volt RMS or better at all frequencies. Blanking circuit. Size: $10 \times 13\frac{1}{2} \times 7\frac{1}{2}$ ". With cables. For 105-125 volts, 50-60 cycle AC. Shpg. wt., 17 lbs.

87 FZ 070. NET.....295.00

OTHER RCA INSTRUMENTS

WR-70A RF-IF-VF-MARKER ADDER. For RF, IF and video sweep-alignment of black-and-white and color sets. 4 differently shaped markers. Use with marker and sweep generators. Marker signal is added after sweep passes through receiver—eliminates distortion of marker or sweep curve. 0-60 db attenuation of IF sweep signal for IF or video alignment. $10\frac{1}{2} \times 7\frac{1}{2} \times 6\frac{1}{4}$ ". For 105-125 v., 50-60 C. AC. 12 lbs.

87 FX 055. NET.....97.50

WG-295B VIDEO MULTIMARKER. For use with sweep generator on black-and-white and color sets. Checks response of chrominance bandpass filter, and alignment of I and Q filters. 7 simultaneous absorption-type markers (mc): 0.5, 1.5, 2.5, 3, 3.58, 4.1, and 4.5. Size: $5 \times 2\frac{1}{2} \times 2\frac{1}{2}$ ". Wt., 1 lb.

87 F 054. NET.....32.50

WG-307A TV BIAS SUPPLY. New for black-and-white and color TV. 3 output voltages for RF, IF and AGC adjustable from 0 to 15 v.; 1 output, 100 v., for chrominance circuitry. Size: $2\frac{1}{2} \times 3 \times 5\frac{1}{4}$ ". For 105-125 v., 50-60 cycles AC. Wt., 2 lbs.

87 F 067. NET.....22.50

WG-304A RF MODULATOR. Crystal-type mixer. For use with WR-69A and WR-99A to check TV response from antenna to picture tube. $1\frac{1}{2} \times 4 \times 2\frac{1}{2}$ ". Wt., 1 lb.

87 F 057. NET.....28.50



WR-61B



WR-46A



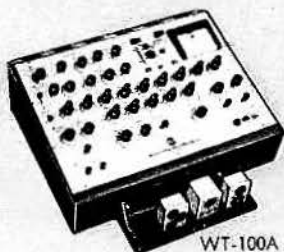
WO-56A



WO-88A



WR-99A



WT-100A



WV-84B



WO-91A 5" OSCILLOSCOPE

5" wide-band oscilloscope for black-and-white and color TV servicing. Features: Dual-band response; wide-band position flat within ± 1 db from 10 cps to 4.5 mc and narrow-band position flat within -6 db from 10 cps to 1.5 mc, and voltage-calibrated, frequency-compensated 3-to-1 step attenuator. Removable, multi-scale graph screen. Vertical polarity reversal switch. Preset vertical and horizontal sweep positions. Built-in calibration for peak-to-peak voltage measurements. Plus or minus internal sync selector. Positive-lock internal sync. Sensitivity is 0.05 volt peak-to-peak per inch (0.018 volt rms) in narrow-band position and 0.150 volt peak-to-peak per inch (0.053 volt rms) in wide-band position. Vertical input impedance 75 mmf and 1 meg direct, and 11 mmf and 10 meg low-capacitance position, with WG-300A probe supplied. Type 5UP1 CRT. Size: $13\frac{1}{2} \times 9 \times 16\frac{1}{2}$ ". For operation from 105-125 v., 50-60 cycle AC. Shpg. wt., 33 lbs.

84 FZ 049. NET. 239.50

WR-61B COLOR-BAR GENERATOR

For checking color TV sets, and for adjusting color phasing and matrixing. Produces 10 bars of different colors, simultaneously. Provides picture-carrier, color-subcarrier and sound-carrier frequencies on channel 3. Luminance signals at edges of bars for checking registration of luminance and chrominance signals. "Sync level Pedestals" for checking signal ratio through the three chrominance channels to indicate potential troubles. Size: $9\frac{1}{4} \times 13\frac{1}{2} \times 7\frac{1}{4}$ ". For operation from 105-125 volts, 50-60 cycle AC. Shpg. wt., 18 lbs.

87 FZ 065. NET. 259.50

WR-46A DOT-BAR GENERATOR

This dot-bar-crosshatch generator features a high level video output for driving the picture tube directly; or, the video amplifier of color or black-and-white receivers. Provides interlaced pattern of small dots and a choice of vertical or horizontal bars and a crosshatch. Vertical bars adjustable from 8 to 26 bars—15 horizontal bars only 2 lines wide. Fully adjustable video output voltage. Direct sync from TV signal allows convergence adjustment independent of receiver characteristics. Polarity reversal switch. With all leads and cables. $10 \times 13\frac{1}{2} \times 8$ ". For 110-120 v., 60 cycle AC. 20 lbs.

87 FZ 056. NET. 179.50

NEW WR-99A MARKER-GENERATOR

Crystal-calibrated marker-generator for aligning TV sets and other electronic equipment in the 19-216 mc range. Crystal calibrator provides 240 check points for accurate calibration at 1 or 10 mc intervals. Modulation frequencies: 1, 10, 4.5 mc, 600 cycles. Sound and picture carrier markers available simultaneously. Output: At least 0.1 v. rms on all frequencies. Double-shielded oscillator for reduced leakage. $10 \times 13\frac{1}{2} \times 7\frac{1}{4}$ ". For operation from 105-125 v., 50-60 cycle AC. Shpg. wt., 18 lbs.

87 FZ 069. NET. 242.50

WP-25A TV ISOTAP

Isolation and autotransformer. For checking TV sets at high, medium and low voltage. Selects 105-115 volts in 5-volt steps. Outputs: 105, 115 and 130 v. @ 500 VA from autotransformer winding; 105, 115 and 130 v. @ 275 VA from isolated secondary. $5 \times 5\frac{1}{4} \times 4\frac{1}{2}$ ". For 50-60 cycle AC. With 5 ft. line cord. Wt., 15 lbs.

62 G 516. NET. 22.00

PROBES FOR RCA OSCILLOSCOPES

WG-300A DIRECT/LOW-CAPACITANCE PROBE. With switch, cable and coaxial connector. Shpg. wt., 1 lb.

87 F 059. NET. 14.25

WO-56A TV FM-AM OSCILLOSCOPE

Big 7" screen. DC or AC input. Frequency-compensated, voltage-calibrated attenuators. Vertical response flat, within 2 db, to 500 kc, useful beyond 2 mc. Input impedance: One megohm, 75 mmf with direct probe 9.5 mmf with low-capacitance probe. Sensitivity: 10.6 rms mv/inch or 30 mv. p-to-p using direct probe; 106 rms mv/inch or 300 mv. p-to-p, using low-capacitance probe. Sweep: Variable, 3-30,000 cps with fast retract and preset fixed positions for TV-vertical (30 cps) and TV-horizontal (7875 cps). Has peak-to-peak calibrating voltage source. $13\frac{1}{2} \times 9 \times 16\frac{1}{2}$ ". With WG-300A probe. 7VP1 CRT. For 105-125 v., 50-60 cyc. AC. Shpg. wt., 38 lbs.

84 FZ 085. NET. 289.50

LAB ACCURACY INSTRUMENTS

WT-100A MICRO-MHO-METER. Laboratory-quality tube testing instrument for production line and laboratory use. Check general-purpose and industrial-type receiving tubes and low-power transmitting tubes. Measures control grid-to-plate and suppressor grid-to-plate transconductance with better than 5% accuracy. Regulated power supply for DC voltages. Measures individual electrode currents, AC heater currents, voltage drop across electron tubes, dry-disc rectifiers and crystal diodes. Blue-gray case. Size: $8 \times 18\frac{1}{2} \times 23\frac{1}{2}$ ". For 105-125 v., 50-60 cycle AC. Shpg. wt., 110 lbs.

84 FZ 021. NET. 785.00

INDUSTRIAL SOCKETS. Heavy-duty type for production line testing. Av. wt., 1 lb.

WG-233A. 7-pin, miniature socket.

87 F 061. NET. 25.00

WG-234A. 8-pin octal socket.

87 F 062. NET. 25.00

WG-235A. 9-pin noval socket.

87 F 063. NET. 25.00

WG-236A. Kit of plug-in socket parts for WT-100A (less sockets and with unpunched cover plate). Shpg. wt., 1 lb.

84 F 064. NET. 15.00

WV-84B DC MICROAMMETER. New, battery-operated DC microammeter. Reads from .0002 to 1000 microamperes in 6 ranges. Reads current below 1-billionth amp. Voltage drop at full scale $\frac{1}{2}$ volt, all ranges. Meter protected against burnout. With batteries. $9\frac{1}{2} \times 6\frac{1}{2} \times 5\frac{1}{4}$ ". Shpg. wt., 10 lbs.

87 F 074. NET. 110.00

WO-88A OSCILLOSCOPE

Popular priced 5" oscilloscope featuring a direct-coupled, push-pull vertical amplifier to provide flat response within 3 db from 0-500,000 cps—excellent reproduction of square waves and sync pulses. Sensitivity: vertical with direct probe, 25 rms millivolts/inch; vertical with low-capacitance probe, 0.25 rms volts/inch. Impedance: Vertical direct probe, 1 meg and 75 mmf; vertical with low-capacitance probe, 10 megs and 9.5 mmf; horizontal, 2.2 meg and 55 mmf. Sweep: variable from 15-30,000 cps. Frequency-compensated step attenuator. Green graph screen is calibrated for peak-to-peak voltage. Excellent shielding throughout. Housed in blue Hammered case. Size, $13\frac{1}{2} \times 9 \times 16\frac{1}{2}$ " deep. Supplied complete with WG-300A direct/low-capacitance probe, ground lead, alligator clip and instructions. For 105-125 volts, 50-60 cycle AC. Shpg. wt., 32 lbs.

84 FZ 089. NET. 179.50

WG-388A WIDE-BAND MODIFICATION KIT. To adapt WO-88A scopes for color television use. Includes all parts and instructions for modification. No special tools required. Provides wide and narrow-band operation from DC to 4.5 mc. Sensitivity: 700 mv peak-to-peak per inch with direct probe. Shpg. wt., 1 lb.

84 F 006. NET. 5.95