

SUPREME

Testing

RADIO & TELEVISION INSTRUMENTS

SUPREME INSTRUMENTS CORPORATION, GREENWOOD, MISS.

**RADIO'S FINEST
MODEL 504A
QUALITY COMBINATION
TUBE & SET TESTER**



**THE PORTABLE LAB
IT GIVES YOU
EVERYTHING**

THE MODEL 504-A is radio's finest quality combination tube tester, battery tester, condenser tester, and set tester. Its improved circuit correctly tests all types of tubes, including loctals, octals, non-octals, television video amplifiers, single-ended types, Bantam Jr., Miniatures, Pilot lights, etc., 32, 35, 40, 50, 70, 85, 117 volt and all others regardless of type. It provides correct filament voltages from $\frac{3}{4}$ volt to full line voltage. It provides further protection against obsolescence by the use of Supreme's patented double floating filament return selector **push button** system, which automatically re-connects each tube socket for any possible tube base arrangement. This is positive protection against future re-arrangement of tube bases—let tube elements roam where they will, and even if the filament should be brought out at the top cap, all you have to do to take care of it is press a button. Thus, only one socket of each type is necessary. You can't put the tube in the wrong socket. Speediest operation is assured because of the new rotary chart and "arrow-way" testing system. Set controls from left to right—"just follow the arrows." One year **FREE** tube setting service.

All tests are made at properly applied anode voltages and rated loads for all tube types with provisions for noise test (using phones) for locating noise, loose and bad connections. A rheostat line adjustment accurately matches tester to line voltages from 100 to 133 volts. A neon lamp provides "hot" leakage tests at R.M.A. recommended sensitivity—checks for leakage, shorts, open elements and filament continuity. By merely pressing a button the sensitivity of this neon lamp is increased to 2,000,000 ohms for checking cathode leakages in audio amplifier tubes. Tests are made on sections of multi-section tubes such as duplex-diode triodes; double diodes; full-wave rectifiers; etc. Fifteen years experience in manufacture and research of tube testers insures you complete satisfaction from the operation of the Model 504-A.

In designing the set tester circuit of the Model 504-A, each circuit function and range was selected for (1) greatest usability (2) maximum range overlap (3) closest accuracy and (4) lowest "per-range" cost. Thirty-one ranges provided as follows:

0.1 TO 2500 DC VOLTS—7 vitally necessary DC voltage ranges from 0.1 volt first scale division to 2500 volts! 0/5/25/100/250/500/1000/2500. At 1,000 ohms per volt **standard** sensitivity, you can make DC voltage measurements in radio and television receivers and, if you are a "Ham," use the high voltage ranges on your transmitter and scope.

0.1 TO 1,000 AC VOLTS—5 AC voltage ranges from 0.1 volt to 1,000 volts (0/5/10/50/250/1000) allow you full opportunity to check all tube filament voltages, local line voltage, even AC voltage of complete secondary windings of power transformers. Note that there is **NO SWITCH TO HOLD DOWN**—its use is unnecessary in this new circuit. Note also that the copper-oxide rectifier is **GUARANTEED** the same as every other **PART!** Note **further** that this newly designed "Perma-Grad" AC voltmeter circuit is **FULLY TEMPERATURE COMPENSATED** so you can use it in winter or summer with equal accuracy!

10 MICRO-AMPERES TO 10 AMPERES—7 Direct Current ranges from 10 micro-amperes to 10 amperes (0/500 microamps/2.5/10/50/250 mils/1/10 amps) were included so small currents in screen, grid, plate and tube circuits can be measured as well as large currents in tube filament and automobile receivers.

0.1 TO 1,000 OUTPUT VOLTS—You can use the output ranges of the SUPREME 504-A Tube and Set tester together with any Signal Generator (such as the SUPREME 571) for receiver alignment. **NO BUTTON TO HOLD DOWN—NO EXTERNAL CONDENSER NECESSARY;** 5 unbridged ranges of 0/5/10/50/250/1000 volts give you every advantage in rapid, efficient receiver adjustment.

0.1 TO 20 MEGHOMS—A wide range ohmmeter and megohm-meter circuit offers you measurements as low as 0.1 ohm first scale division (for checking voice coils) up to 20 megs for high resistance amplifier resistor tests. 5 ranges give you perfect overlap as 0/200 is the low range with 3.5 ohms center scale and total ranges of 0/200/2M/20M/2 meg./20 meg.

ELECTROSTATIC LEAKAGE TESTS—Most neon bulb type electrostatic leakage circuits only measure leakage up to 2 megohms or less. The Model 504-A gives you **10 TIMES** this sensitivity by measuring all paper or mica condensers on the 20 megohm resistance range of the meter.

ELECTROLYTIC LEAKAGE TESTS—Here is a truly **COMPLETE** electrolytic leakage test! All electrolytic capacitors including high voltage filter capacitors and low voltage—high capacity bypass condensers are checked **AT THEIR CORRECT WORKING VOLTAGE!** Seven individual working voltages are at your finger tips—450, 300, 250, 200, 100, 50, and 25 volts. Tests are made on a "Good Capacitor—Bad Capacitor" English reading scale for easy operation. Another "**EXCLUSIVE**" SUPREME feature not found in **ANY OTHER TUBE AND SET TESTER!**

BATTERY TESTS—Batteries must be checked under the loads at which they are to operate. The battery testing circuit of the Model 504-A provides this load. Plainly marked on the panel are the voltages for all of the commonly used dry portable batteries. The condition of the battery is indicated on an English reading "bad-good" scale.

ONE PAIR OF PIN JACKS—29 ranges operate from but one set of pin jacks. No switching around of test leads—no confusion—no lost time. The 2500 DC volts range and the 10 DC ampere range are terminated in separate jacks to withstand the high voltage and current.

"SPEED-WAY" OPERATION—The same push button switches are used for both tube tester and multimeter measurements. Any function is obtained by pressing one button on the left hand row and any range obtained by pressing one button on the right hand row. Thus, you have instant control of all 31 functions and ranges.

ACCURACY—All multimeter ranges factory calibrated to within 2% on DC and 3% on AC measurements. Individual specially selected, heat treated and aged ceramic resistors for all voltmeter functions. Wire wound resistors used in all current measuring ranges. Push button switches use heavy, silver plated contacts for long, trouble-free operation.

MORE VALUE FOR LESS MONEY—When you use your SUPREME 504-A Tube and Set Tester, you will immediately see that it offers more value for less money than ever before. See this remarkable instrument at your radio jobber's **TODAY.**

Size 14 $\frac{3}{8}$ " x 12 $\frac{1}{8}$ " x 5 $\frac{7}{8}$ ". Shipping Weight, 20 lbs.

RANGE STABILITY ACCURACY

MODEL 571

OSCILLATOR ▶

SPEEDY SIMPLE OPERATION



HERE is a signal generator designed to reduce to a minimum drift of oscillator frequency caused by change in line voltage, humidity, temperature, and aging. By its unusual construction, reduces the allowable error in **any** selected frequency to $\frac{1}{2}$ of 1% or less. Here is a new circuit which uses air dielectric trimmer condensers and impregnated iron tuned inductors—this high quality L/C combination increases the coil "Q" tremendously, and results in absolute freedom from temperature and humidity frequency drifts. But most important it allows laboratory factory calibration at both ends of the dial so that the dial tracks with **every** frequency and assures positive accuracy of frequency throughout the entire tuneable range.

Has fundamental bands of 65—205 KC.; 205—650 KC.; 650—2050 KC.; 2050—6500 KC.; 6.5—20.5 MC.; Ranges on harmonics to 82 MC. All five fundamental ranges are read on but **two** basic scales. Read the dial just as you would your multimeter—you get the correct frequency without bother, charts, or extra vernier adjustments. The dual ratio dial gives you a complete revolution of the dial with only one turn of the knob, but with a turn in the opposite direction you have a fine "low-g geared" 5 to 1 vernier adjustment. For even greater accuracy the dial is illuminated and has a hair line indicator which completely eliminates parallax.

The SUPREME 571 is ideal for catching 2nd Detector distortion in a radio receiver. This fine instrument has not **one** modulation level but **two**—30% for conventional testing and 75% high level modulation for quick, easy analysis of this baffling service problem. By using 75% high level modulation SUPREME engineers, for the first time, offer servicemen an actual reproduction of present day high level broadcast signals. Where a 30%

modulated signal would be detected with good wave form, a broadcast program using high level modulation might easily result in unwanted distortion.

Output controllable through a non-shortening ladder type double shielded attenuator. Double shielding is also extended to the complete chassis which minimizes unwanted leakage. You can use the 571 to produce 5 types of signals. (1) As a straight C.W. Oscillator. (2) As a 400 cycle, 30% standard audio modulated R.F. Oscillator. (3) As a 400 cycle, 75% high level audio modulated Oscillator. (4) As an externally audio modulated R.F. Oscillator (using a phonograph pick-up and audio amplifier) or (5) 400 cycle fixed audio note for testing audio amplifiers, etc. The 571's demodulated wave is sine wave in shape, even at the high frequency it will not change when used with or without audio modulation.

Remember—stability—accuracy—unparalleled frequency range—speedy and simple operation—multi-meter type scale—freedom from frequency drift—two speed knob—absence of parallax—illuminated dial—two modulation levels—nonshorting ladder type attenuator—double shielding throughout—five types of signals obtainable. Comes to you in a beautiful oak case, complete with all accessories, detailed, easily understood instructions.

Size $9\frac{1}{2}$ " x $8\text{-}11/16$ " x $7\frac{3}{8}$ ".

Shipping Weight, 19 lbs.



MODEL 599 TUBE AND SET TESTER

Just as the 589 is your best value in a tube and battery tester, the 599 is your best value in a combination tube tester, battery tester, and set tester. The Model 599 has all of the features of the 589. It gives you the same modernized tube testing circuit; the same patented SUPREME Double Floating Filament Return Selector system which is your protection from obsolescence; the same accuracy plus provisions for visually checking leakage, shorts, open elements and filament continuity; the same battery testing circuit which provides the proper load for testing all 1.5, 4.5, 6.0, 45, and 90 volt portable radio batteries; the same "arrow-way" system to speed up your work; the same roller chart with a complete tube setting service for one year free. Be sure to read the complete description of the Model 589 tube and battery tester on the opposite page. The Model 599 has all of this and, in addition, is a complete set tester. Consider this value—an AC, DC volt, ohm, megohm, milliammeter, at a cost of only a few cents a day.

0.2 TO 1500 DC VOLTS

5 carefully selected ranges from 0.2 volts first scale division to 1500 volts—0/6/15/150/600/1500. All ranges have 1000 ohms per volt STANDARD sensitivity.

0.2 TO 600 AC VOLTS

4 AC voltage ranges [0/6/15/150/600] from 0.2 volt to 600 volts cover all potentials normally encountered in radio service including line voltage, filament voltages, and higher voltage secondary windings. Uses copper-oxide rectifier fully protected from overload damages. Rectifier GUARANTEED same as remainder of instrument.

0.2 M. A. TO 600 M. A.

Three direct ranges [0/6/60/600] allow measurement of screen, plate "B" supply and DC filament loads.

0.2 TO 600 OUTPUT VOLTS

Can be used with any signal generator for alignment of receivers. NO BUTTON TO HOLD DOWN—NO EXTERNAL CONDENSER necessary. Ranges include 0/6/15/150/600.

0.1 OHM TO 20 MEGOHMS

4 ranges 0/200/20,000/2 meg./20 meg. A low range at high current with 3.5 ohms center scale is ideal for checking resistances and joints of R. F. antenna, oscillator and I.F. coils. The 20 megohm range covers the high resistors found in A.V.C., A.F.C., etc., circuits. The two intermediate ranges cover the plate loads, screen dropping, bleeder, etc., resistors.

ELECTROSTATIC LEAKAGE TEST

The Model 599 provides an excellent test of paper condensers by means of the highly sensitive 20 megohm range. Much better than neon lamp methods as the ohmmeter is calibrated.

ELECTROLYTIC LEAKAGE TEST

Leakage in electrolytic condensers can readily be checked with the megohm ranges of the Model 599.

TUBE TESTING CIRCUIT

Completely modernized emission circuit including short, leakage between elements, and noise tests. Quality tests made at proper anode loads and voltages. For complete description see Model 589 in this catalog.

BATTERY TESTING CIRCUIT

Tests most commonly used dry portable batteries of 1.5/4.5/6.0/45/90 volts under proper load. Condition of battery read on English reading "Replace—Good" scale.

SPEEDY OPERATION

Roll chart listing of tubes provides for fast and accurate testing of tubes. "Arrow-ways" lead from tube chart listing to proper controls so that "correct operation" is obtained at a glance.

QUALITY AND APPEARANCE

Although priced low, this tester is built from high quality parts and has a professional appearance which will reflect credit to its owner. It has ribbed black panel with highlights dulled enough to remove glare. The instrument is housed in a smart luggage type carrying case with removable lid.

Size 11 $\frac{1}{8}$ " x 8 $\frac{7}{8}$ " x 5 $\frac{3}{8}$ ". Shipping Weight, 11 lbs.

SUPREME TESTING INSTRU

MODEL 589 TUBE AND BATTERY TESTER



TUBE TESTING CIRCUIT—The Model 589 Tube and Battery Tester has a completely modernized circuit. The basic principles of this circuit have already been proved by more than 100,000 SUPREME Testers still in use. The tube test sockets are not wired directly to the circuit but, instead, pass through the Patented Supreme Double Floating Filament Return Selector System which automatically reconnects all tube elements to any possible tube base arrangement. Due to the fact that any or all elements of each socket can be rotated to any desired position, only one socket of each type is necessary—no spare sockets—no doubtful "wiring-in." Even if a filament should be brought out to the top cap, the "return selector" will take care of it.

OBSCOLESCENCE—SUPREME was the first to announce a tester with filament voltages from $\frac{3}{4}$ volts to full line voltage—and, therefore, protected thousands of owners against developments which came later. SUPREME instruments stay modern! Other testers have been discarded after one or two years, but SUPREMES of the same age are still up-to-date—even after five years of service, because of our exclusive tube base switching circuit, SUPREME tube testers can be completely modernized at nominal cost by a replacement transformer. This is not an advertising claim, but a **proved record**.

ACCURACY—Each tube is tested at its correct anode potential under proper loads. The correct anode voltages and loads are supplied through a circuit selector switch which allows the testing of rectifiers, R.F. amplifiers, diodes, converters, cold cathode rectifiers, magic eye, power amplifiers, and bantams. A filament voltage selector switch provides correct filament potentials from $\frac{3}{4}$ volts to full line voltage. Changes in line voltage and load are corrected by the use of a huge power rheostat in the primary circuit. **Filament continuity** is checked visually with a neon lamp. Leakage, shorts and **open elements** are checked with a neon lamp at the recommended R.M.A. sensitivity. Tests are provided for **separate sections** in multi-purpose tubes. Also checks ballast tubes and pilot lamps.

NOISE TESTS—Use a pair of head phones, if you want to; a circuit insert is provided for checking noise, leakage, loose and bad connections.

BATTERY TESTING CIRCUIT—Because a battery reads its rated voltage on a voltmeter doesn't necessarily mean that the battery is good. It must be checked under the loads at which it is to operate. The battery testing circuit of the Model 589 provides this load, plainly marked on the panel, for the most common 1.5, 4.5, 6.0, 45 and 90 volt portable radio batteries. The "condition" of the battery is indicated on an English read "Replace-Good" scale. In setting the **proper loads** and discard points of the various type batteries, SUPREME Engineers worked in connection with the engineering depart-

ments of the largest battery manufacturers. No guess work here—if your customer's battery isn't "good" by manufacturers' standards, you sell a new one.

OPERATION—Only a glance at the panel is necessary in order to understand its operation because of the natural and logical arrangement of controls. This simple arrangement allows the checking of a complete set of tubes within half the time that is ordinarily required. "Arrow-ways" in red color lead from the tube chart to the various controls which are set as indicated opposite each tube type. Just "follow the arrows—you can't go wrong!"

TUBE CHART—Settings for all tubes are supplied on a smooth operating roller chart with a new brass-gear roller mechanism. These settings represent more than twenty thousand tests which were conducted in close cooperation with tube manufacturers. The listings are in logical numerical order and in large type. No confusion—only one tube type appears for each setting.

ONE YEAR FREE TUBE SETTINGS—SUPREME again leads the industry in offering the serviceman a much needed service. From the time that the instrument is registered, the owner will receive One Year Free Tube Setting Service on all available receiving tube types announced. This service goes to every owner automatically each three months (more often if tube announcements justify a new list). Tube settings between dates of issue will be sent free. At the end of twelve months from registration same service can be renewed for another year at a rate of only one dollar (\$1.00) which includes a new roller assembly chart. This will be sent the owner without any trouble or worry on his part.

APPEARANCE—Although very low priced, the Model 589 has as much "eye appeal" as an instrument that costs twice as much. The panel has a ribbed black background offset by satin finished highlights. The red "Arrow-ways" add enough color for distinction and match the three colored English reading meter scale. The instrument is housed in an attractive and sturdy luggage type case of brown color. This material is very durable, being especially resistant to scratches and scars to which portable instruments are usually subjected. You will be proud to show this instrument.

MATERIAL AND WORKMANSHIP—In producing the Model 589 there has been no compromise in circuit design or materials. It is the only instrument in its class which incorporates the patented double floating filament return selector system. The same manufacturing methods, careful inspection and accurate calibration are incorporated in this instrument as all other SUPREME testers. It will pay you to investigate and see this tester. Its price is the lowest at which a **good** tube tester can be built.

Size 11 $\frac{1}{8}$ " x 8 $\frac{7}{8}$ " x 5 $\frac{3}{8}$ ". Shipping Weight, 12 lbs.

MENTS ★ **HIGH QUALITY** ★ **LOW COST**

COMBINATION A.F. and R.F. METERED OSCILLATOR

★ MODEL 561



HERE IT IS! The answer to your request and hundreds of other servicemen who wrote us asking for a combination variable A. F. and R. F. oscillator with a metered output and means for modulating the R. F. with variable A. F. oscillator.

Model 561 is a signal generator with which you can do everything. Five types of signal outputs—(1) Variable audio from 15 to 15,000 cycles (2) Unmodulated R. F. from 65KC to 20.5 MC on fundamentals and to over 60 MC on harmonics (3) Variable audio modulated R. F. over same range (4) Frequency modulated R. F. for visual alignment work with any scope (5) Means for varying the percentage of audio modulation from 0 to 80%! You'll be interested in the many fine features of the SUPREME 561 Combination Oscillator which follow—

A. F. OSCILLATOR

—has a range from 15 to 15,000 cycles. This covers the complete audio spectrum on a 6-inch illuminated dial. Push-button selection of 4 output impedances (50, 500, 5,000 and 50,000 ohms) so you can match your oscillator to any input of high, medium or low impedance. The oscillator's output is center-tapped so you can use it across push-pull inputs. The accuracy of frequency and purity of wave-form is something you will rave about—less than 5% harmonic distortion over the entire range. The power output is approximately 150 milliwatts and the open circuit voltage 35 volts. The frequency response is flat within plus or minus 1 db. between 30 cycles and 10,000 cycles. 15 cycles is down 2 db., and 15,000 cycles is down 2 db. The output is fully controllable from 0 to maximum output.

R. F. OSCILLATOR

—covers from 65KC to 20.5 MC in five bands (65/205KC, 205/650KC, 650/2050KC, 2050/6500KC, and 6.5/20.5MC). For checking frequencies above this point, harmonics may be used to above 60 MC. Each range is push-button selected and only two scales are necessary for all bands. These are on a large, illuminated 6" dial with a hair-line, razor-edged type indicator which eliminates parallax. A ratio tuning mechanism allows you to find any frequency accurately. A buffer-coupled oscillator circuit with air-dielectric trimmers and iron core inductor coils allows factory calibration at both ends of each band—resulting in a guaranteed accuracy of within 1/2 of 1% at all frequencies on first three bands; 1% on last two bands.

THE PUSH-BUTTON ATTENUATOR

—is of the ladder type and also employs a fine adjustment control. The attenuator network is double-shielded (as is every other section) and is continuously variable from minimum to maximum.

METERED R. F. OUTPUT

—is available by using the built-in vacuum tube voltmeter to control output level.

The R. F. and A. F. sections can be used separately or the variable audio oscillator may be used to modulate the R. F. oscillator. A Percentage of Modulation control gives complete control from 0 to 80% modulation and you read this directly on the meter. This is just the thing for catching second detector distortion at high modulation levels!

FREQUENCY MODULATOR

After you've repaired the customer's receiver, you will want to align it for maximum signal and response. The 561 Signal Generator, together with any scope, can be used for the fastest, most accurate procedure—Visual Alignment. A Built-In Frequency Modulator employs the SUPREME electronic "lock-center-synchronize" circuit—the only basic Visual Alignment circuit which is mathematically correct. To obtain this signal, merely rotate the "output" selector to the Frequency Modulation position and this signal can be used in aligning each R. F. and I. F. receiver stage. This signal is also ideal for aligning A. F. C. (Automatic Frequency Control) circuits. The circuit has a standard band pass of 30KC so that it can be used with a calibrated screen on the scope in instantaneously determining receiver band width. Its output is continuously variable.

Heavy, double-shielding is used throughout the SUPREME 561. Special low-loss cables are furnished. Big, man-sized laboratory type tuning knobs are used. A rugged, 2% accurate meter with large easily read scale figures assures fullest accuracy.

The SUPREME 561 is more than just another Oscillator. It is a combination of four indispensable service instruments—each of highest quality and a leader in its classification. (1) A.F. Oscillator, 15 to 15,000 cycles. (2) R. F. Oscillator variable amplitude or frequency modulated. (3) Carrier and Modulation Monitor. Vacuum tube volt meter circuit. (4) Frequency Modulator. Double image, positive self-synchronizing. All correctly engineered in a single compact unit.

Size 15 1/2" x 11 1/2" x 8 3/4".

Shipping Weight, 33 lbs.

SUPREME TESTING INSTRUMENTS

MODEL 546 3" OSCILLOSCOPE

PROVED PERFORMANCE AT LOW COST!



THE MODEL 546 Oscilloscope is designed to meet the exacting requirements of Servicemen, Engineers and scientists in a wide variety of commercial fields. It has merited the endorsement of leading radio repair shops, receiver and parts manufacturers, industrial laboratories, educational institutions, hospitals, broadcast stations, factory research and inspection departments for more than five years. The following specifications show why this instrument has such an outstanding record of performance unparalleled in cathode ray equipment history.

FLEXIBLE OPERATION

All controls and terminals are logically arranged on the front panel. Hexagon knobs are used for preliminary adjustment and Bar pointer knobs for major operating controls, eliminating unnecessary confusion. Only one control for each amplifier. Timing axis and "locking" controls are grouped together. Toggle type switches used for special applications only and are out of the way of the main controls.

SENSITIVE AMPLIFIERS

Both the vertical and horizontal amplifiers are designed to produce an undistorted pattern on the screen of the cathode ray tube. The vertical amplifier is specially compensated to pass a 60 cycle square wave voltage and frequencies up to 90 kilocycles.

TIMING AXIS

A built-in "saw-tooth" oscillator provides an internal horizontal linear sweep from 15 to 30,000 cycles, permitting frequencies up to 100 kilocycles to be inspected. The sweep frequency range selector is calibrated directly on the panel. Also has vernier control for fine frequency adjustment. An external sweep input is provided for special types of time bases.

AUTOMATIC SYNCHRONIZATION

A new type of synchronizing circuit enables the operator to instantly "lock" the pattern on the screen. Eliminates the usual "fingering" to hold image stationary. External synchronization input included for special applications.

DEFLECTING PLATE CONNECTIONS

Direct connections to both the vertical and horizontal deflecting plates are accessible from the front panel. Permits observation of voltages and currents which cannot be passed through amplifiers.

The Model 546 is a practical type of oscilloscope. Radio servicemen have highly recommended it for speed and accuracy in (1) I.F. alignment (2) R.F. peaking (3) Hum location (4) Checking overload and distortion in 2nd detectors and audio amplifiers (5) Gain and frequency response tests (6) Checking A.V.C. circuits (7) Checking and adjustment of A.F.C. circuits (8) Trouble-shooting in circuits where other types of vacuum-tube voltmeters fail. It is an ideal visual indicator to be used with your present type of signal tracer. It is much more preferable to magic eyes and meters since it will indicate the amount or quantity of the signal and also distortion, hum or quality caused by incorrect alignment, faulty tubes and other parts. Research laboratories and factories have found the Model 546 the perfect instrument for observing rapid changes of voltages or currents, wave-form analysis, transients and other forms of unusual electrical phenomena. Broadcast stations find it especially valuable in making transmitter and speech amplifier adjustments. It is truly an instrument that few can afford to be without. Complete with tubes and detailed instructions.

Size
13-1/16" x 11-9/16" x 7-9/16".
Shipping Weight, 23 lbs.

MENTS ★ HIGH QUALITY ★ LOW COST

BEAT FREQUENCY

AUDIO GENERATOR

MODEL 563



THE MODEL 563 is SUPREME'S answer to a multitude of requests from Radio Servicemen and members of the vast sound and acoustic industry for a practical audio oscillator. SUPREME engineers have developed this Beat Frequency Oscillator to meet the most exacting requirements of radio service shops—manufacturers of radio, public address, motion picture sound—other audio apparatus and acoustic material—industrial and educational research laboratories—design and maintenance engineers—or wherever an accurate, controlled source of audio voltage is needed.

This is a quality instrument throughout, designed to provide the professional appearance, durability and maximum utility found in other SUPREME products. Inside the unit will be found the usual fine workmanship of expert craftsmen and technicians plus the highest quality parts the market affords. Some of the more important design points and operating characteristics prove that SUPREME again offers the best value in testing equipment.

FREQUENCY RANGE

Covers complete audio spectrum. Provides a source of alternating voltage continuously variable from 15-cycles to 15 kilocycles, which is far more than the finest radio receivers now being produced. Frequency calibrated directly in cycles on a large 6-inch metal dial with laboratory type tuning knob. Calibration divisions spread over a 280 degree 12-inch arc to permit easy and accurate dial settings.

OUTPUT IMPEDANCE

For matching the different types of audio equipment, three selections of output impedances are available from the front panel—250, 500, and 5000 ohms. Each impedance is doubled and center-tapped for push-pull and other balanced input systems.

OUTPUT CONTROL

Output can be adjusted for any level up to maximum load-voltage rating. Audio output control is continuously variable and marked linearly for reference settings.

OUTPUT

High voltage and power output. Open circuit output of 65 volts (RMS) at extremities of 5,000 ohm section. Loaded, this section will produce 50 volts total, or 25 volts, either side of center-tap. Total voltages on 250 and 500 ohm section are 14 and 9 respectively.

WAVE-FORM

Produces voltage of extremely pure sinusoidal type waveform. Harmonic distortion less than 30 db. below fundamental at 5,000 cycles and less than 25 db. below fundamental at 50 cycles. Distortion from all causes less than 5% at any frequency. Hum from power supply ripple negligible with output control set at maximum.

FREQUENCY RESPONSE

Output has virtually flat frequency amplitude characteristic over most used range. Within plus or minus 1 db. from 30 to 10,000 cycles and down 2 db. at 30 and 15,000 cycles.

OPERATION

All controls logically arranged for maximum simplicity of operation. Only two major working controls for selection of audio frequency and output level. Other controls are for preliminary adjustment and power "Off-On" switch. Zero adjustment made using line frequency as standard with neon indicator.

ACCURACY

Each tester is individually calibrated at the factory and can be re-set for zero beat by external control. Scale can be relied upon to be within plus or minus 2%.

STABILITY

Special shielding and highly impregnated inductors make it possible to have only a 100 cycle drift at 1,000 cycles during the "warm-up" period. Under normal operating conditions, a variation in frequency caused by line voltage and temperature changes is negligible.

APPEARANCE

Symmetrical arrangement of controls on beautiful Cro-art faced panel with silver and red trim. Cabinet of heavy gauge steel, finished in professional crinkle black.

APPLICATION

The Model 563 is an essential piece of test equipment in the modern radio repair shop. Provides an ideal source of test voltage for signal tracing in radio A.F. amplifiers, locating cabinet booms and speaker rattles, running frequency responsive curves, adjusting pick-ups and cutting heads, modulating standard test oscillators for fidelity tests on R.F. and I.F. stages, demonstrating and installing radios, phonographs, recorders or combinations for better performance and sound effects.

A real necessity to technicians and engineers in maintaining public address, inter-department, motion picture sound, and other types of speech amplifier systems. Checking building acoustics for reverberation, echoes, extraneous noises, dead points and adjusting padding or baffles call for a dependable audio generator. Instrument is shipped complete with tubes and detailed instructions ready for operation.

Size 13 $\frac{1}{4}$ " x 9" x 6-7/16".
Shipping Weight, 21 lbs.

NEW! MODEL 562

AUDOLYZER

A PRACTICAL SYSTEM OF
DYNAMIC TESTING AND SIGNAL
TRACING THAT TELLS
YOU THE TROUBLE!



EASE OF OPERATION

YOU will be surprised and delighted at how easy it is to operate the SUPREME MODEL 562 AUDOLYZER because it requires but one probe at a time and you always HEAR THE DEMODULATED SIGNAL. Magic eyes or meters used on some instruments are nothing more than indicators and merely determine the absence or presence of a signal. Using such devices part of the reading might be hum or distortion which can not be detected. The audolyzer not only indicates the signal but you hear the **quality** of that signal. The audolyzer is not only a complete signal tracer but a **dynamic signal analyzer**.

Here are but a few of the many things you can do with this amazing instrument! You can find the dead portion of any receiver by connecting your modulated signal generator to the receiver and touching the SUPREME AUDOLYZER's probe first to the antenna post, then the grid of the R. F. tube, the plate of the R. F. tube, etc., right back through the complete receiver. You will hear a signal in the AUDOLYZER's speaker (which has a volume control) until you hit the dead stage. No signal means a defective stage.

VACUUM-TUBE VOLTMETER!

Then you use the AUDOLYZER's **vacuum-tube voltmeter** to determine whether all the DC voltages are correct **without** disturbing the **normal** operation of the receiver! This meter has 7 ranges of 0/1/3/10/30/100/300/1000 DC volts at **15 megs input**. Resistance ranges of 0/200/2000/200,000 ohms and 0/2/20 megs. The meter is a center-reading type with "minus" voltages indicating to one side of center scale and "plus" voltages to the other side. This eliminates the necessity of your shifting test leads for polarity change.

Next, you can check the receiver's oscillator by connecting the probe to the set oscillator's output and watching the meter. If the oscillator cuts out or is weak over any portion of its range, this immediately shows up as change in the AUDOLYZER meters' indication.

CHECK FREQUENCY

To determine the unknown frequency to which **any** receiver circuit is tuned—oscillator, I. F. or R. F., just use the tuning portion of the SUPREME AUDOLYZER in connection with its V.T.V.M. as a frequency meter. For the receiver's oscillator, place the AUDOLYZER probe on the oscillator output and tune the AUDOLYZER for the greatest swing of the meter. Then read the frequency on the AUDOLYZER's direct-reading dial. For R. F. determination, connect your signal generator to the receiver's input and place the AUDOLYZER probe on the output of the R. F. stage under test. Adjust the signal generator and AUDOLYZER to the same frequency. Then adjust the receiver dial for maximum swing of the AUDOLYZER's meter needle. Finally, adjust receiver trimmer until receiver

dial reads correctly. To determine the actual signal being fed the I. F. stages, connect the probe of the AUDOLYZER to the first Det. output, feed a signal into the receiver and adjust the AUDOLYZER dial until you get maximum swing of the meter needle. Read the **actual I. F. signal's frequency** on the AUDOLYZER dial! In all of these tests the detuning effect of the probe is negligible.

GAIN MEASUREMENTS

By moving the AUDOLYZER probe from stage to stage of a receiver and noting the AUDOLYZER meter's voltage reading in each case, you can readily determine whether a stage, a tube or transformer results in a **gain** or **loss** of signal strength. Thus, you can make relative **gain measurements** with the SUPREME AUDOLYZER.

You can check the A. V. C. circuit for correct applied voltage under actual operating conditions because you have a Vacuum-Tube Voltmeter in the AUDOLYZER which instantly indicates this voltage at any place in the set—and its variation under different applied signals—without upsetting the correct operation of the set. You can adjust A. F. C. circuits in the same manner.

LOCATE DISTORTION

Distortion can easily be noted by **ear**. By placing the probe at any place where the audio signal is normally present, you can **hear** the signal and instantly determine where the distortion originates. This is also true of any R. F. or I. F. stage. If you have a scope, you can connect it to the AUDOLYZER and **see** the demodulated audio signal as well.

Leaky, shorted or open condensers can quickly be found without unsoldering them from the circuit. Because the SUPREME AUDOLYZER can be electrically divided into two sections, you can use **two** probes at a time for checking intermittents, working from the second detector's input and output toward the antenna and loudspeaker or vice versa. The AUDOLYZER can be used to check antenna efficiency as it is a fine field strength meter. You can check high impedance pickups, microphones and other input devices. You can check the receiver's loudspeaker against that in the AUDOLYZER for distortion.

You need the SUPREME AUDOLYZER in **your** service shop. It will quickly pay for itself and return you a good profit in saved time.

Size 15½" x 11½" x 8¾".
Shipping Weight, 32 lbs.

QUALITY AT LOW COST!

MODEL 542 MULTIMETER



A regular little pocket laboratory with a case only 5-7/8"x3-1/16"x2-1/8" in size, weighing but 23 ounces—24 ranges—just as accurate and even more convenient than you would expect to find an instrument twice its price.

4 DC mil ranges (with first scale division 5 microamperes) of 0/0.3/6/30/150.

4 DC volt ranges (with first scale division 0.1 volt) of 0/6/150/300/1500.

4 ohms ranges (with 1 ohm first scale division and 25 ohms center scale) of 0/2,000/20,000/200,000/2 meg.

4 AC volt ranges (with first scale division 0.1 volt) of 0/6/30/150/600.

4 Output ranges of 0/6/30/150/600.

4 Decibel ranges of -6/+10, +8/+24, +22/+38, +34/+50.

The Model 542 is not a toy—it uses a full size 3" square meter with a rugged, accurate 200 micro-ampere movement and a knife edged pointer. This movement has a sensitivity of **5,000 ohms per volt!** All ohmmeter ranges, including the megohm range are operated by batteries furnished with the instrument and contained within its durable black molded bakelite case.

Size 5-7/8" x 3-1/16" x 2-1/8".
Shipping Weight 2 lbs.

AND NOW IN ANSWER TO POPULAR DEMAND

BUILT FOR

Popular SUPREME Model 542 and Model 543 in a Blitzkrieg dress—used by the army—and telephone companies—where hard knocks are the rule rather than the exception. **Built for Punishment!** Heavy steel cover protects meter—snaps into place. Full protection without the inconvenience of the old style lid. Large, sturdy leather handle, but still small enough to slip in your pocket. Size 3-1/2"x6-1/4"x2-3/4". Weight, 2 lbs., 2 oz.

Model 542 or Model 543
Size 6-5/16" x 3-9/16" x 2-5/8" Shipping Weight, 3 lbs.

SUPREME TESTING INSTRUMENTS

**BEAUTIFULLY DESIGNED
AND RUGGED!**
- AT LOWEST PRICE

MODEL 543 MULTIMETER

The Model 543 Pocket Multimeter uses the same bakelite case as Model 542. Attractive two-color panel—full size 3" one mil meter. A single rotary selector switch provides functions and ranges of:

Resistance (1 ohm first scale division and 35 ohms center scale) —0/2,000/200,000 ohms.

Direct Current (200 microamperes first scale division) 0/6/60/600 M. A.

AC (.5 volt first scale division) 0/15/150/600/3000 volts.

DC (.5 volt first scale division) 0/15/150/600/3000 volts.



Batteries furnished and contained within case. Ranges at 1,000 ohms per volt **standard** sensitivity. With this instrument you can make AC and DC voltage measurements in radio and television receivers, and if you are a "Ham" you can use the high voltage ranges on your transmitter and scope. This is a beautifully designed and rugged little instrument at an astonishingly low price.

Size 5-7/8" x 3-1/16" x 2-1/8".
Shipping Weight, 2 lbs.

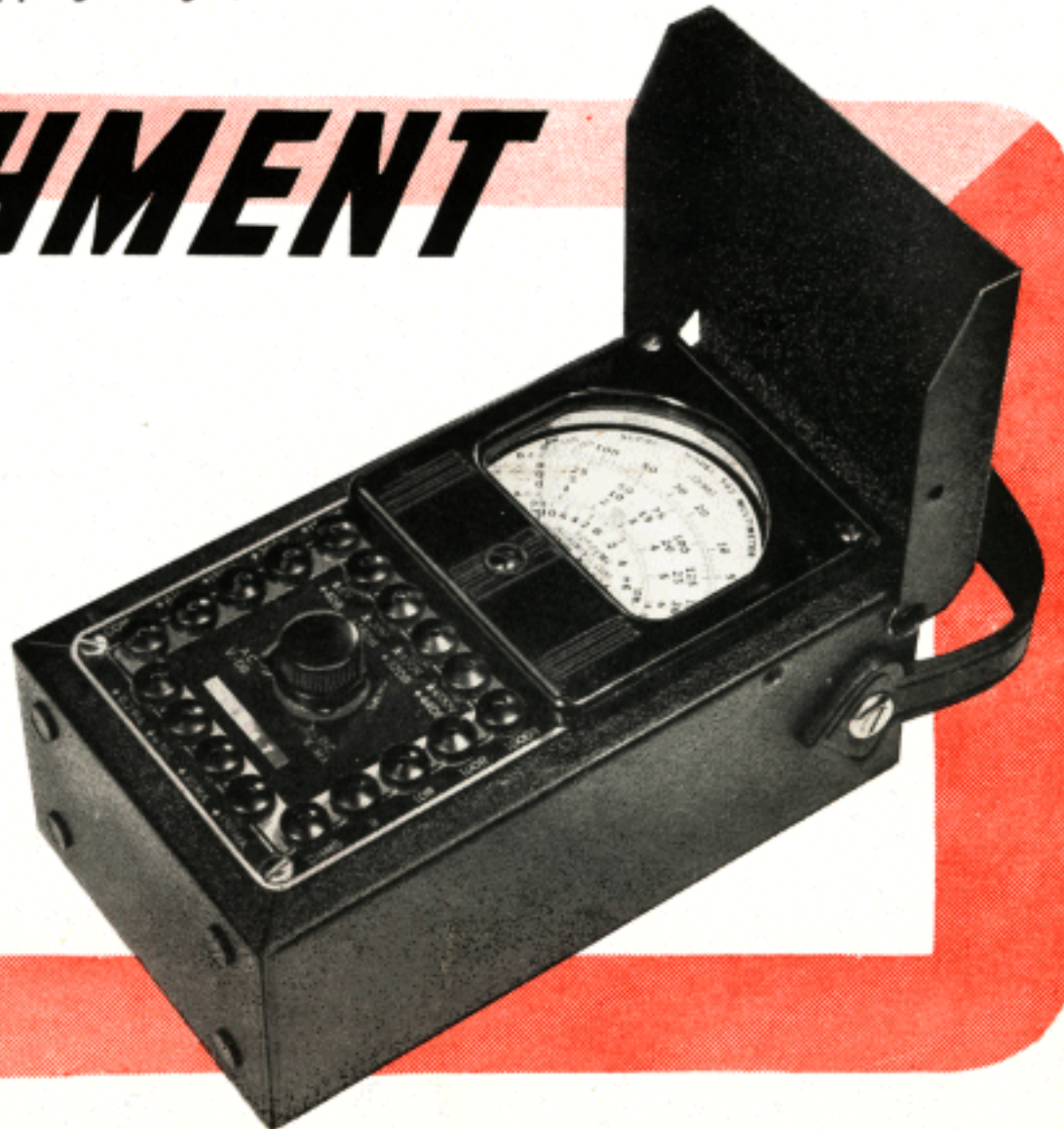
PUNISHMENT

PROTECTED!

STURDY!

SMALL!

USED BY THE ARMED
FORCES, TELEPHONE
COMPANIES, ETC.





NEW MODEL 592

← SPEED TESTER

25,000 OHMS PER VOLT!

Model 592 is for the serviceman who wants the finest multimeter that money can buy. Proved principles of engineering, custom construction, exacting inspection, laboratory calibration plus the finest materials the market affords, make the 592 the first choice among discriminating servicemen. If you want "tops" in quality, accuracy complete coverage, and speed of operation, the 592 is your instrument. Forty-four carefully selected ranges are at your finger tips. Use the 592 once and you will never be satisfied with anything less.

1 MICROAMPERE TO 14 AMPERES—The SUPREME Model 592 has eight (8) Direct Current measuring ranges from 1 microampere first scale division to 14 amperes. (70/700 microamps; 7/35/140/350MA; 1.4/14 amps.) Thus, you can measure sensitive currents in photocell circuits, make each and every Direct Current measurement in all radio and television receivers including heavy drain filament current measurements in automotive, farm and battery receivers.

DOUBLE METER SENSITIVITY—The SUPREME Model 592 has two DC voltage measuring sensitivities—1000 ohms per volt for all regular DC voltage measurements and Super-Sensitive 25,000 ohms per volt for high resistance receiver circuits. No other tester has this feature!

0.1 TO 1400 DC VOLTS—A total of fourteen DC voltage ranges from 0.1 volt first scale division to 1400 volts. Seven ranges at 1000 ohms per volt allow you to make all DC voltage measurements for comparison against standard receiver manufacturer or radio manual voltage tubes. (0/3.5/7/35/140/350/700/1400 volts.) Seven ranges at 25,000 ohms per volt give you full freedom to dynamically measure DC voltages in high resistance amplifiers, Automatic Volume Control (A.V.C.) circuits, Automatic Frequency Control (A.F.C.) circuits and, in fact, any other circuit where an added drain of over 40 microamperes would upset operating voltages. No longer do you need two separate multimeters for high and low sensitivity tests because the SUPREME Model 592 gives you both in one instrument.

1/4 OHM TO 50 MEGOHMS—Six resistance ranges from 1/4 ohm first scale division to 50 megohms and all with self contained battery supply. (1/4—500/5,000/50,000/500,000/5 megs./50 megs.) Another "exclusive" found only in this instrument! With these ranges you can accurately check every resistance in every radio or electrical circuit

from a fractional ohm speaker voice coil winding up to high resistance leakages in or between parts. You have an unparalleled, accurate electrostatic (paper or mica) condenser leakage test. No electrostatic condenser will pass this test and not operate correctly in a set!

0.1 TO 1400 AC VOLTS—The SUPREME Model 592 has 6 basic usable AC voltage ranges from 0.1 AC volt first scale division to 1400 AC volts. (0/7/35/140/350/700/1400.) No matter what AC voltage test you desire to make, be it a check of the filament voltage of a tube, the local line voltage, or the AC voltage of the complete secondary on a power transformer you don't have to guess with a SUPREME 592. A new specially designed circuit minimizes rectifier burn-outs. No safety switch to hold down—no surges or overloads to plague you. Rectifier guaranteed along with the balance of instrument!

COMPLETE OUTPUT RANGES—So that you have every conceivable advantage in lining up receivers with a signal generator and output meter, the SUPREME 592 has the full 6 ranges for this purpose (0/7/35/140/350/700/1400)—no ranges dropped—no external condenser to add.

0 TO +46 DB—You might think that the foregoing ranges were more than enough for the low price asked, but SUPREME 592 also has 4 additional Decibel measuring ranges from 0 db. to +46 db. or, in terms of watts, from 0.006 watts to almost 2 hundred watts! (0/+16; +10/+26; +29/+36; +30/+46 db.) This tester will read db. direct on any 500 ohm line with a simple conversion chart and data supplied so that readings may be taken on any line of known impedance.

SPEEDY DEPENDABLE OPERATION—Until you've actually operated the SUPREME 592, you can't conceive of its easy, lightning operation. Study the picture. There are seven functional push-button switches to the right of the meter and seven range switches to the left of the meter. All you do to obtain any one of the 44 ranges is to press one button in the left hand row and one button in the right hand row! Thus, at your fingertips you have instant control of every range and function!

EVERY RANGE SELECTED—The ranges have been selected after a careful study of the operating voltages and currents required by the nearly 400 types of vacuum tubes as well as a study of commercial circuit requirements. Based on these studies, the ranges, and overlap from range to range, were selected so that practically every reading can be made in the top half of a scale where meter accuracy is always highest.

NO "ROAMING TEST PRODS"—The very practical "Speed-Way" switch system allows all the ranges and functions to be available at only one pair of pin jacks except the 14 ampere DC range, for which heavy binding posts are supplied. These are necessary here because heavy currents produce excessive heating due to contact resistance in pin jacks and cause pin jack burnouts. Beautiful Oak Case with complete operating instructions.

Size 9-1/16" x 6 3/4" x 5 3/4". Shipping Weight, 9 lbs.



SUPREME

SUPREME INSTRUMENTS CORP., GREENWOOD, MISSISSIPPI

SUPREME

INSTRUMENTS CORPORATION

GREENWOOD, MISSISSIPPI U. S. A.

January 25, 1945

PRIORITY, PRICE, AND DELIVERY SCHEDULE

PRICES NET F.O.B. GREENWOOD, MISS. - NO INSTALLMENT TERMS

The SUPREME instruments listed below are frozen by the War Production Board under order M-293 and each order must be accompanied by an approved WPB-3243 form. These forms are available from your nearest W.P.B. office. All applications must be sent to War Production Board, Radio and Radar Section, Washington, D.C. for approval. Your order cannot be accepted until we receive the approved WPB-3243 form. Priority ratings of AA-5 or higher are acceptable when accompanied by an approved WPB-3243 form.

MODEL	PRICE	APPROXIMATE DELIVERY
542 Multimeter (Bakelite Case)	20.75	4 months
542 Multimeter (Metal Case)	22.95	4 months
543 Multimeter (Bakelite Case)	16.25	3 months
543 Multimeter (Metal Case)	17.95	3 months
504A Tube & Set Tester	83.50	3 months
546 Oscilloscope	82.50	2 months
561 Oscillator	107.50	4 months
571 Oscillator	49.40	4 months
592 Set Tester	55.95	2 months
563 Oscillator	56.15	3 months

The SUPREME instruments listed below are available on War Production Board MRO certification, AA-5 or higher rating. Orders for more than four (4) of each type cannot be accepted unless specifically authorized by W.P.B. on form WPB-3243. Orders for four (4) or less of each model do not require this certificate.

562 Audolyzer	99.95	6 months
589 Tube & Battery Tester	38.50	5 months
599 Tube & Set Tester	49.95	5 months

TEST LEADS:

Stock #6744-45 Test Leads, solderless test prod type with red and black handles and leads. Handles 4-1/2 inches. Length 4 ft.	1.00	2 weeks
Stock #6986-87 Test Leads, insulated alligator type with red and black plug and leads. Length 4 ft.	1.10	2 weeks
Stock #4437-38 Test Leads, soldered elbow type, 4 inch red and black handles. Length 4 ft.	1.25	2 weeks

NOTE: Test Leads not included with instruments but may be purchased as separate items at prices shown above.



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Vintage Schematics, and Publications**

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