

SUPREME

Testing Instruments

MODEL

574

ELECTRONIC SET TESTER

**INSTRUCTION
MANUAL**

SUPREME INSTRUMENTS CORPORATION

GREENWOOD, MISSISSIPPI

U. S. A.

SUPREME MODEL 574

ELECTRICAL SPECIFICATIONS

POWER SUPPLY REQUIREMENTS: (Unless otherwise specified on plate attached to instrument.)

Voltage.....100/130 volts A-C
Frequency..... 50/60 cycles
Power Consumption.....15 watts maximum

MECHANICAL SPECIFICATIONS

OVER-ALL DIMENSIONS:

| | PANEL | CASE |
|-------------|-------------------|---------------|
| Height..... | 9-1/8 inches..... | 10-1/4 inches |
| Width..... | 9 inches..... | 12-1/8 inches |
| Depth..... | | 6-1/2 inches |

WEIGHT:

Net.....11 pounds
Shipping.....16 pounds

STANDARD EQUIPMENT SUPPLIED WITH THE SUPREME MODEL 574

| QUANTITY INCLUDED | STOCK NUMBER | DESCRIPTION | PACKER'S CHECK |
|-------------------|--------------|------------------------------|----------------|
| 1 | 9173 | Booklet, Operating Data | |
| 1 | 6725 | Card, Return Registration | |
| 1 | 4722 | Connector, Shielded Positive | |
| 1 | 9234 | Probe Assembly | |

.....
The above list has been checked by the undersigned who is responsible for the completion of this package.

MODEL 574 (Signed).....
SERIAL #..... *Shipping Department*

MENTION ABOVE NUMBERS IN ALL CORRESPONDENCE!

IMPORTANT

See enclosed colored sheet for information concerning Registration, Transportation Damages, Warranty, Replacement Parts, etc.

The instructions listed on this colored sheet *must* be complied with before the warranty policy is applicable. The Model and Serial numbers should be mentioned in *all* correspondence regarding this tester.



#9173
INSTRUCTION MANUAL
FOR
SUPREME MODEL 574

GENERAL DESCRIPTION

The SUPREME Model 574 is an automatic push-button-operated electronic multimeter with functions for the measurement of Direct Current, D-C Voltages, Resistance, A-C Voltages, and Decibels.

All functions with the exception of the Direct Current ranges, utilize a vacuum tube arranged in a stabilized bridge circuit. Automatic operation is accomplished by means of 14 fast-acting pushbuttons, providing simplified speedy operation on the 32 carefully selected ranges.

Several features have been incorporated to secure the greatest flexibility, stability and ruggedness. Degenerative feedback employed in the cathode circuits, along with the high sensitivity of the metering circuit, contribute to the linearity of all D-C ranges. Reduced plate and filament voltages minimize tube grid current errors and limit the meter overload current in the event of improper range selection. Steady operating plate voltage is supplied during line power variations by means of the neon lamp regulators in the well filtered D-C supply. The inclusion of two D-C function push button positions, each with opposite polarity markings, eliminates the necessity of reversing test leads if the meter indication is 'backwards'.

The circuit loading by the instrument is slight since the minimum resistance on all D-C voltage ranges is approximately 20 megohms and 10 megohms on A-C.

A simple automatic plug-in arrangement is provided on the instrument for inserting a compactly designed A-C probe to extend the measuring capabilities of the tester from the nominal frequency range of 30-20,000 cycles to 100 megacycles with negligible frequency error.

POWER SUPPLY REQUIREMENTS

Unless otherwise specified, this instrument is designed to operate from 100 to 130 volts, 50/60 cycle. Power consumption is 15 watt maximum. The tubes used are: 6X5GT rectifier for supplying D-C plate voltage, 6SN7GT meter operating tube, and 9006 diode rectifier for making low frequency A-C voltage and D-B measurements. A small 1.5 volt flashlight battery is supplied to operate the ohmmeter.

The instrument is protected from damage in case of an overload by a 1 ampere fuse. In case your instrument fails to operate (pilot lamp fails to glow) remove the instrument from its case and check the 1 ampere fuse located on the terminal strip on the back of the function selector switch. Replace with a fuse of the same type and rating - 3AG 1 ampere.

If the second fuse burns out, the instructions listed under SERVICE AND MAINTENANCE should be followed. CAUTION! *The 90 day Warranty on the instrument is valid only if it is protected by a fuse having the specified rating! Do not substitute one of higher rating!*

PANEL MARKINGS AND COMPONENTS

METER:

Four-inch, SUPREME full vision type.

SCALES: OHMS '0' to '1000' non-linear with '30' mark at center scale for resistance and continuity measurements.

VOLTS MA: 0/10/25/50 basic linear scale for

all current and voltage measurements except 0/1/2.5 volts A-C.

VOLTS AC: 0/1/2.5 non-linear red scale for A-C voltage below 2.5 volts.

DECIBELS (DB) non-linear marked '(-) 20 to 0' DB for Decibels below '0 DB'; non-linear marked '(+) 0 to 15' for all other DB ranges.

PUSH-BUTTONS:

Left edge of panel - 7 buttons for selecting functions as indicated on the panel; 'OFF POWER, OHMS, -D.C.V.', etc,

PUSH-BUTTONS:

Right edge of panel - 7 buttons for selecting ranges as indicated on the panel: '1, 2.5, 10,' etc.

POTENTIOMETER: (ZERO METER)

Top left hand corner of panel for adjusting meter to 'zero'.

POTENTIOMETER:

Top right hand corner of panel for adjusting meter to full scale deflection on 'OHMS'.

PILOT:

Below left bottom edge of the meter for indicating power 'ON'.

BINDING POSTS:

Center of panel below the meter terminals for measurement of 0-25 amperes D-C.

PIN JACK:

Below the bottom right hand edge of meter marked '2500 V' for measurement of 2500 volts D-C and 2500 volts low frequency A-C.

PIN JACKS:

Bottom edge of the panel; marked -COMMON and '+ MA, AC, DB, OHMS' both used for all functions except D-C voltage measurements.

JACK: (SHIELDED TYPE)

Center of the lower edge of the panel. Used with the special positive D-C prod for the measurement of D-C on all ranges except 2500 V.

PIN JACK:

Bottom of panel inside test lead compartment, for connection of special high frequency probe tip.

SOCKET:

Top of panel inside test lead compartment, for dummy A-C probe plug or special high frequency A-C probe connector.

PLUG:

Top of panel inside test lead compartment connected to chassis with 3 inch lead. Normally plugged into socket unless the special high frequency A-C probe is used.

MODEL NUMBER:

Model 574 indicated directly below meter.

SERIAL NUMBER:

Marked below 25 ampere binding posts.

OPERATION

1. Connect power supply cable to a convenient A-C supply socket after you have made certain that it is the proper voltage and frequency. (See POWER SUPPLY REQUIREMENTS).
2. Turn instrument 'ON' by pressing any of the function selector buttons other than the button marked 'OFF POWER'. Allow the instrument to 'Warm up' several minutes or a sufficient time for the instrument to reach operating temperature.
3. A. TO MEASURE RESISTANCE AND TO CHECK CONTINUITY. Insert the tips of a pair of standard test leads in the pin jacks marked - COMMON and + MA, AC, DB, OHMS'. Press the function

selector marked OHMS and one button on the right hand edge of the panel to select the Ohms range desired. Touch the free ends of the test leads together and adjust the meter to a zero indication by means of the 'ZERO METER' control, then adjust the 'OHMS ADJUST' for full scale indication with the test leads open circuited (not touching).

NOTE: For greatest accuracy the zero adjustment should be re-checked. Read the indication on the proper meter scale as explained in the operation chart on pages 12 and 13.

B. TO MEASURE D-C VOLTS. Connect the special D-C prod lead having red sleeve to the jack marked 'D-C +' and connect a standard test lead to the pin jack marked '- COMMON'. Press either the '- D.C.V.' or the '+ D.C.V.' function selector button, depending upon the polarity observed on the meter or the circuit being measured. Press one button on the right hand edge of the panel to select the voltage range desired. Adjust the meter pointer to '0' by means of the 'ZERO METER' control. Read the indication on the proper meter scale as explained in the operation chart on pages 12 and 13.

To use the 2500 volt D-C range, a pair of standard high voltage test leads should be connected to the pin jacks marked '- COMMON' and '2500 V'. Press a 'D-C' function selector button of the proper polarity either '- D.C.V.' or '+ D.C.V.' and press the range selector button marked '2500'.

For personal safety, use extreme caution when making high voltage measurements!

C. TO MEASURE A-C VOLTS in the audio frequency spectrum 30-20,000 cycles or power line frequencies.

Connect a pair of standard test leads to the pin jacks marked '- COMMON' and '+ MA, AC, DB'. Press the function selector button marked 'A.C.V' and press one button on the right hand edge of the panel to select the voltage range desired. Adjust

the meter to '0' by means of the 'ZERO METER' control.

NOTE: Before zeroing the meter it is usually necessary to touch the free ends of the test leads together while adjusting the 'ZERO METER' control to eliminate errors caused by stray voltage pickup by the free leads. In measuring high impedance circuit voltage it is advisable to use a shielded test lead. The shield should be connected to the '- COMMON' pin jack.

IMPORTANT: Make sure that the dummy plug fastened to the panel in the test lead compartment is inserted in the socket receptacle on the same panel, otherwise all A-C and D-B ranges will be inoperative. Read the indication on the proper meter scale as explained in the operation chart on pages 12 and 13. To use the 2500 volt A-C range, connect a pair of high voltage test leads in the pin jacks marked '- COMMON' and '2500'. Press the 'A.C.V.' function button and press the '2500' range selector button. *For personal safety, use extreme caution when making high voltage measurements!*

NOTE: The meter scale is calibrated in terms of R.M.S. values with respect to a sine wave.

D. HIGH FREQUENCY AND R. F. VOLTAGES UP TO 100 megacycles can be measured by using a specially designed streamlined high frequency probe. This can be connected to your instrument simply by removing the dummy plug and inserting the probe connector in the same socket receptacle. The operation of push-buttons up to and including the 250 volt range is the same as described in the preceding paragraph. The ground return for the external circuit may be made by connecting a standard test lead to the '- COMMON' pin jack. In order to obtain the highest accuracy and to prevent lead resonance errors the prod point having a ground lead and clip should be used. The clip lead should be connected to ground and the prod itself connected to the 'HOT SIDE' of the circuit being measured.

IMPORTANT: Do not attempt to measure A-C voltages or an A-C voltage superimposed upon a D-C voltage with their combined peak value in excess of 600 volts. To do so may lead to the damage of components in the probe.

Higher low frequency voltages may be measured by plugging the A-C probe tip into the pin jack mounted in the bottom of the test lead compartment. Operation on all ranges is then identical with paragraph C - TO MEASURE A-C VOLTS.

E. TO MEASURE DECIBELS (DB) in the audio frequency spectrum (30-20,000 cycles) or power line frequencies.

Connect a pair of standard test leads to the pin jacks marked '- COMMON' and '+ MA, AC, DB'. Press the function selector button marked 'D.B.' and press one button on the right hand edge of the panel to select the decibel range desired. Adjust the meter to '0' by means of the 'ZERO METER' control. Care must be exercised to prevent stray pickup errors; refer to NOTE under paragraph C - TO MEASURE A-C VOLTS. Read the indication on the proper meter scale as explained in the operation chart on pages 12 and 13.

NOTE: REFERENCE LEVEL at Zero Decibels is .006 watts (6 milliwatts) across 500 ohms impedance, (1.73 volts).

F. TO MEASURE DIRECT CURRENT. Connect a pair of standard test leads to the pin jacks marked '- COMMON' and '+ MA, AC, DB'. Press the function selector button marked 'D.C. CURRENT' and press one button on the right edge of the panel to select the current range desired.

In using the 25 ampere range, connect leads to the two binding posts marked '- and + 25 amperes'. The '25 ampere' button should be pressed. Read the indication on the proper meter scale as explained in the operation chart on pages 12 and 13.

OPERATION CHART - MODEL 574

| TYPE OF MEASUREMENT | RANGE OF MEASUREMENT | BUTTONS PRESSED | | CONNECT LEADS | | SCALE USED | INTERPRET READING |
|--|----------------------|--|-----------|--------------------------------|---------------|-----------------|-------------------|
| | | LEFT ROW | RIGHT ROW | | | | |
| OHMS | 0-1M Ohms | Ohms | R | Ohms | 0-1000 'Ohms' | Direct | Direct |
| | 0-10M " | " | R + 1 | " | " | Add one zero | Add one zero |
| | 0-100M " | " | R + 2 | " | " | Add 2 zeros | Add 2 zeros |
| | 0-1.0 Meg Ohms | " | R + 3 | " | " | " | " |
| | 0-10.0 " | " | R + 4 | " | " | " | " |
| | 0-100 " | " | R + 5 | " | " | " | " |
| | 0-1000 " | " | R + 6 | " | " | " | " |
| D. C. VOLTS | 0-1 Volts | -D.C.V. or +D.C.V. | 1 | D.C. + | 0-10 Black | Divide by 10 | Divide by 10 |
| | 0-2.5 " | Depending upon the polarity of voltage being measured. | 2.5 | " | " | Divide by 10 | Divide by 10 |
| | 0-10.0 " | " | 10 | " | " | Direct | Direct |
| | 0-50.0 " | " | 50 | " | " | Direct | Direct |
| | 0-250 " | " | 250 | " | " | Multiply by 10 | Multiply by 10 |
| | 0-500 " | " | 500 | " | " | Multiply by 10 | Multiply by 10 |
| | 0-2500 " | " | 2500 | " | 2500V | Multiply by 100 | Multiply by 100 |
| A.C. VOLTS R.F. or LOW FREQUENCIES | 0-1 Volts | A.C.V. | 1 | (Probe) (ground) (clip) | 0-1 Red | Direct | Direct |
| | 0-2.5 " | " | 2.5 | " | 0-2.5 " | " | " |
| | 0-10 " | " | 10 | " | 0-10 Black | " | " |
| | 0-50 " | " | 50 | " | 0-50 " | " | " |
| | 0-250 " | " | 250 | " | 0-25 " | " | Multiply by 10 |

DO NOT ATTEMPT MEASUREMENTS ABOVE 250 VOLTS WITH THE PROBE OR DAMAGE TO PROBE MAY RESULT.

| | | | | | | | | | |
|---|---|--|--|---|---|--|---|---|--|
| A.C. VOLTS LOW OR AUDIO FREQUENCIES RMS VALUES | 0-1 0-2.5 0-10 0-50 0-250 0-500 0-2500 | Volts " " " " " " | A.C.V. " " " " " " | 1 2.5 10 50 250 500 2500 | Common " " " " " " | AC " " " " " 2500V | 0-1 Red 0-2.5 " 0-10 Black 0-50 " 0-25 " 0-50 " 0-25 " | Direct " " " Multiply by 10 " Multiply by 100 | |
| <i>NOTE: Reference level for "0" DB is 6 Milli-watts across 500 ohms.</i> | | | | | | | | | |
| DECIBELS | -20 D.B. to ODB ODB to +15 +15 DB to 30 DB +30 DB to 45 DB | D.B. " " " | -DB +DB +15DB +30DB | Common " " " | DB " " " | -DB Black +DB " " " " " | Direct " Add 15 DB to '+ DB' reading. Add 30 DB to '+ DB' reading. | | |
| DIRECT CURRENT | 0-1 Milliampers 0-2.5 " 0-10 " 0-50 " 0-250 " 0-1. Amp 0-25 " | D.C. Current " " " " " " | 1 2.5 10 50 250 1 25 | Common " " " " " -25 Amps | (+) M.A. " " " " " +25 Amps | 0-10 Black 0-25 " 0-10 " 0-50 " 0-25 " 0-10 " 0-25 " | Divide by 10 " " Direct " Multiply by 10 Divide by 10 Direct | | |

BATTERY REPLACEMENT

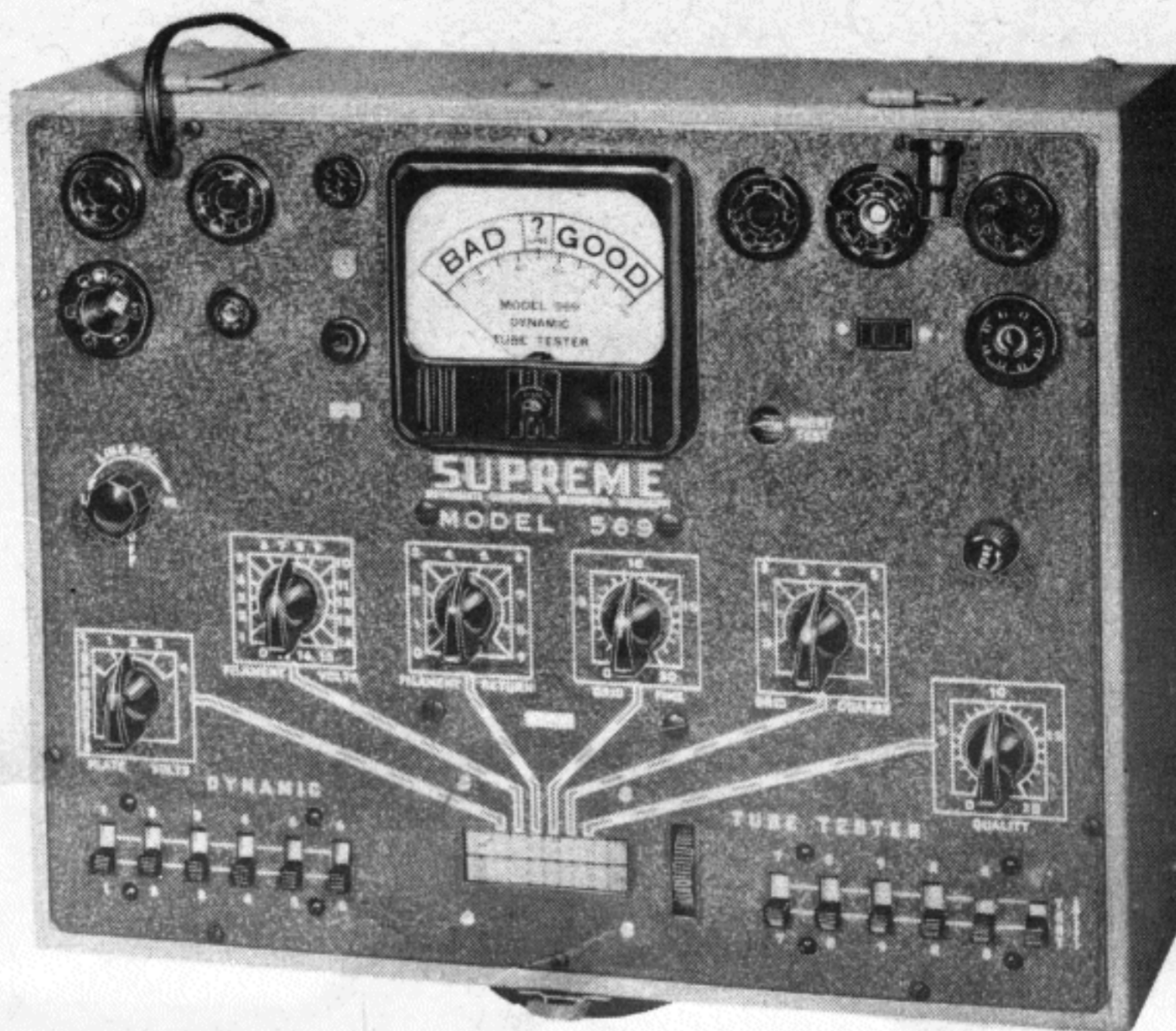
When it is not possible to secure full scale indication or the indication 'creeps' during measurements on the low ohms range when measuring resistance, the 1.5 volt battery should be replaced. It is accessible when the instrument is removed from the case.

NOTE: Do not remove the three screws on the left edge of the panel.

All functions and ranges of the SUPREME Model 574 were carefully tested and calibrated before shipment from the factory. Under normal operating conditions this instrument should give a long and trouble-free service. However, if for any reason, this instrument should fail to operate properly, write the Service Engineer at the factory. Submit *complete* information regarding the difficulty and full instructions will be forwarded in detail. The Model and Serial numbers, position of controls, inoperative section, and any other information should be given in your *first* letter.

REPLACEMENT PARTS

The parts used in the SUPREME Model 574 were carefully inspected for mechanical and electrical defects at the factory. Any special parts which are not available from regular dealer stocks may be ordered from your nearest SUPREME Service Station by describing the item and giving the Model and Serial numbers of your unit.



MODEL 569 TUBE TESTER

The Model 569 is the result of 15 years of study of the problems associated with design of a tube tester utilizing SUPREME's patented Double Floating Filament Return Selector System, which eliminates the use of more than one socket of each type. A completely new method of measuring the dynamic operating characteristics of the tube under test. Simplified operation with a minimum of controls to be set.

NOISE TEST - Circuit insert provided for checking noise, leakage, loose and bad connections.

OPERATION - 'Arrow ways' in red color lead from the tube chart to the various controls which are set as indicated on chart.

TUBE CHART - Settings for tubes provided on roller chart with easy rolling mechanism. One year Free Tube Setting Service provided.

EQUIPPED with rugged 4 inch SUPREME meter.

SELECTS TUBES 'Good' and 'Bad' on standardized percentage rating.

TESTS all receiver tubes including the latest sub-miniature types.

FILAMENT VOLTAGES available from 1 v. to full line voltages.

LEAKAGE AND SHORTS checked with neon lamp at the recommended RMA sensitivity.

Priced at _____ \$84.95



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